
A TEUTONIC STRONGHOLD IN THE CARPATHIAN MOUNTAINS

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ABSTRACT:

The HiLands Project (2018-2022) brought the opportunity to investigate several main communication corridors within the Curvature Carpathians. At the northern end of Rucăr-Bran Pass we had a great surprise, finding in the woods three strongholds, just one kilometre west of Bran Castle. Several trips on the mountain and two short digging sessions uncovered two hillforts made by the Teutonic Order, and a third one, shortly after they left. Hidden in dense forests, they have been deserted and forgotten, not being recorded in any historical accounts.

The two western strongholds are enclosed by a common outer palisade, as they were built and used together. They are rather small, each with two rows of palisades, separated by a large ditch. The eastern one firstly served as a chalk quarry for the above-mentioned buildings, but two or three generations later was turned into a fortification. The northern long side is made up by a bare cliff, almost vertical, the southern side is closed by a large palisade, with no ditch (as it was not necessary due to the strong slopes).

The downside of our research is the almost complete lack of artefacts from the 13th century, the proposed chronology being based exclusively on C14 AMS technology. Such a situation fuelled the question whether the western complex could be one of the five attested Teutonic fortresses. Its position is outstanding, offering perfect visibility up to the Bran Pass (10 km southward) or down to the Râșnov fortress (12 km northward).

REZUMAT: O FORTĂREAȚĂ TEUTONICĂ DIN MUNȚII CARPAȚI

Proiectul HiLands (2018-2022) a oferit oportunitatea de a cerceta câteva pasuri montane importante din Carpații de Curbură. La capătul nordic al coridorului strategic Rucăr-Bran am avut plăcuta surpriză să găsim, în pădure, urmele a trei fortificații, la numai un kilometru vest de Castelul Bran. Câteva deplasări pe munte, urmate de două sesiuni scurte de săpături au pus în evidență două fortificații de creastă realizate în vremea teutonilor. Ascunse în pădurea deasă, ele au fost părăsite și uitate, nefiind menționate în documentele istorice.

Cele două cetăți de vest sunt închise într-o palisadă comună, fiind realizate și folosite împreună. Ele sunt mici, cu câte două rânduri de palisade fiecare, separate de un șanț de apărare masiv. Cetatea de est a fost folosită, la început, drept carieră de calcar, pentru construcția celorlalte două, dar două sau trei generații mai târziu a devenit ea însăși o fortificație. Latura lungă nordică este reprezentată de o stâncă verticală, care nu necesită altă protecție, restul închiderilor fiind realizate cu o palisadă solidă, dar fără șanț (relieful accidentat nu îl solicita).

Partea mai puțin fericită a cercetării noastre este absența aproape completă a artefactelor de secol XIII, cronologia propusă fiind bazată exclusiv pe tehnologia C14 AMS. O astfel de situație ne-a făcut să reflectăm dacă descoperirea noastră poate fi una dintre cele cinci fortificații teutonice atestate în izvoare. Poziția este remarcabilă, oferind vizibilitate perfectă până pe vârful munților, respectiv pasul Bran (aflat la 10 km nord), și până departe spre sud, în plină Țară a Bârsei, cetatea de la Râșnov fiind la vedere, deși la 12 km distanță.

KEY-WORDS: LIDAR, hillfort, palisade, C14, Teutonic Order

CUVINTE CHEIE: LIDAR, fortificații de înălțime, palisadă, C14, Ordinul Teutonic

Rucăr-Bran corridor

The HiLands Project has been conducted between 2018 and 2022 in the Curvature Mountains of the Carpathian range, being the first Romanian archaeological project largely based on LiDAR data¹. Its trigger was the observation

¹ Sîrbu et al. 2021. The project allowed the acquisition of about 8,000 square km of LiDAR data. The referenced area is yet several times larger.

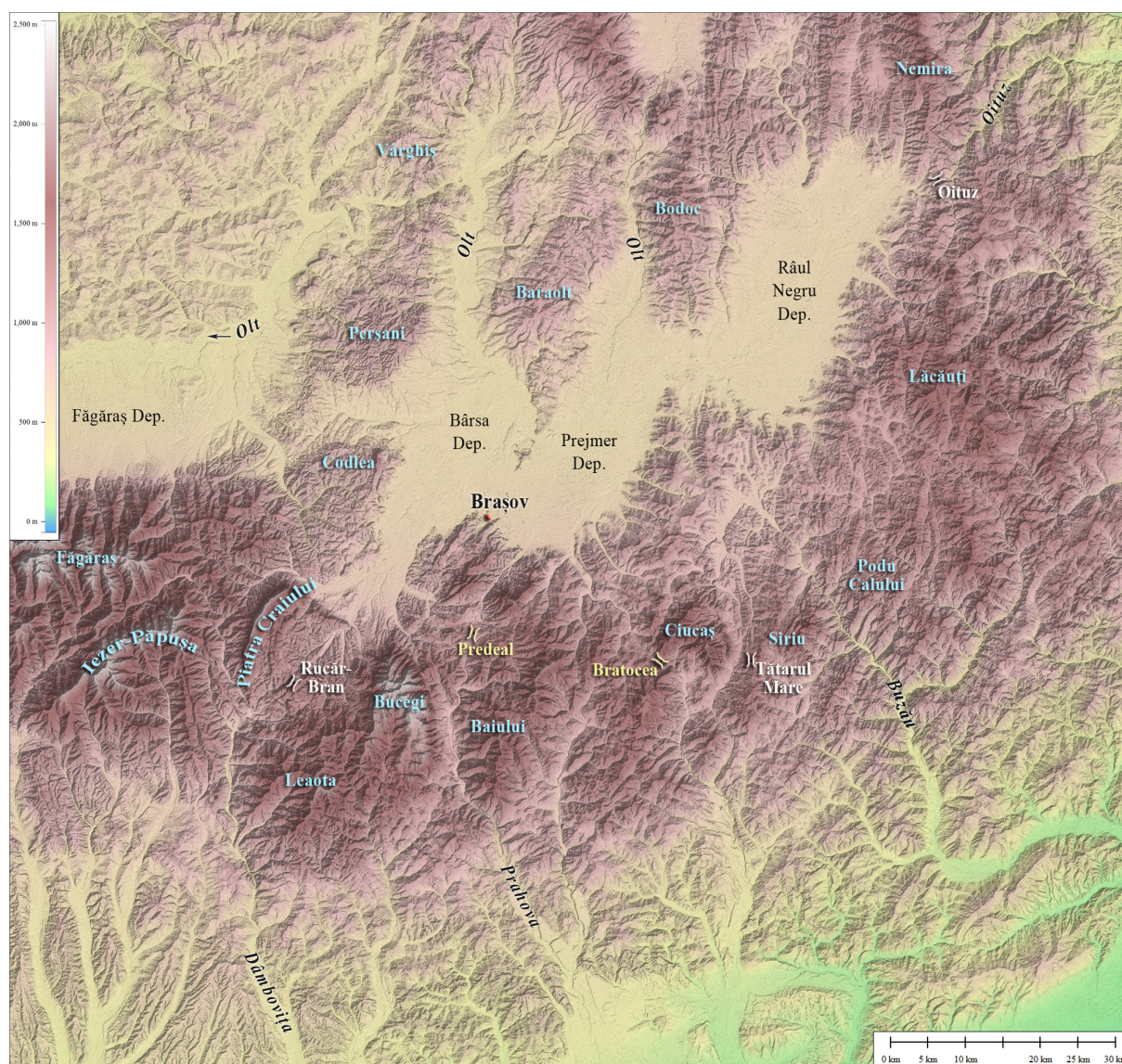


Fig. 1. The Curvature Mountains and the passes near Braşov City. SRTM-30 terrain-model.
White: historic mountain passes; yellow – modern developed passes.

that three main passes crossing the Carpathians are gathering towards the city of Braşov (Fig. 1), suggesting the high strategic value of the area. West to east, these are Rucăr-Bran Pass, Tătaru Mare Pass² and Oituz Pass³. Other passes of similar historical relevance are few: Tihuţa (1,201 m, connecting northern Moldavia and the outskirts of the city of Bistriţa), Turnu Roşu (only 354 m altitude, yet very difficult)⁴ and Vâlcan (1,621 m altitude, west of

² Known in Romanian historiography as Buzău Pass, because many medieval documents mentioned it under this name. The upper course of the Buzău River is nevertheless devoid of relevant archaeological findings north of Cislău (Dinu et al. 2011; see also RAN, where north of Cislău there is no referenced data, or at any detail, and north of Nehoiu there is no data at all), the road following the river being constructed in the late 19th century. The name of the pass is yet not wrong, as the mountain pass is close to the springs of the Buzău River. The route is old, at least from La Tène (Căpăţană et al. 2008, 165, see also the pottery from the Fig. 9), three Roman marching camps being discovered lately (Ştefan and Ştefan 2018 for the first two; the third is still not published). A Bulgarian stronghold, Slon, has been later made at the southern end (Ciupercă 2010), and a medieval fortress, Tabla Buţii, watched the route between the 14th and 17th centuries (Căpăţană et al. 2008), on the top of the mountain. The commercial route has been deserted in the 18th century, when the new route over Bratocea Pass became operational. Harsh battles were fought around the fortress at Tabla Buţii in the fall of 1916.

³ Quite similarly, Oituz Pass has been used at least from the Roman age, the western exit being guarded by a Roman fort, at Breţcu (*Angustia*). Oituz Pass was the stage of one of the most famous battles of the First World War. Although far from easy, it is the most accessible of all passes crossing the Carpathians, having a top altitude of only 866 m, and it connects the south-eastern Transylvania by the southern Moldavia.

⁴ Toda 2013, 178, 180, 184. The Olt Gorge is sometimes so narrow that the Roman road crossing it had 'bridges' clamped

Jiu Gorges), the last two making a way between Transylvania and Wallachia (southern Romania). Such natural resources, relevant for both commercial and military purposes, could easily explain the outstanding posture of Brașov during the late Middle Ages and Modern times.

As expected, such a promising area has produced interesting discoveries, assisted by modern means of research. The most exciting is a complex of strongholds just west of the Bran Castle, on a height driving towards Piatra Craiului Mtn. It lies at the northern exit of the corridor known as Rucăr-Bran, a 57 km road as measured between Câmpulung and Râșnov⁵, starting at an altitude of about 600 m above the sea at Câmpulung and reaching a final altitude of 635 m on the plain near the fortress at Râșnov. This route is crossing its maximum altitude of 1,250 m near the village Fundata, along the former frontier between Wallachia and Transylvania, at a point known as the Bran Pass (Fig. 2)⁶. At both ends of the corridor we have a town, Câmpulung and Râșnov (Germ. Rosenau). A few kilometres inside the corridor one can find, on both sides, the customs offices: Bran (Germ. Törzburg) in Transylvania, Rucăr and Dragoslavele in Wallachia. All of them could be a little older, but they are attested for the late 14th century⁷. From the three, only Bran has a fortress, located in a narrow gorge made by the Turcu Rivulet⁸, a strong defensible position; on the Romanian side, Rucăr and Dragoslavele are just two old villages where the

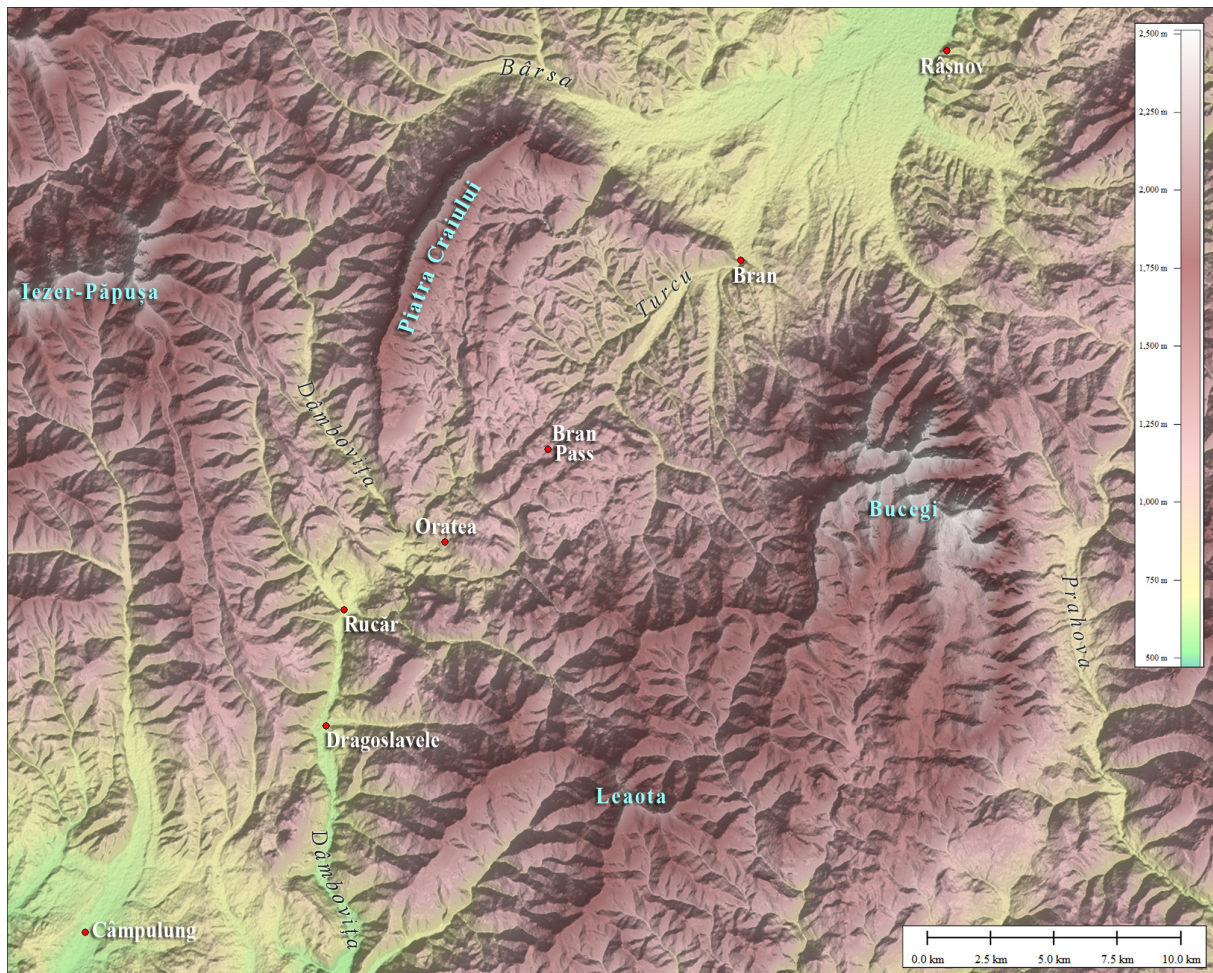


Fig. 2. The corridor Rucăr-Bran and some places mentioned in the text. SRTM-30 terrain model.

into the vertical cliffs, as in the Danube Gorges (Țintea, Călina and Manea 2022, esp. Figs. 3, 11-14).

⁵ Teodor 2022 a, 304, Table 1 (Jidova fort being located 6 km south of Câmpulung).

⁶ On older Austrian maps (as The Third Austrian Survey, see <https://maps.arcanum.com>) the place is named Ober Törzburg, or the upper part of Törzburg, which is the German name for Bran. If looking on more recent maps, one will find that the Bran Pass is credited with a height of 1,260 m, which is right. The modern route, built in the late 19th century, is crossing the former frontier one km south of the position where the old road was crossing the top of the mountain, at a lower altitude.

⁷ Teodor 2021, 362-363.

⁸ The Austrian maps have used the both names, Turcu (Romanian, meaning The Turk) and Törzbach (German).

pikemen asked the travellers to pay the custom. On the Romanian side there is also another small stronghold, Oratea, but who made it and when is still subject to debate⁹.

This is the geographical stage on which the research was developed in the last four years by the team submitting this paper.

Early LiDAR data

A terrain model derived from LiDAR cloud data showed us some exciting novelties about one km west of Bran Castle¹⁰. On the ridge driving towards Piatra Craiului Mountain, on altitudes over 1,000 m, which is more than 350 m above Turcu Rivulet, three anthropic structures were spotted (Fig. 3). The eastern one is eye shaped, 70 m in length, with obvious built defences only on the southern side, the northern one being made by a cliff (Fig. 4). Around this structure one can also find an external palisade, visible on certain spots, in a more detailed view. About 100 m further west, there is another anthropic structure, having a rectangular shape, with a length of 50 m, oriented northwest. In order to avoid confusions, this structure has been named the ‘central fort’. This couldn’t be though a standalone stronghold, as its north-western side is merging with another structure, named the ‘western fort’. This one has a round (or sub-rectangular) shape, 35 m in diameter, with an obvious gate on the eastern side. Both later forts are closed by an external palisade, more visible on the southern side¹¹, closing a relatively large perimeter, measuring almost 200 m on its length (NNW to ESE) and 135 m on the opposite direction, covering an area of 1.8 ha. It is therefore obvious that the central and the western forts were meant to work together.

As expected, we went on the mountain in order to reach a better diagnostic. The most obvious conclusions were the following:

The eastern feature is located in a dense hardwood, making observation difficult. Its middle area is concave, cut in rock (limestone), with almost vertical walls (Fig. 5), especially the northern side, which is 4-5 m high,

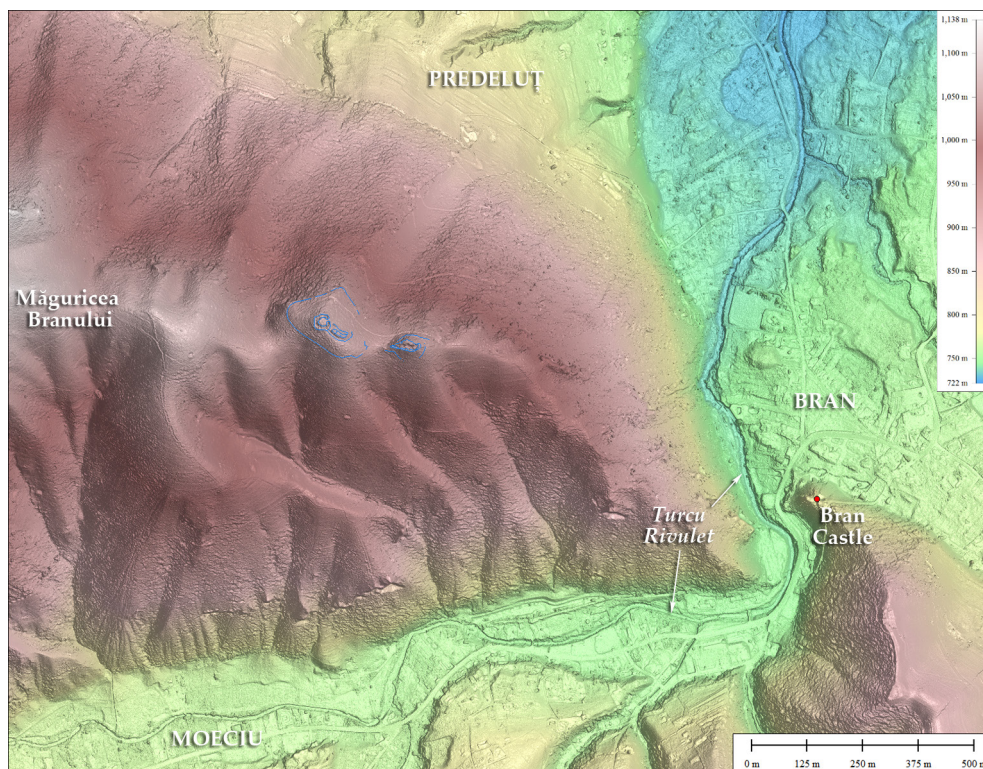


Fig. 3. Mountain road crossing Bran and the location of the newly discovered strongholds (in blue lines). LiDAR data, resolution 0.5 m.

⁹ A résumé at Söfalvi 2019. See also Teodor 2022 b, 158-159 with Fig. 2. In (especially older) literature one can find also ‘Rucăr fortress’, meaning Oratea fortress, which is not wrong (two centuries ago Oratea was located on the administrative area of Rucăr), but could spark confusion.

¹⁰ The data for Bran area came in the winter 2019/2020.

¹¹ The northern side has natural limits, as the terrain is difficult, with rocky walls.

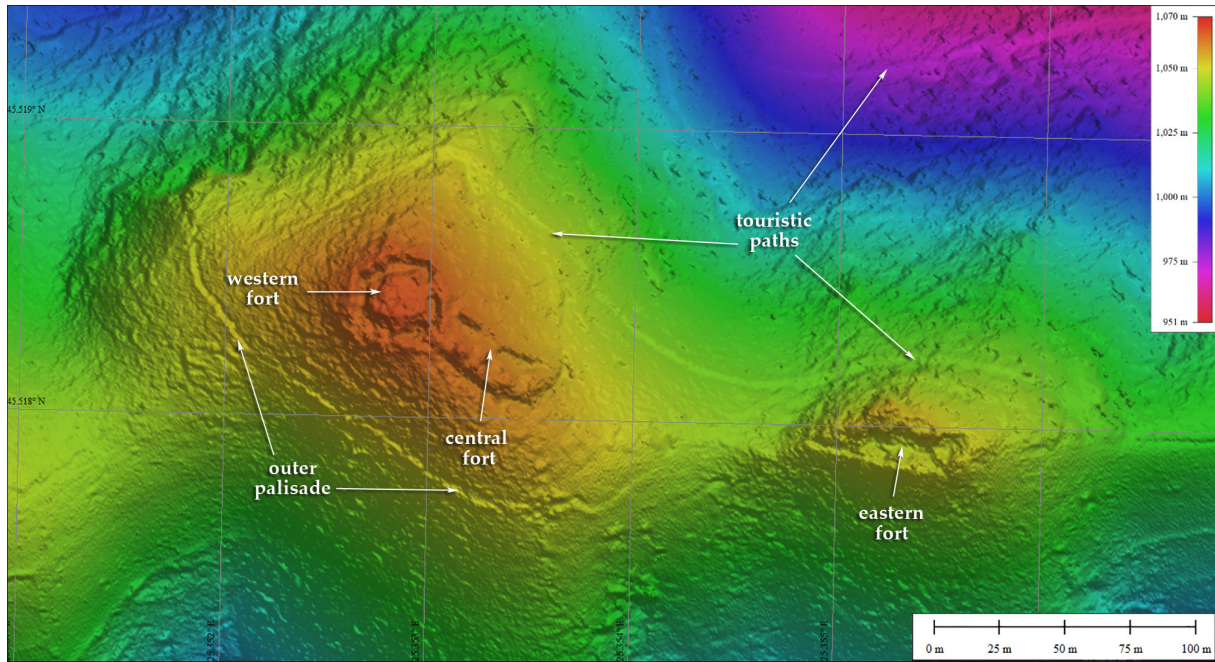


Fig. 4. The strongholds near Măguricea Branului. LiDAR data, HSV shader; with the main benchmarks.

suggesting it is the result of quarrying. On the top of these cliffs no obvious building activities were recorded, but the strong position did not require them¹². Along the southern side, a continuous groove is visible on the entire length (75 m), about 1 m wide and 0.5 m deep, which is strongly indicative of an implantation ditch for a palisade. Both sides of the ditch appear as a dry wall, made up of relatively large rocks. Its good conservation is suggesting that the stone wall was crumbling while the poles of the palisade were still standing. On the strong southern slope (27°) several thousand rocks are rolled down, as the place is open for about 20 m¹³. The pile of rocks is impressive and apparently shows the wreckage of the southern wall of the fortress. Nevertheless, it

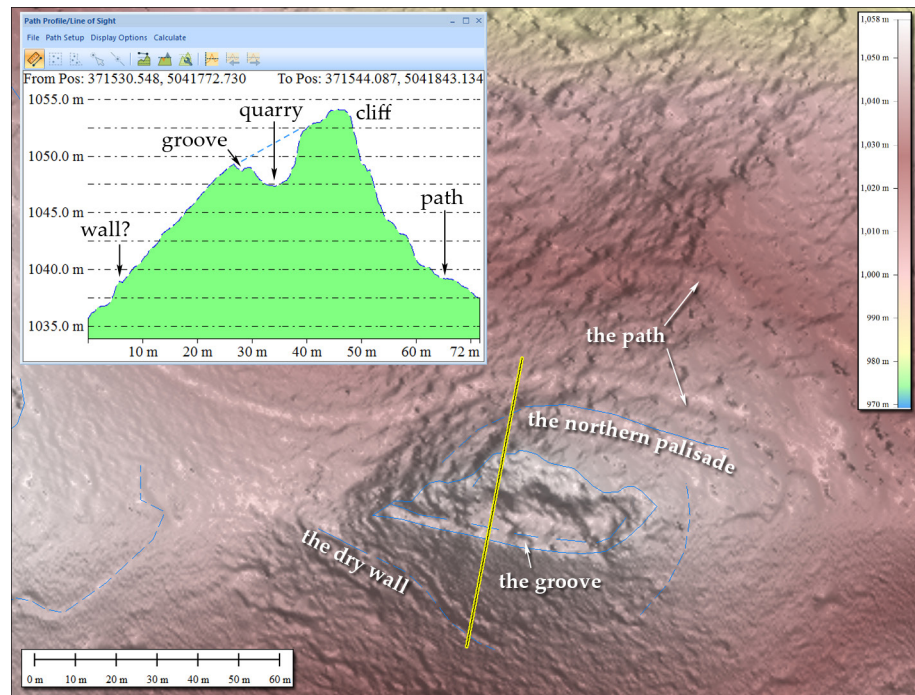


Fig. 5. Altimetric section through the eastern stronghold (south to north). Terrain model at 0.5 m.

¹² The situation is reminiscent of the cliff at Orateia fortress, on its western side, where apparently no building was added. That hypothesis was proven wrong in the summer of 2021, when an archaeological team led by A. Sófalvi cleared the cliff and showed some mason works, possibly battlements (Sófalvi 2021a). No such things were seen at the eastern stronghold at Măguricea Branului.

¹³ The hardwood obviously grew after the stronghold had been deserted. The rocks fallen from the southern wall, rolling on the slope, have been blocked by the strong trunks of the forest, 20 m below the wall, suggesting the limit of the deforestation in the good old days when the stronghold was functional. Trees cannot grow in the space in between, due to the pile of rocks.

cannot explain why the quarry is so large. Our estimation is that about 1,465 cubic meters of limestone have been displaced from the quarry, weighting around 4,000 tones. This is a quantity much larger than needed to make that southern wall. This is a riddle better understood later.

Outside of the eastern fortress some other features also got our attention. North of it lies a massive palisade, well visible to the northeast, but less and less clear as it advances towards west; in that area it comes closer and closer to the cliff, from which hundreds of large rocks have fallen, and are now mixed with rotten trunks. On the opposite (southern) side, there is only one single clear item, which is a dry wall, well visible only in the south-western area, exhibiting a conserved height of 0.9 m and a width of 1.17-1.25 m (Fig. 6). In the upper side of the wall there is a watch path 1.5 m wide. It is located in a very dense forest and cannot be followed more than 15 m, as it gets lost among bushes and rolled rocks¹⁴. The LiDAR file is suggesting that it is continuing on the south-eastern side of the fortress, but the fact could not be visually confirmed in the field.

The middle fortification is rectangular, elongated northwest to southeast, descending with the ridge, and it is very narrow (Fig. 7). It has a central precinct, 30 x 7 m, surrounded by a large and deep ditch. The width of the ditch varies from 6 to 8 m, with differences of level from 1.5 to 2 m inside and 0.5 to 1 m outside¹⁵. What one could see is the fact that both sides of the ditch are walled with limestone. These are dry walls, as there is no water source nearby, and it is not possible to make mortar on the spot. The inner space of the central precinct is split into three relatively equal spaces, by walls (?) rising above the tilt plateau by one or two metres. A circulation corridor is left at the north-eastern edge, pretty narrow (around one metre).

The overall impression of the central stronghold, at the first sight, was that of ‘an (early?) medieval fortification’, the walled ditch being understood as a (counter-)‘escarp’. The puzzling fact, yet, was that the middle fortification



Fig. 6. The dry wall southwest of the eastern stronghold, view towards east.

¹⁴ Clearing the bushes is not only difficult (and expensive), but it is also not recommended, as the forest south of the crest is a private property, outside the protected natural area (Piatra Craiului National Park).

¹⁵ Measurement on the ground, using the LiDAR file. On real measurements in the excavation – later in this paper.

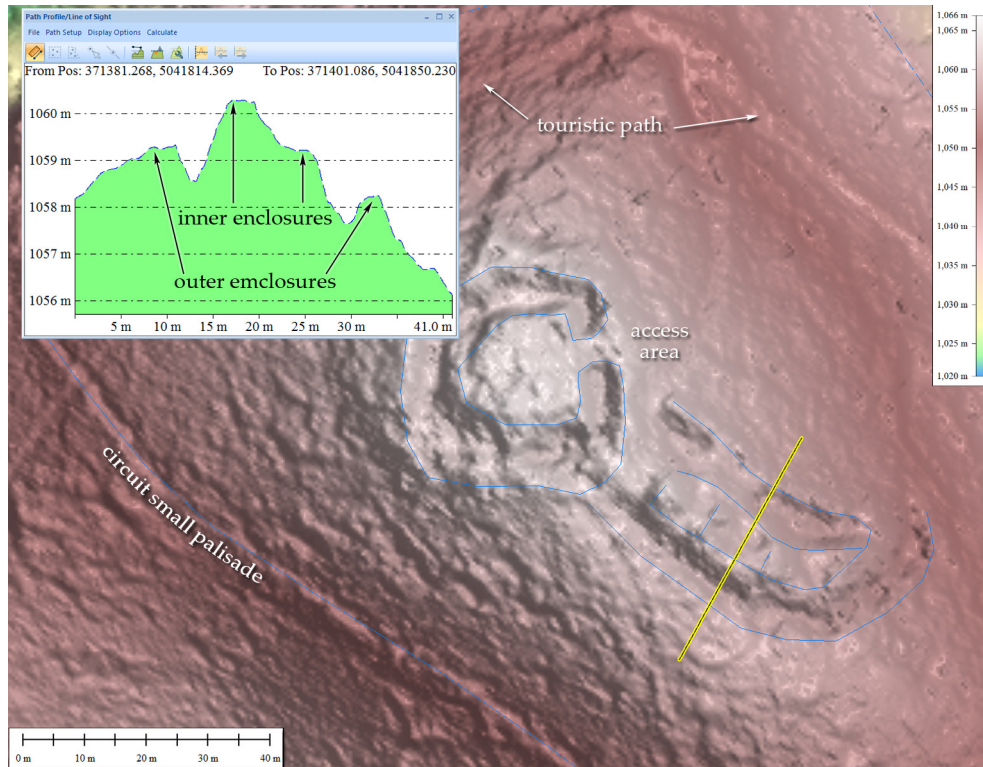


Fig. 7. Transversal section over the central stronghold, terrain model at 0.5 m.

is merging its outer defences with those of the western fort, but the latter did not seem medieval, at first sight. The western fort is keeping the dominant position, and no one would make a fortress in a weak position.

The western fort, which holds the higher position in the area, has some things in common with the central fort, such as the two rows of defences, separated by a large ditch in between (Fig. 8), with similar figures for its dimensions. There are yet obvious differences, such as the round shape, at least as seen from the ground, and the absence of the stone walls¹⁶. The entrance is made through a non-ditched segment on the eastern side, recalling, frankly, rather prehistoric fortifications. But this was not making much sense.

Preparing the excavation

An archaeological digging at Măguricea Branului¹⁷ can bring headaches. The site is located 280 m higher than the closest houses from Predeluț, at its north, and 305 m higher than the closest households from Moeciu, at its south. We made a full tour around the mountain hoping that we would find a mud road usable by a terrain car, or any way to reach on the ridge, in any point. We were unable to find it, therefore a starting point in Predeluț remained the only solution. From this village there is a sort of road, climbing the mountain through a forest cut¹⁸, quite narrow and in a bad shape, reachable only with an ATV, if heavy loads are to be carried. As the tools and instruments one needs for an excavation are quite numerous¹⁹, to the point it is unreasonable to be carried up and down by foot on daily basis, the necessity to make a tent camp on the crest came up. A proper place exists in the saddle between the eastern stronghold and the other two. We thus had to organize a night guard shift and to find a permanent base at the mountain foot, in a pension.

A second set of problems to be solved has been connected with the fact that the ridge, as well as the entire northern side of the mountain, is part of Piatra Craiului National Park. Among other restrictions related to this status is

¹⁶ Some limestone rocks were discovered much later, during the second digging campaign.

¹⁷ This is the closest place name in the area, located nevertheless 1.5 km further west, on the same ridge. 'Măguricea' is a diminutive for 'Măgura' (approx. 'hillock'), the spot with that name being located still further west. The ridge is connecting the gorge of Turcu Rivulet, to the east, to Piatra Craiului Mountain, to the west. As 'Măgura' (or 'Măguricea') are quite frequent Romanian toponyms, we have preferred the full name, as used by the locals, 'Măguricea Branului', although it is not found on any map.

¹⁸ It is visible on any aerial image, for instance on Google Earth.

¹⁹ Add here the food and the water.

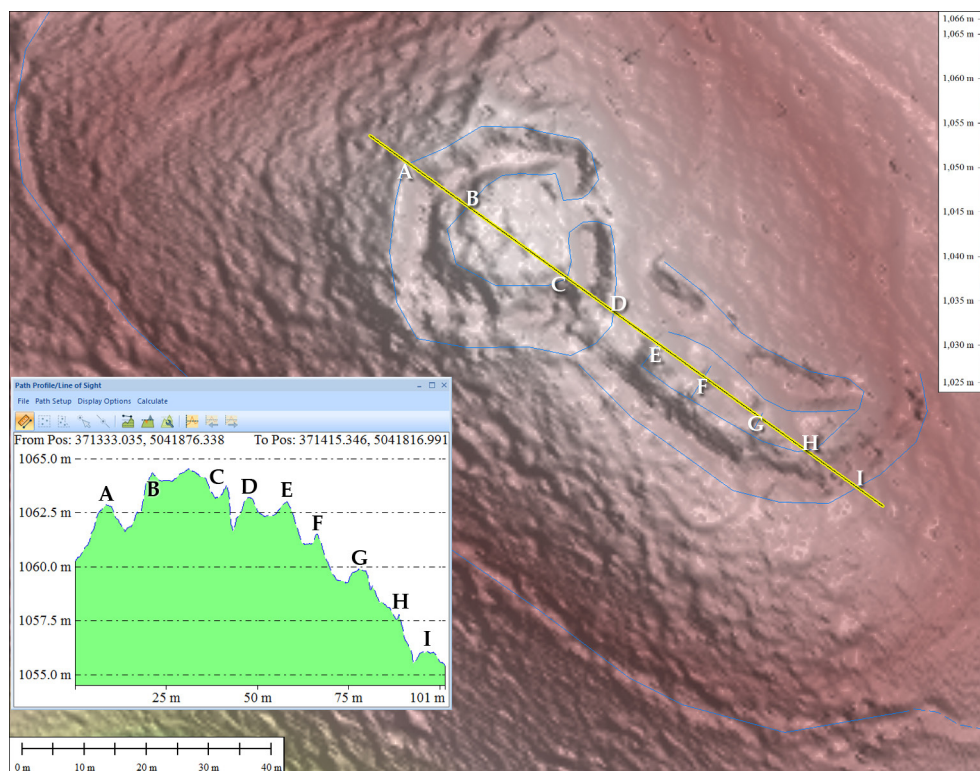


Fig. 8. Longitudinal section through western and central fortifications, terrain model at 0.5 m.

the interdiction to use mechanised transportation, as an ATV. We did some homework, in order to explain the situation, as no precedent was known and the law does not provide for the situation of an archaeological project in a protected natural area²⁰. We also had to wait the answer for several months, but we finally got the agreement. Before reporting on the excavation, there are some general facts to be said about the situation on the mountain.

Almost the entire archaeological site is covered by forests. The eastern fort is under a canopy (mainly beech and birch), a small glade appearing only on a spot south of it²¹. The central and western strongholds are below very large fir trees, except for their southern sides, where there is a mix with hardwood. The density of the canopy makes geolocation acquisition data difficult, and the exact position of our sections could only be established with perseverance, waiting for a 'happy hour' to get a valid RTK position. In order to deal with the fir canopy from the western stronghold, in the second campaign we were compelled to bring a total station, as the RTK GPS was almost completely 'blind'. Errors expected in drawing the plan are anyway within the interval of 5 to 10 cm, due to the aforementioned difficulties.

We had two short excavation campaigns, between 13-25 September 2021 and 11-22 July 2022 respectively, as the basic job was a 'diagnostic' digging, not a 'systematic' one. We used three workers and ourselves, the leader, Eugen S. Teodor, and a volunteer present each day on the mountain, Ovidiu Popescu, both in their 60s²². About half of the time we had the help of our architect friend, Toader Popescu. For shorter time lapses other collaborators were present on the site – Dan Ștefan, specialist on topography and LiDAR issues, and Răzvan Bolba, specialist in First World War gear. Other volunteers were present on site for a couple of days each²³.

Folks from the area knew something about the old fortifications, but were speaking about 'Austrian trenches from the war'. As local traditions almost always hide a seed of truth, we have analysed the information provided by several sources, although the statement itself is impossible. During the Second World War there were no military

²⁰ One can recall only the case of Sarmizegetusa Regia, in Șureanu Mts., located in a Natural Reserve, which has a lower rank of protection, therefore fewer restrictions. There is a road driving almost to the fortress' gate and hundreds of cars make it on a daily basis.

²¹ The clearance could be old, as the view towards south would be impeded in its absence, and this is the main feature of the place – a perfect panorama towards the main mountain chain. The rolled stones had prevented the forest from coming back.

²² Ovidiu lives in Predeluț, which was very fortunate, as he already knew the places, the people and many other things. He used an ATV on a daily basis, in order to supply the camp with water and edibles, when not for tools and other stuff. Many thanks for his services.

²³ Mircea Adrian Codoban, Constantin Nistor, Florin Băscăanu, Cristinel Galian, Ionuț Lucian. Daniel Matei provided us with a generous pack of gas recipients for our cooker stove in the mountain camp.

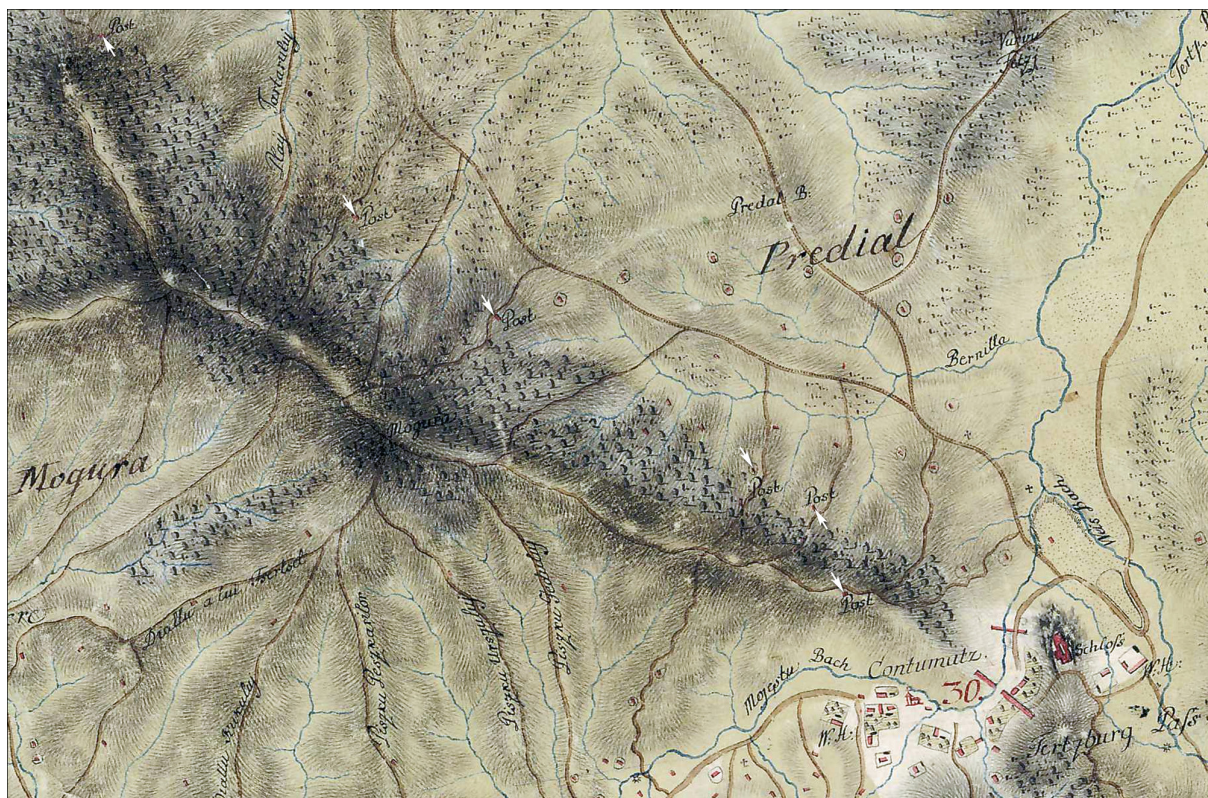


Fig. 9. The First Austrian Survey (1769-1773 for Transylvania), area west-northwest of the Bran Castle. The white arrows are highlighting the border guards' posts.

operations in the area, German troops retreating fast after the events on August 23rd, 1944. During the First World War no Austro-Hungarian troops were present in the area (other than frontier guards), and the German army was present just for a few days (9-14 October 1916)²⁴, not enough to build the road connecting Predeluț to the Măguricea ridge and the 'artillery positions' (as one source said) from the top²⁵.

Another possible hypothesis for the 'Austrian positions' could be related to the frontier guards before 1842, when the posts were located exactly along Măguricea Branului (Fig. 9). As we can see on the First Habsburg Survey²⁶, guard posts were located along that ridge, mainly on the northern side, controlling the footpaths. Only one is located on the ridge, and that one is the easternmost of them, located 1.14 km from the Bran Castle, as measured on the Austrian map, which is close enough from the real distance between the western stronghold and the castle (1.18 km). One should not rule out the possibility an Austrian guard post was located there, but we have to keep in mind the differences of sizes, as the typical post would be a wooden cabin 6 x 4 m or so²⁷.

As we shall see, our research highlighted a military presence only for the First World War, nothing older occurring on the ridge²⁸. Complementary to the test excavation, extensive metal detecting on the whole area has been undertaken, and nothing bespeaks about the first half of the 19th century, as in 1842 the Habsburg border guards left the place for the mountains' crest, about 10 km towards the south. The only thing in the area that could possibly be ascribed to Austrians is the road driving from Predeluț to the ridge, finishing exactly 50 m north of the western stronghold²⁹. The imperials could have had not only reasons to build the road – as the post on the ridge lacks water

²⁴ Kirițescu 1989, 297-299, 410-411. The author has written his book in the years after the war, using the Julian calendar, which was 13 days behind the Gregorian calendar. Romania adopted the Gregorian calendar in 1919, but all the documentation gathered for the First World War used the old Julian calendar. Kirițescu published his opus in 1922, giving historical data as collected, with the old calendar.

²⁵ Within the HiLands Project we had to deal also with battlefields from the WW1, therefore we are able to tell the difference (Teodor and Bolba 2022). An artillery position near Bran exists on the opposite ridge, southeast of Bran Castle, on Portița Heights.

²⁶ With data collected in 1769-1773. See <https://maps.arcanum.com/en/map/europe-18century-firstsurvey/>.

²⁷ Teodor 2021, 385, Fig. 20, where a Romanian guard post from 1850s, very likely similar, is rendered.

²⁸ One single fact is to be mentioned as possibly related with Habsburg military presence before the 19th century: a harquebus ball, found on the northern slope of the western fortress, but at a certain distance (about 70 m).

²⁹ The road, typically measuring below 2 m in width, but with enlarged turns (only the western ones!) in order to allow carts to make it both ways, is ending 50 m north of the western stronghold's gate. From this point, the marked touristic path is



Fig. 10. Photograph taken from the eastern stronghold, view towards south.

– but also the time to do it, as their border guards stood there for many decades. As for the reason for which that modern post has been built on the ridge, it is the same as for any military climbing of the mountain here: the view is excellent towards the south, keeping in sight the Bran Pass (Fig. 10).

Diggings on the eastern stronghold

For the first trench (T1) has been elected a place where the groove along the southern side of the eastern stronghold was well visible and the bushes were less dense (Fig. 11). The trench is 8.5 m long and 2.2 m wide, oriented towards the northwest. It crosses what appeared as an outer wall, a groove 75-80 cm wide, and an inner wall, ending in the courtyard of the fortress (Fig. 12). Taking those parts one at the time, the archaeological situation was as follows:

The outer wall is a proper wall (although a dry one) only where it faces the groove (Fig. 13); six (irregular) rows of the elevation are conserved here, made almost vertical, on a height of one metre. Immediately to the southeast (towards the exterior) we found only what could be described as a ‘pile of rocks’, preserved (or made) uneven, stretching for 1.8 m towards the valley, at its widest, but completely missing nearby. We did not find a good explanation for a while, but the subsequent comparison with other sections (as the Trench 5) was fruitful. The issue will be addressed later on.

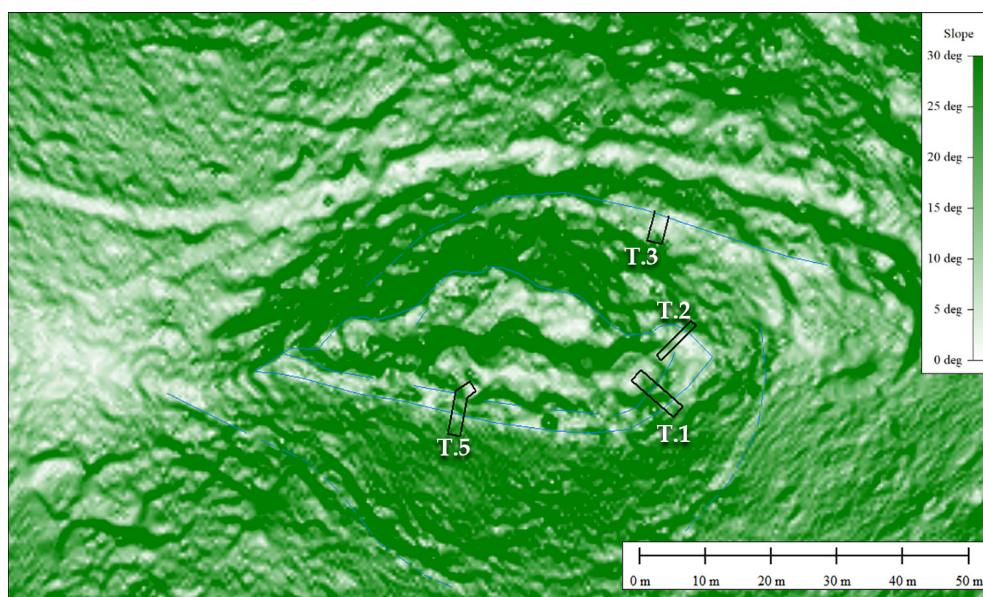


Fig. 11. Archaeological trenches on the eastern fort. LiDAR file, 0.5 m resolution, slope shader.

continuing on the usual width for pedestrians, below half a metre.

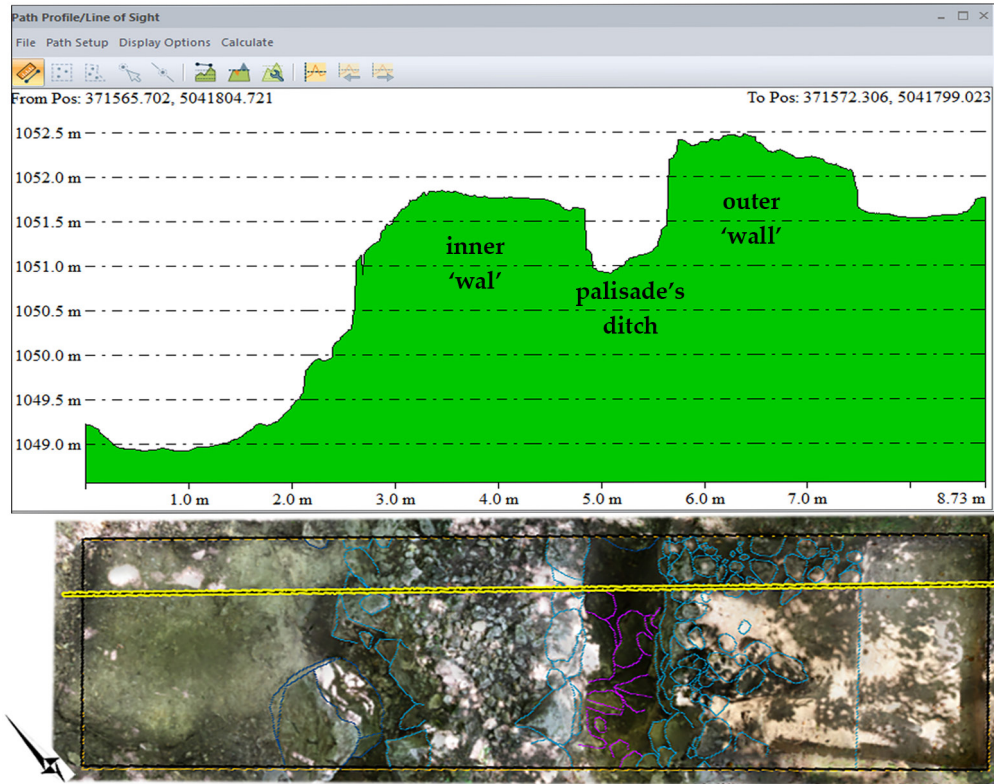


Fig. 12. Trench 1, orthophotograph (resolution 0.5 mm) and section over pendant terrain-model (res. 2 cm), projection UTM 34.

The groove is a palisade ditch, partially dug in the native rock, partially walled up. As stated, about 1 m of its depth is made up by the external wall, and about 0.4 m by dislocating the stony bedrock. The places meant to receive the poles of the palisade are deepened further, another 10 cm. Judging from the width of the ditch and the marks on the bottom of the ditch, the palisade poles were quite large, with a diameter estimated around 0.5 m (or more). The interesting fact here is that the ditch remained half empty for a very long time, which means that the ruin of the fortress began relatively quickly, when the wooden poles were still standing.

The inner dry wall is smaller, being only about 0.5 m tall and having only

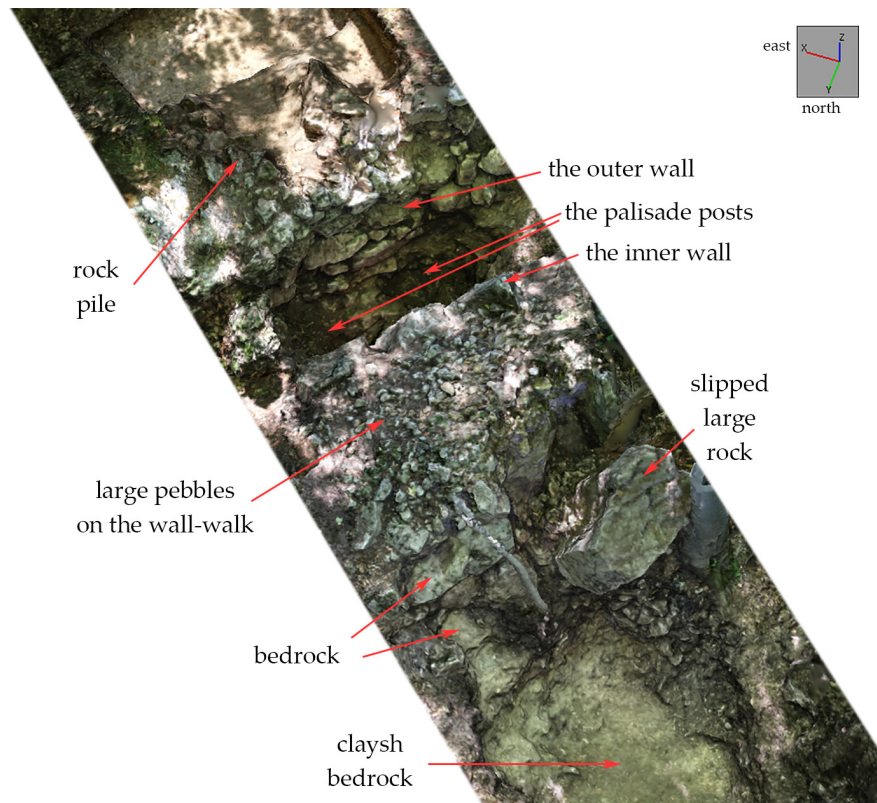


Fig. 13. Trench 1, orthophotograph (res. 0.5 mm), ortho mode, view in perspective, describing the main parts of the defences.

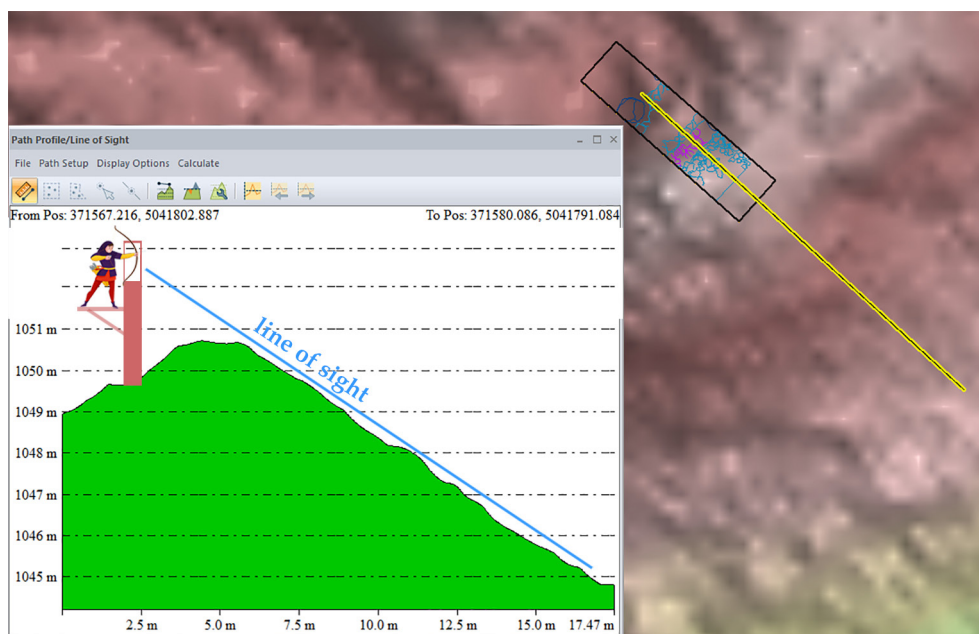
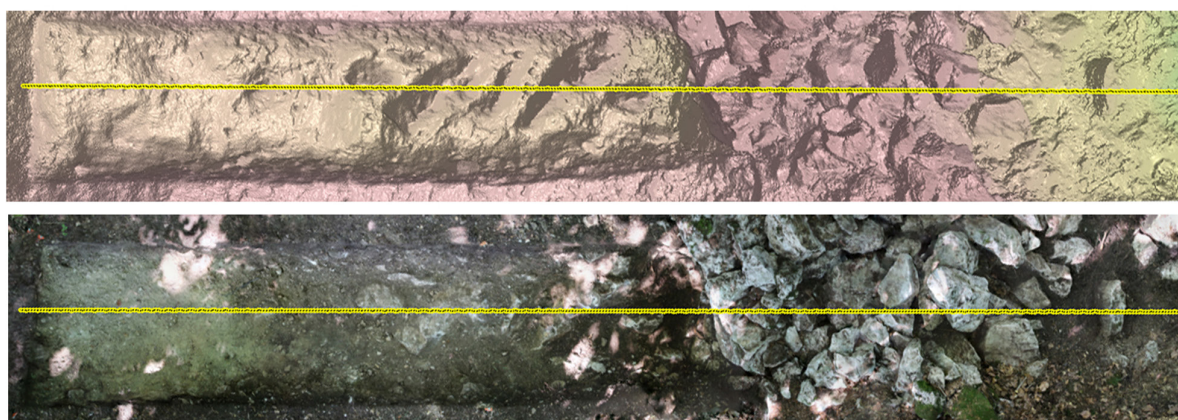


Fig. 14. Trench 1, line of sight, restitution. Terrain-model at the resolution of 0.5 m. UTM 34.

two rows of stone, made in large and heavy pieces. The wall-walk is about 1.15 m wide, using pebbles as a levelling layer. The face towards the courtyard is made up from large rocks in their original positions; one of them – heavier than one ton – is half collapsed, propped up by a tree trunk, which places the event close to our time.



Măguricea Branului, trench 2.

In order:

- terrain-model (res. 3 mm)
- orthophotography (res. 0.8 mm)
- altimetric section

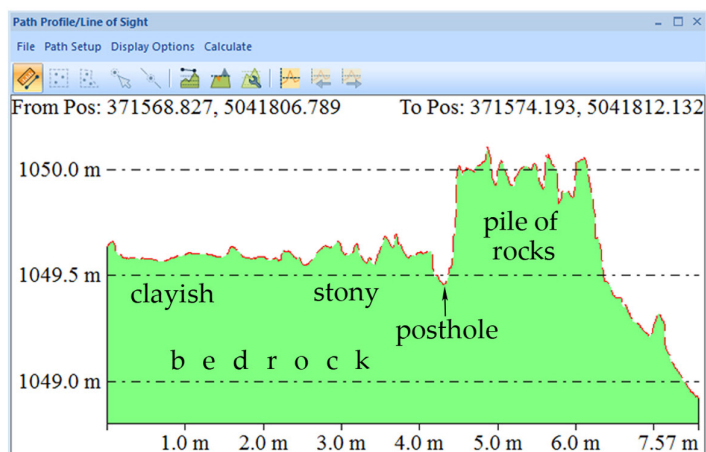


Fig. 15. Trench 2, terrain-model (res. 3 mm), orthophoto (res. 0.8 mm) and altimetric section, UTM 34.

The inner wall is about 2.5 m higher than the courtyard, which is plainly clayish, with smaller stones, apparently from the bedrock. We were not able to see anything like a ground layer, garbage or organic leftovers. This is disturbing and could mean that the fortress has been made, but never manned. Such a theory is in itself baffling.

The presence of a stony alley on the inner wall (mentioned before as a wall-walk) could suggest that the palisade was not tall at all, as somebody standing there should see between the battlements. This is surely wrong when looking at the line of sight of a soldier defending against an enemy approaching on the southern slope (Fig. 14). He should stand at least 1.8 m higher than the alley made of pebbles and crushed stones, therefore the palisade should rise at least 3.3 m above the ground. This would better explain the size of the poles, estimated to at least 0.5 m in diameter.

The second trench (T.2) has been made against the eastern precinct, where a pile of rocks was clearly visible, but no inner wall or ditch were in sight. It is 7.35 m in length, oriented towards the northeast, and has only 1.1 m in width, as a deep dig was not expected. It was shallow indeed, the bedrock being found immediately below the grass (Fig. 15). Interesting to note, it is clayish at the south-western side³⁰, but made out of rocks, in their natural orientation, in the middle area. This time, the pile of rocks is not suggesting a wall at all, although its inner edge is vertical, has a width of 1.85 m (similar with the situation on T.1), with some of the pieces being rolled on the north-eastern slope. At its inner limit, nevertheless, a pit was found, dug in the rocky layer, in order to accommodate a post of the palisade, with a diameter of about 0.7 m, no deeper than 10 cm. As the trench is so narrow, we cannot be very confident, but apparently the continuous ditch of a palisade is not present. Northwest of the Trench 2, or just a few metres away, there are no signs of an artificial barrier, as the natural rock is profiling into the landscape.

During the excavation on Trenches 1 and 2 we took some time to study the concavity from the middle area of the fortification, very likely a former quarry. It turned out that our terrain model – derived from a LiDAR file – does not render properly and in detail the main features of the area. The space is split into four ‘rooms’, lower than the surroundings (Fig. 16). In order to have a more specific rendition of the cavities, have taken hundreds of photographs, trying to put them together in orthophotos. The process was painful, as the dense vegetation was obstructing not only

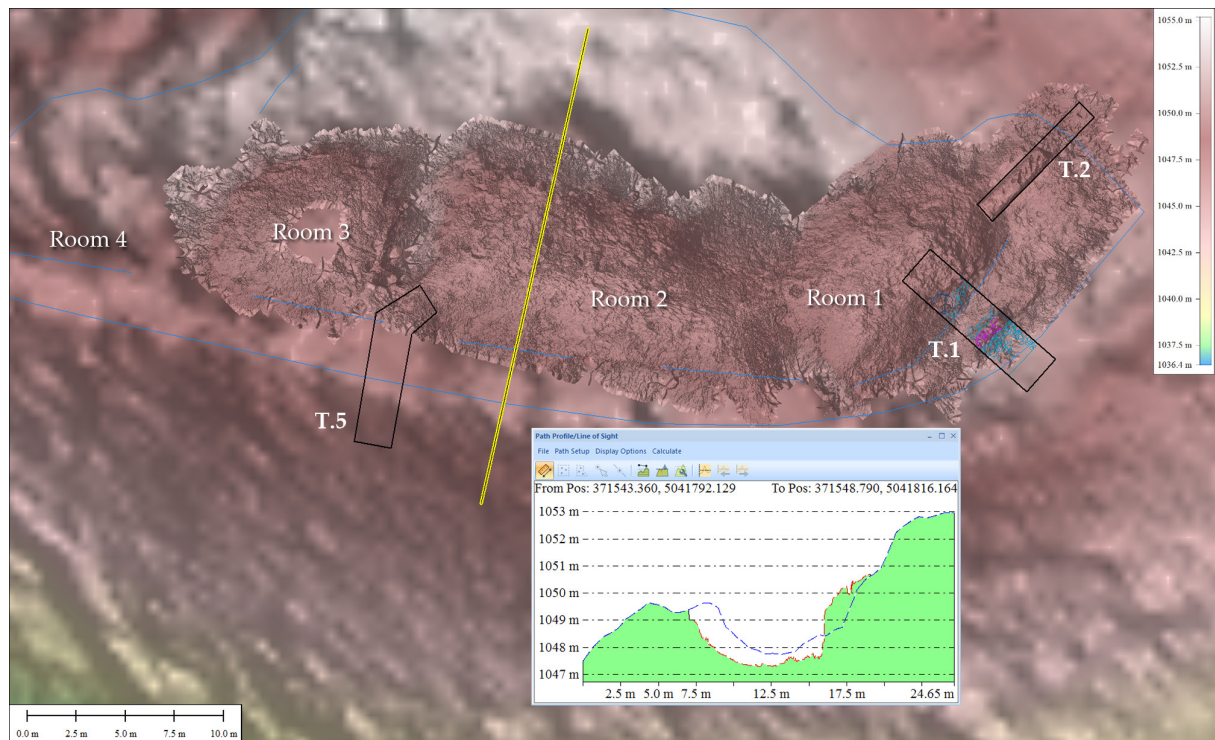


Fig. 16. Eastern stronghold, cross section through the ‘Room 2’, comparative data from LiDAR file (res. 0.5 m, blue) and terrain model reached by photogrammetry (res. 1.2 cm, red), UTM 34.

³⁰ Similarly to the inner side of the Trench 1. This is suggesting that the limestone occurrence in the area is limited, at least as seen at the surface.

pictures, but also made it difficult to acquire accurate RTK GPS data³¹. Each of the three larger rooms³² have been processed separately, then the dense cloud points of points was imported into the GIS application, where the tree trunks were cut off, then the dense cloud was been turned into a DEM, as rendered in Figure 16. The new DEM (originated in the dense cloud point) is far more detailed than our LiDAR data, having a resolution at 1.1 cm per pixel. There are obvious differences between the LiDAR file at 0.5 m and the new DEM at 0.01 m. The main gain was a better understanding of the space inside the former quarry. We noticed the clear-cut separation between 'rooms' 2 and 3, where the original shape of the land has been maintained for the northern and central area of the quarry, very likely with a purpose (Fig. 17). What would that be?



Fig. 17. Photograph taken on the eastern stronghold, towards the 3rd 'room' of the quarry, in late October 2021, from southwest. In the foreground – the groove between the outer and the inner walls.

We have noticed with the same occasion that the separation wall

between these spaces (2 and 3 on Fig. 16) is standing exactly where, apparently, towards the southern precinct there is a gate, a place where the groove is absent and the inner 'wall' is missing (Fig. 18). In that place we have placed Trench 5, during our second campaign (2022), measuring (at the beginning) 6.6 x 1.95 m. The trench is made perpendicular to the precinct, leaving undug a strip of grass, in order to protect the precinct line (Fig. 19)³³.

The most interesting facts were recorded on the external side of the wall, at the most southern part of the trench. The oldest layer is a quarry dump, containing broken parts of the limestone, which were extracted and left on

³¹ RTK is a class of professional GPS device able to take coordinates with an accuracy around 1 cm. In order to give a correct orientation for an orthophoto (and secondary products, as digital elevation model or point cloud), one needs benchmarks with known coordinates. In the given conditions – in a thick forest – errors around 4 cm (in plan) are acceptable, but this proved a tough nut in several instances, waiting for hours in one spot to receive good GPS data.

³² There is a fourth, smaller room, at the western end of the fortification, too small and too crowded to take pictures. It looks like an irregular triangle with sides about 4-5 m, at the western tip of the stronghold.

³³ Due to the strong slopes on the both sides of the precinct, there was a problem with the matters pulled out from the digging, as the stone would roll down, making the restitution of the land form impossible. The vegetal layer grown over the ruin is very tough and is a natural protection against crumbling stones of the wall.



Fig. 18.
Photograph taken on the eastern stronghold, in 30 October 2021, heading north. In the foreground – the interruption of the inner wall, very likely a gate; in the background – the cliff separating the 'room' 2 (at the right) and 3 (at the left). This is the place where later was done the Trench 5.

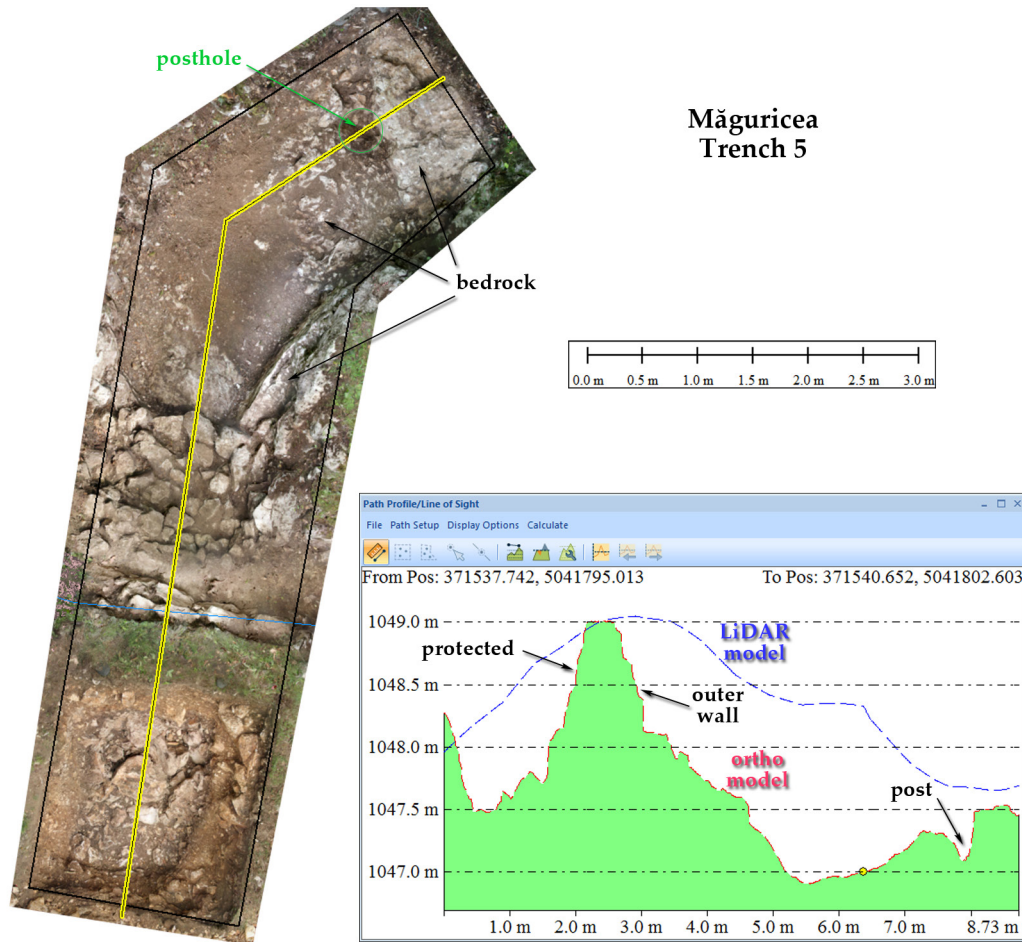


Fig. 19. Plan and altimetric section (from south towards north) of the Trench 5. Orthophoto and digital elevation model of high resolution (0.5 mm for orthophoto and 2 mm for DEM), heading north. Topographic section of the terrain before digging (blue) and after digging (red). Projection UTM 34.

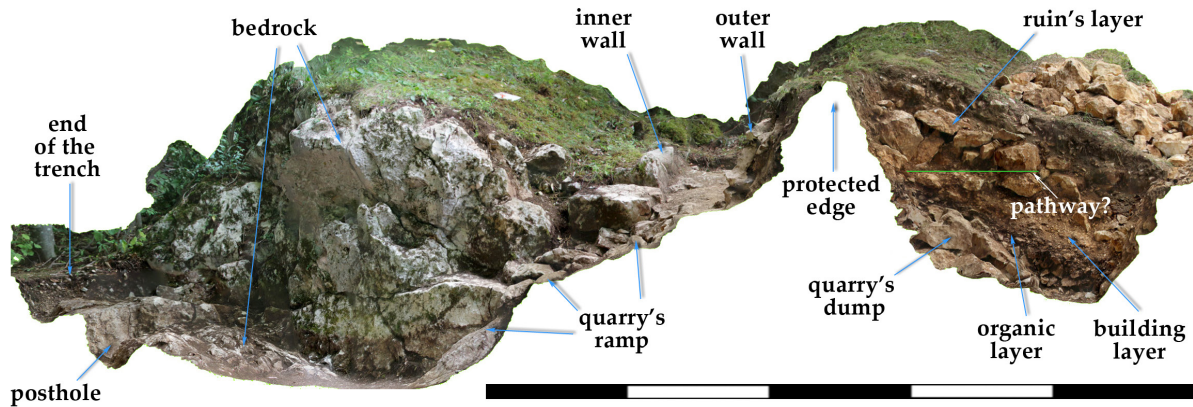


Fig. 20. Orthophoto of the eastern section of the Trench 5. Note that outside the trench has been cleaned a stretch of the palisade's ditch.

the ground³⁴. The layer is clear, of a neutral colour, with loose connections between the stones, as they were just dumped, not walled. Above it occurs a blackish, organic layer, relatively thin, about 10 cm, which should be due to the abandonment of the site for at least one generation (more likely two or three), time needed for the vegetation to thrive³⁵. Above it begins another layer containing rocks, but reddish, not very frequent on the site³⁶. The lower part of the layer is made mostly of pebbles and reddish soil³⁷. At the top comes a layer of flat stones, suggesting a pavement running outside the wall, overlaid by the ruined upper wall; we then have to admit that the wall was at least half a metre taller than today (Fig. 20)³⁸.

On the opposite side of the protected stripe of grass, the palisade ditch was cleared, east of the archaeological trench, having the customary traits, a taller outer wall and a smaller inner wall (Fig. 21), although its width is smaller in comparison to what has been seen in Trench 1, only measuring around 60 cm. Note that the inner wall is absent in Trench 5, suggesting therefore that we are dealing with a gate of the stronghold, but also of the former quarry.

At the inner side we were expecting some stairs to overcome the difference of level of about 2 m. We found instead crowded stones, stuck to one another, a dense mixture, difficult to dismantle; it came up that proper stairs were not in place, but a stone made ramp, connecting the level of the palisade to the bottom of the former quarry. Given the fact that the main purpose was initially to pull out large stones, that was exactly the thing to do: a ramp made out of planks, supported by the stones below. Such a ramp could easily be later converted into a wooden stair, by fixing small boards from one edge to the other.

At the bottom of the inner space the situation seen in Trench 1 was repeated: absolutely no traces of living inside, no artefacts, nothing other than many stones rolled from all the directions. Not happy with such a (peculiar) situation, we have decided to extend the digging aside, towards 'room' 2, on the narrow way inside³⁹.

The only thing we got with this north-eastern extension of 2 m in length was a posthole dug in the bare rock, almost round, 40 to 45 cm wide, and almost 40 cm deep, obviously made with a purpose. Yet the purpose could be different. One hypothesis is connected to the large rock at the southeast, which has a height of almost 2 m above

³⁴ Of course, it would have been preferable to clear all those layers, in order to see the undisturbed bedrock, i.e. the shape of the terrain before the humane intervention. Unfortunately, time was ticking, our goals were many, and the trench was too narrow to perform that securely. Due to the crumbling rocks, the trench had to be done with slanted edges, to prevent accidents.

³⁵ Considering that the layer was strongly pressed by the ruin layer from above, the original organic layer should have been of at least 20 cm, perhaps more. The vegetation grown on the top of the outer wall is today about 25 cm thick.

³⁶ At the bottom of our trenches, the clay is rather pale yellow.

³⁷ A reddish soil is usual for the mountain areas formerly covered by woods (see, for instance, our diggings at Fundata, Teodor 2021, 387-388 with the Fig. 25). Although that side of the crest is now cleared, the area is strongly covered by woods and, very likely, so was it before the construction of the stronghold. Note that such reddish touches have not been seen inside the fortification, but that area was previously a quarry, not a forest.

³⁸ Such a hypothesis is strongly supported by the rocks rolled on the slope and gathered south of the stronghold (see below, Fig. 23).

³⁹ There was no other choice. We were digging in a hole (see again Fig. 18) and all the matter extracted had to be put aside somewhere; the only places where such a thing could be done were in sides, the narrow passing ways to the neighbouring 'rooms', the second at the east and the third at west. As the western exit was already locked by disrupted stones, an extended excavation was possible only towards the east.



Fig. 21. Photo taken in the Trench 5, heading east, along the entrance and the palisade ditch.

the corridor, therefore could be a sort of shelter, a roof supported on one side by posts, and the other laying directly on the rock; the geometry of the place is yet awkward, and the post would stand in the middle of the passage way. Another hypothesis is connected to the large rock which is dividing the 'rooms' 2 and 3. Why has it been left there, standing exactly in front of the gate, leaving only narrow strips of passage? Was it used as a support for pulleys? Even if the easiest way to push out the quarried stones was the ramp (using oxen in the process), transportation of the pieces from the extraction point to the exit way could have been eased by using pulleys, installed on the height of the cliff. Well, probably one of those variants... The cliff is brittle, with pieces of it being fallen on the ground, and one cannot know its real configuration centuries ago.

A last thing to say about the area would be about the inscriptions found on the right side of the cliff, facing the corridor towards the 'room' 2 (Fig. 22). On the upper part of the right panel of the cliff it is written NEOD? (and possible other readings), having letters about 4 cm tall⁴⁰, possibly followed by a C. The letters are superficially dug, with flat base of the line, as would have been used a chisel. About 25 cm lower one can (hardly) read something like UXI, but more likely IUXI, as suggested by a second inscription, with apparently the same word, on the left panel of the cliff⁴¹. Other scratches can be seen on the top of the left panel of the cliff, but they cannot be read. Take note that all the inscriptions are located higher than 1.8 m, up to 2.2 m, too high to reach without a ladder or other support. In the case our hypothesis 1, from the paragraph above, would be proven right, then a roof about 1.7 m high could be the necessary support for making those inscriptions.

Note that the inscriptions NEOD? And IUXI are not pairing themselves as for the type of chiselling. In the first case a tool with a flat tip was used; in the second case, a pointed tip, very narrow (as a nail), is more probable. They are old anyway, both of them. The clue in understanding that is the colour of the rock. Fresh extracted limestone (or a fresh scratch) is whitish (as in Fig. 21), even bright in a strong light; the limestones long time exposed in the air turns grey, as one can see in Figure 23. Looking now back on Fig. 22, one can see that our cliff is grey, as well

⁴⁰ We could not measure them, as they were located too high. Interestingly, the inscriptions were spotted not by the specialists present on the location, but by our brave volunteer Ovidiu Popescu, a 64 years old man wearing no glasses...

⁴¹ This second inscription (Fig. 23, IUXI 2) has been read, by one of us, as RUXI, which is laughable and suggesting that the inscription is close to our time. Comparing the two versions, one can see that in the first case (IUXI 1) the first letter is not R, but likely I).

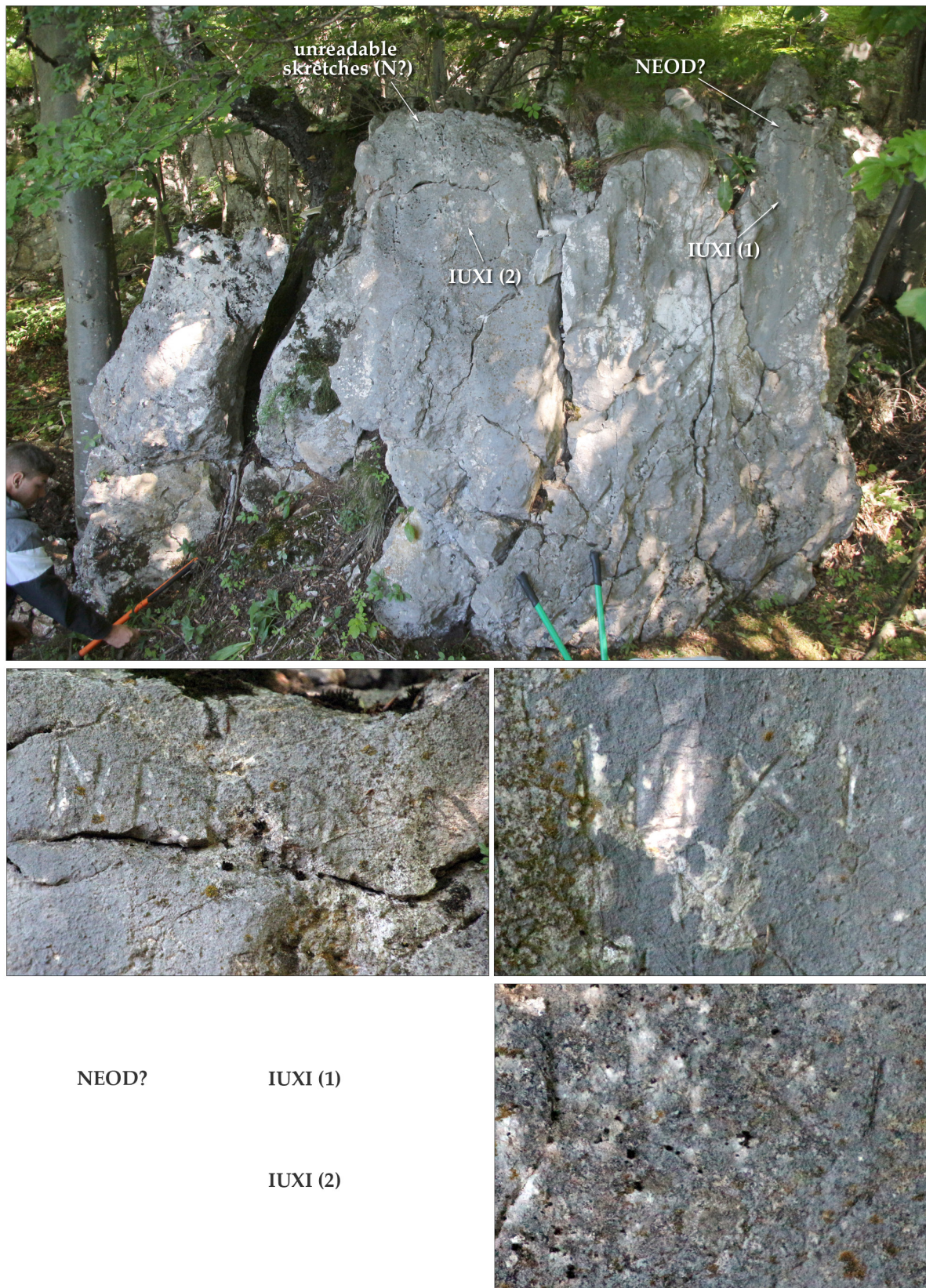


Fig. 22. Inscriptions on the rock, the eastern stronghold, the corridor between the entrance and the 'room'
2. Ensemble and details.



Fig. 23. The southern slope and clearance near the eastern stronghold, gathering stones rolled from the fortification. The slope has an average tilt of 29° (or 55.4%).

as most of the lines making up the letters. Below IUXI (1) one can see also two smaller X, whitish, as the scratches are very likely much younger⁴².

Our last trench on the eastern stronghold has been made against the large palisade located northeast of the main fortress, being referred to as Trench 3 (see again the Fig. 11 for location). It was supposed to check the massive

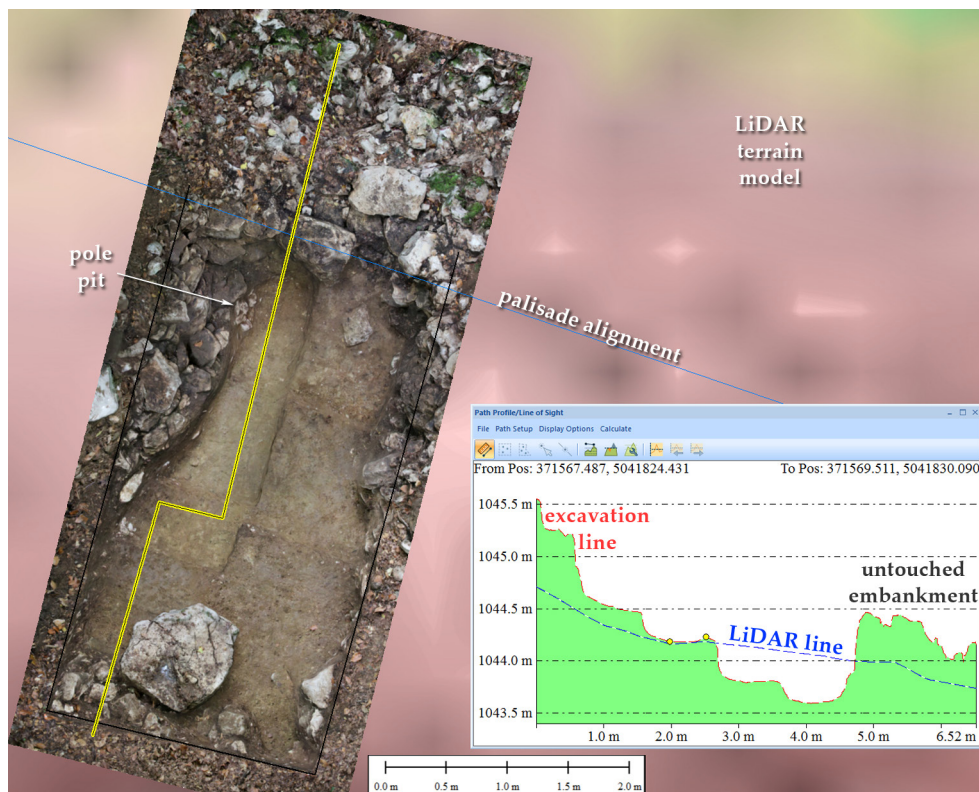


Fig. 24. Eastern stronghold, northern palisade, Trench 3, orthophoto heading north, resolution 1 mm; altimetric section (yellow line) on photogrammetric terrain-model, resolution 3 mm. Projection UTM 34.

⁴² 'Older' or 'younger' does not imply a proposed chronology, but rather a relative situation.

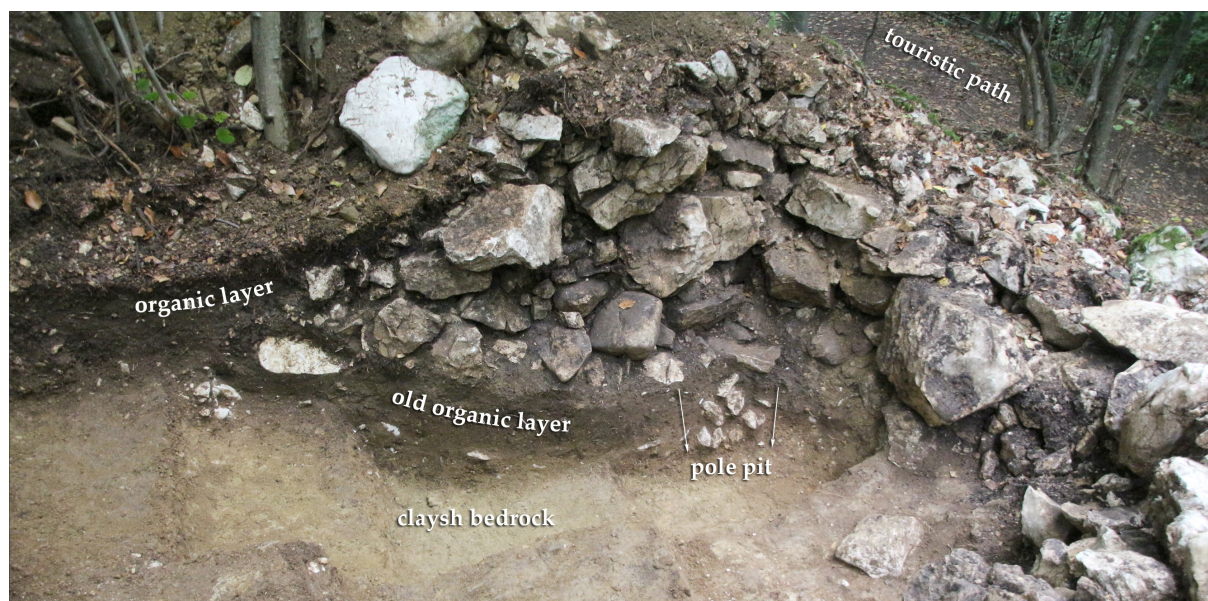


Fig. 25. Eastern stronghold, northern palisade, Trench 3, photo against the western section.

appearance of the embankment north of the main fort. The trench was dug on a width of 2.25 m and a length of 4.3 m, heading almost north, cutting only the upper part of the rampart (Figure 24), because the place is very close to a touristic path, further north, and the terrain in between is very slanted (33°)⁴³. The palisade has been made along a level contour, crossing a natural slope of 22° (or 40%). The terrain on which it has been built has a thick organic layer, the stones being laid down directly on it (Figure 25). Below it lies the geologic support – clayish bedrock, pale yellow, containing relatively small and few stones. Obviously, the large stones used to erect the embankment were brought from the limestone cliff situated above, at less than 15 m. In the middle of the palisade's alignment there is a hole 40 cm large and 48 cm deep, where the pole was placed, secured with large rocks (up to 65 cm in diameter and weighing over 100 kg), making up a pile 1.4 m high and about 4 m wide (or more). After the wooden pole had rotten, its place has been taken by several smaller rocks, probably initially used to fix the pole into the hole.

Some comments should be made about this palisade: first of all, this is more massive than all others on the site (for instance, the palisades of the western complex); it is placed in individual holes, not in a ditch (as in the upper stronghold), therefore it could have a slightly different chronology; it is obviously different from the dry wall located on the southwest part of the main stronghold, although the main purpose is the same (protecting the main fort), suggesting layers of added defences, which is in a prominent contrast with the lack of artefacts (Trench 3 included); except for the limestone cliff nearby, the bedrock is made out mainly of pale yellow clay.

Excavations of the central stronghold

The so-called central fortification is located about 100 m west of the eastern one. It has a sub-rectangular shape, and is made of two rows of defences, an inner one (30 x 8 m) and an outer one, (about 53 m x 21 m), oriented west-northwest to east-southeast. The inner space is split into three sections by walls one or two metres higher than the ground around⁴⁴, with a circulation path left on the northern side. The southern side of the inner space is standing on the ridge of the mountain, on a tilted terrain of an average slope of 7.7° , slanting towards the east (Figure 26). The inner and the outer defences are separated by a ditch 5.5 - 5.9 m wide and a depth varying from 0.6 m towards the exterior to 1.6 m towards the interior⁴⁵. The 'southern' defensive ditch is doubling the 'northern' one for several metres, at the north-eastern corner, but this would hardly be a gate; it is rather a drain for the rain water, driving it to the northern slope. The gate is located north, where a 3 m gap is driving to the aforementioned path on the inner fortification. The southwestern outer defences are joining the outer defences of the neighboured

⁴³ The embankment is made from very large stones and we were afraid that dismantling it could be dangerous for the passing mountaineers.

⁴⁴ Depending where measured, due to the slanted terrain. Measured from west, they are about 1 m higher, but measured from east that figure could be doubled.

⁴⁵ Figures taken on the LiDAR surface. For the figures taken in the excavation – see below.

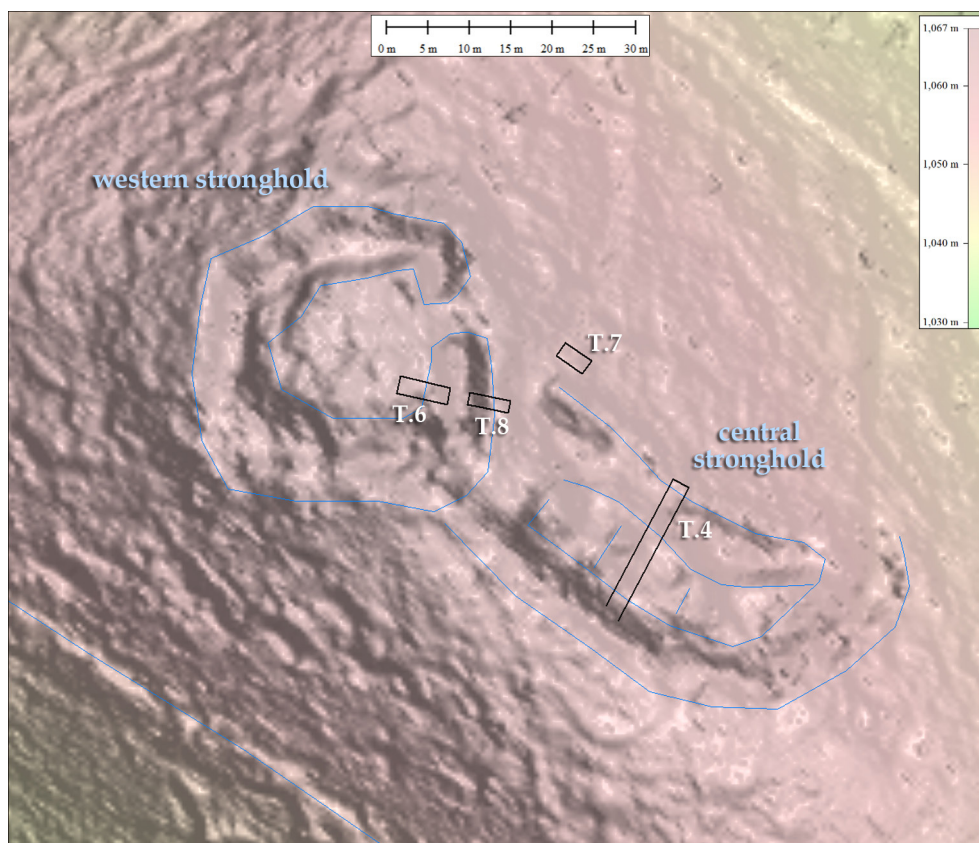


Fig. 26. Archaeological trenches on the central and western strongholds.

stronghold, the western one. As the top altitude of the western stronghold is about one metre above the central fortification, the latter could not function alone, for instance if the western fort would be deserted. This is why this is not ‘a stronghold’, but a complex of fortifications, constructed at about the same time, only working together.

Test diggings have been made on the central fortification only in the second part of the first campaign (Sept. 2021). Our intention was to make a trench crossing the width, from one edge to another, but this proved impossible, due to the dense fir tree forest. The best alignment found was departing from the northern outer defence, crossing the northern ditch and the inner space of the inner court, but stopping on a very large trunk in south-southwest. At the time this trench became T.4 and a short description follows. T.4 measures 15 m in length and 2 m in width.

The north-western rampart is made almost fully from matters extracted from the proxy ditch, a mix of silty soil and small stones (ranging from 2 to 5 cm). At the place where the fortification crosses the natural curve of the terrain a hole has been made, 35 cm in diameter, for a palisade pole (Figure 27). From the palisade axis to the dry wall towards the defensive ditch there are 2.4 m. In the southern half of this gap a layer with plenty marks of rotten wood has been located, where a wooden nail used to fix the planks of a decking was discovered. The northern part of this gap has been filled with a rampart aiming to fix the palisade. The stratigraphy of the western section of Trench 4 yet poses some puzzling problems, as the rampart looks like it would have been erected even higher, using a pale-yellow clay, usually associated with the bedrock, in many parts of the site⁴⁶. The same soil is to be found at the bottom of the ditch.

The ditch has a U shape, with the lower base 1.6 m wide, suggesting a fortification made in the late antiquity or later⁴⁷. The side towards the palisade is walled up, with dry masonry made of limestone from the aforementioned quarry. The wall is 0.87 m wide, made of three rows of stones, elevated up to the level of the planks of the guard round. The wall has probably been made in order to prevent erosion or landslides.

⁴⁶ It is therefore possible that the palisade could be taller than in our reconstruction in Fig. 27.

⁴⁷ U-shaped ditches are a complicated issue. One can find such a ditch on the rear line of defence, on Hadrian's Wall (for instance Napoli 1997, 154-159), but due to the general chronology (second to fifth century) it is not obvious when that shape was given. The situation is far simpler for Roman Dacia, for which about 200 Roman forts are known, none later than the mid of the third century, for which such a ditch shape is not known. One of the earlier U-shape ditches is recorded on the defended line around Galați (Napoli 1997, 81, 105, 359-361), made in the fourth century.

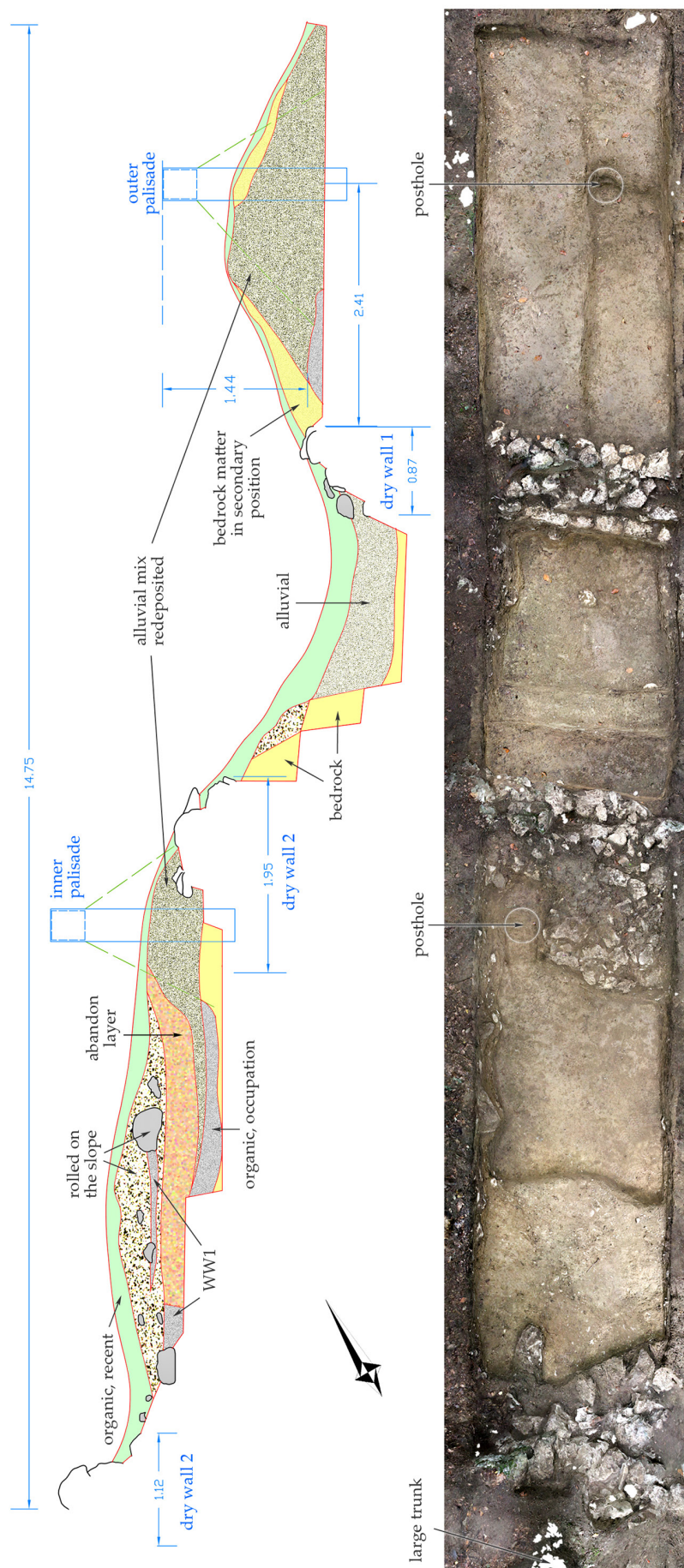


Fig. 27. Central fortification, Trench 4. Drawing of the north-western section, with restitution of the main building items; orthophoto of the same, resolution 1 mm.

The inner side of the ditch is 1.7 m high, cut into the bare soil, with a steep angle (59°), suggesting, again, later military practices. On top of this earthen edge of the ditch there is another dry wall, adding another 0.58 m of height to the ditch, which thus amounts to a sum of 2.28 m. The face of this dry wall towards the ditch is straight, aligned and good looking; its width is almost 2 m, but near the western section there is a large part missing, around a posthole of the inner palisade⁴⁸.

South of the inner wall (named dry wall 2 in Fig. 27) lies the only occupation layer, organic, unfortunately almost completely void of artefacts! It is quite likely that a wooden decking serving for circulation existed here, as we found small chunks of wood⁴⁹, but also two small and much corroded iron nail heads. This layer is partly covered by slid matter from the rampart, slipped over in time. A proper abandonment layer lies on top, a soil of slightly reddish tint, a typical forestry hint. The last deposit, which is the thickest, is the more recent, and seems due to the ruin of the old wall splitting the eastern and the central spaces of the fortress; it contains lots of

⁴⁸ It is not clear at all why the missing part of the wall is far larger than the hole.

⁴⁹ A small carbonized piece of wood, weighting only 0.7 g, has been collected there, and then it followed the C14 procedure.

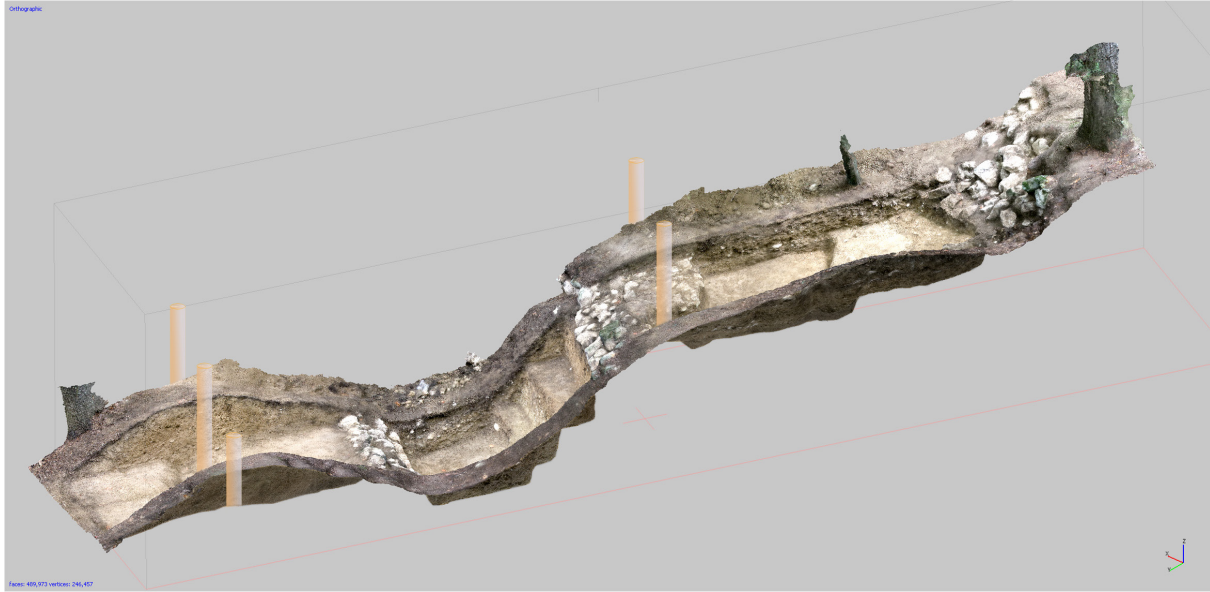


Fig. 28. Central stronghold, Trench 4, point cloud, orthographic mode, perspective view from northwest. Poles of the palisade added.

stones, some of which are relatively large, but also devices of the First World War, mostly barb wire and a shard of modern pottery.

At the southern end of the Trench 4 there is a large fir tree, which not only prevented us from digging there, but whose large roots have strongly deformed the wall closing the central area of the fort; we cannot speculate anything about the properties of this construction, although it seems similar to the others, as can be seen in Figure 28. On the same image we have added the positions of the palisade posts, and the most likely alignments. Interestingly, the inner row of the palisade is not only in a close support of the outer palisade, but also in a higher position, therefore the defenders could see over the front line, being able to spot the enemy. A probably more accurate estimation of this capability is rendered on an altimetric section over the terrain model, as depicted in Figure 29. The troops guarding the inner palisade are able to see over the advanced palisade; they wouldn't see the grass on which the attackers are stepping, but they could see the attackers themselves. More, a third line (that located on the top position) could also be useful against an enemy coming on the northern slope, as a distance of 30 m is quite small for an archer, or even for throwing spears. The southern side of the mountain would be more problematic. As we shall see, they were expecting an enemy mainly from the northern side.

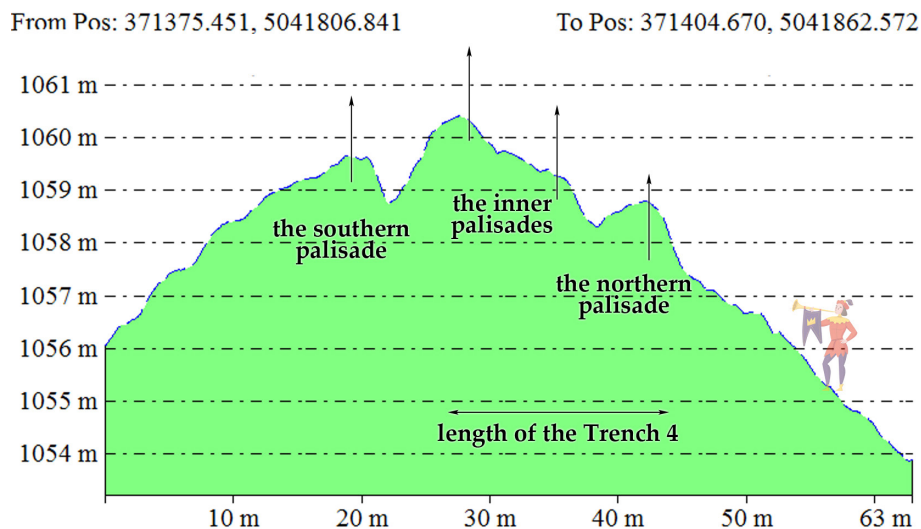


Fig. 29. Central stronghold, altimetric section along the Trench 4, LiDAR data, resolution 0.5 m. Projection UTM 34. Study of the visibility.

The second LiDAR file

It turned out that our LiDAR file, usually detailed and very useful, had some drawbacks in this dense forest. This is why we have started looking for a solution. Planned initially for March 2022, our move was delayed due to a cold spring, with snowfalls till late April, and was made only in mid May. The tool was a handheld LiDAR device⁵⁰ and any trace of snow could cause problems. When our mission in field became possible, leaves were back on the branches and we were met – again – with another trouble: difficulties in acquiring valid RTK data. The final result of this situation was the impossibility to get a georeferenced model. But the terrain model has been obtained⁵¹ and proved valuable, clarifying some previously only supposed facts.

On the eastern stronghold there are not many news (Figure 30). The northern palisade stops at the middle of the defended cliff, but this was already known. The dry wall at southwest is located where we have seen it, but has a slightly different orientation. At the opposite side of the stronghold there is a new mark, possibly another palisade, closing the entire eastern slope⁵². Another interesting fact is the absence of the inner wall near the separation between rooms 1 and 2, a fact to be verified by future research. A situation completely new, never observed due to the dense bushes, is the absence of the inner wall at the western end, in front of room 4.

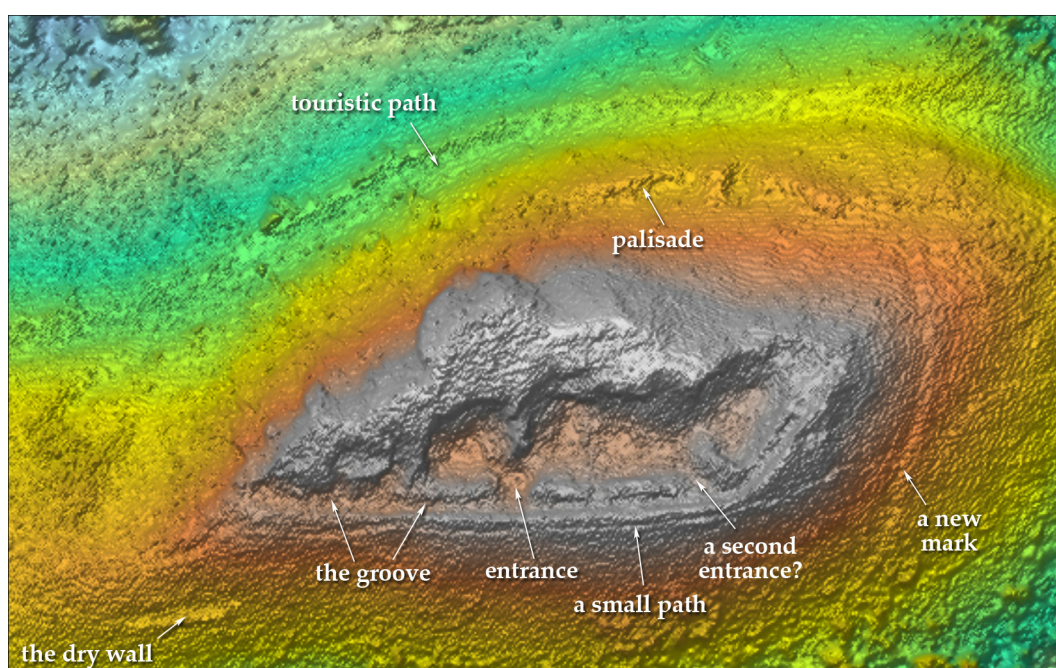


Fig. 30. The second LiDAR file, resolution 25 cm, on the eastern stronghold.

Far more interesting things are to be seen on the western military complex (Figure 31). In the middle of the central fortification one can see Trench 4, left open from the previous campaign⁵³. The two walls splitting the central fortification are well visible. The ditch is running from the east, circumventing south and heading west-northwest, up to the ditch of the western stronghold, acting as a draining ditch⁵⁴.

The most interesting observation is that the western stronghold is not round at all, all the sides being straight. Nevertheless, there is only one simple right angle, at the north-eastern corner. Both southern corners are made up of three right angles, and the north-western corner is the most complex, being made of five right angles. The military aim of such complicated corners is not certain, but it clearly proves an evolved military architecture.

⁵⁰ GeosSLAM ZEB Horizon, bought for a drone, but usable by hand if necessary, and so it was, as no secure flight route could be planned, due both to the rough terrain and the tall fir trees. The resolution of the terrain-models from the Figs. 30-31 is around 25 cm.

⁵¹ Technical details of the operation will be properly published in a separate paper, as the amount of information is too large to fit here.

⁵² Unfortunately, we did not find the time to check it during the next campaign. Another possibility is to be an old path, not used anymore and not visible today.

⁵³ This is the only trench in such a situation, due to the lack of time. All other trenches have been refilled at least for half, in order to preserve for main traits.

⁵⁴ This observation brings yet another question: how was the northern ditch of the central stronghold drained?

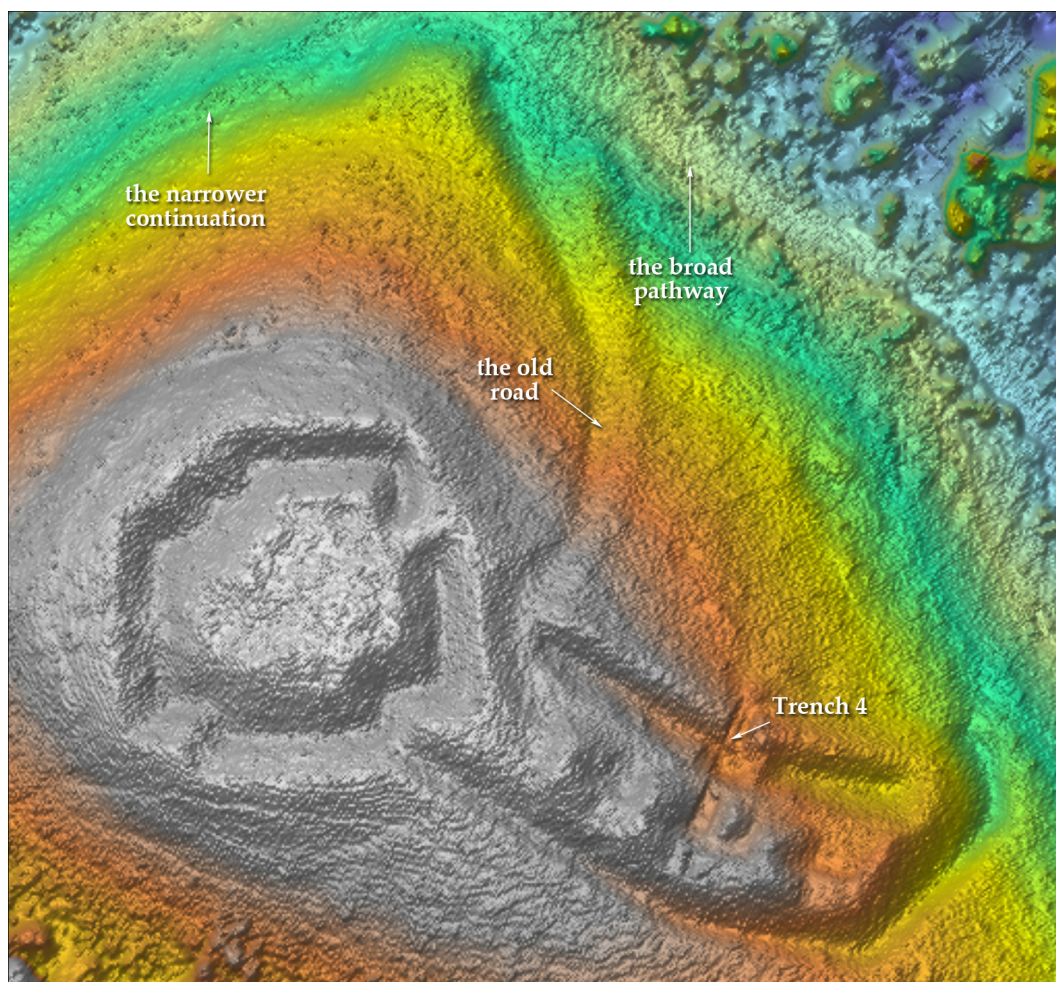


Fig. 31. The second LiDAR file, resolution 25 cm, on the western complex of fortifications.

Another certain fact is that the central plateau looks levelled up, the natural shape being obviously modified. The discovery of the – now – obvious road approaching the gate of the central stronghold was also very useful. It emphasises the fact that the access route was coming from the north and better explains the fort's opening. Another useful observation is regarding the touristic path located north of the strongholds. It is wide east of the road driving to the fortress, but much narrower west of this point. Obviously, the broad part is a former road made in connection with the strongholds⁵⁵. These were the new data at hand when the second campaign began.

Diggings on the western stronghold

In a diagnostic digging, with a tight schedule, all we could try was to intersect both defences of the western fort, with one cut. That would mean a 15 m long trench, more than possible in the given time. We made a first stretch at the western end, naming it Trench 6 (see again Fig. 26 for location), 6.3 m long and 2 m wide, from the platform in the middle towards the bottom of the ditch. The excavation was far more difficult and slower than anticipated.

In brief, the western part of the trench has been taken by a hut made during the First World War. Its profile is descending to almost 1 m deep and does not contain interesting artefacts; we may yet mention lots of wires, a couple of middle sizes nails, and some thin window shards. The eastern side of the hut is marked by two beams crossing the trench (Figure 32), one marking the edge of the floor, the other – the first elevation element along the wall. Although the floor was probably decked, no traces of the boards were preserved.

The middle of the trench is located at the edge of the platform making the inner side of the western stronghold (Figure 33). From surface to bottom, the undisturbed stratigraphy is made from an organic layer, an abandon

⁵⁵ Yet made by whom? By the Habsburg army, for their guard post? Or it is older?



Fig. 32. Western stronghold, Trench 6, photo against the northern section. White-red stake at 1 m.

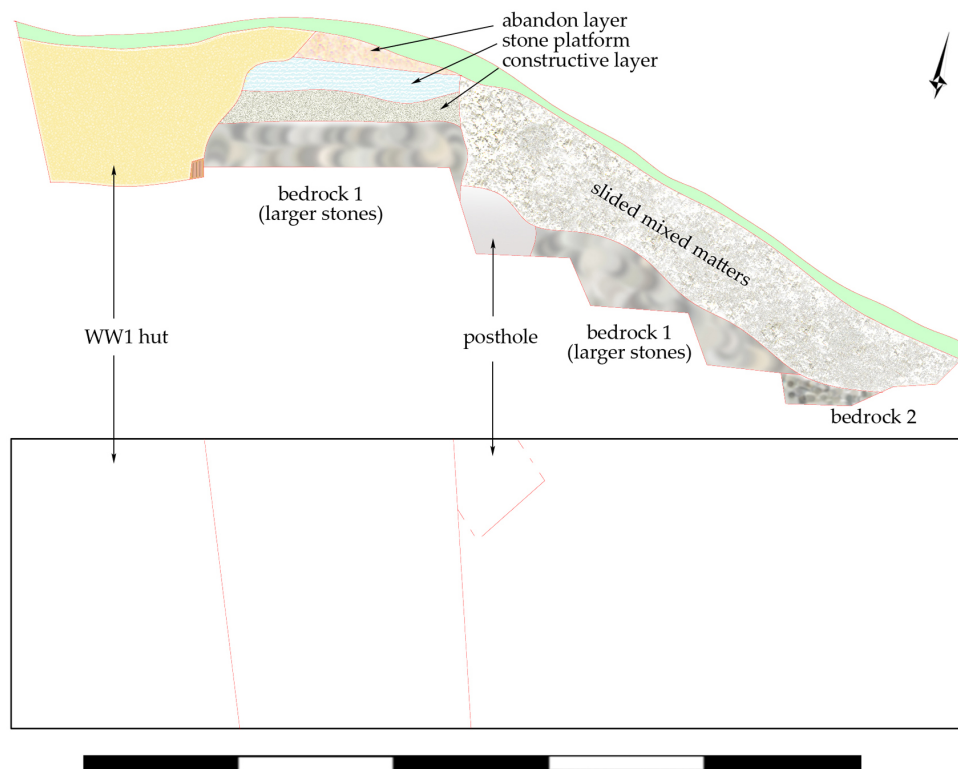


Fig. 33. Western stronghold, Trench 6, drawings and interpretation.

layer, a stone platform (very likely the fighting platform), a levelling layer made by matters extracted from the defensive ditch, and finally a second stone platform layer, this time a natural one⁵⁶.

Bellow the edge of the platform there is a large pit, very likely for embedding a palisade post. What is odd about this pit is its straight edge – the only one seen on the site – and that the edge is not aligned to the palisade (Figure 34). The slope towards the bottom of the ditch has been fully dug, to the stone bedrock, showing no old organic level. What is changing to the bedrock, going down, is not the composition, but the average size of the rocks, decreasing on lower levels, with only small rocks remaining on the bottom, although the layer is still very tough. All the construction material is local, very similar to the bedrock, meaning river stones, with rounded shapes.



Fig. 34. Western stronghold, Trench 6, detail with the palisade pole marks on the ground, near the northern section.

Between the organic layer and the bedrock, in the eastern half of Trench 6, there is a thick layer of rolled matters. What would those be? Difficult question. Some of them could be there due to the activities during the First World War, as some wires were found here too. Yet the most part of this layer must be the ruin of the palisade, very likely a massive one, having a supporting embankment to the outside (not preserved). If so, the original slope of the ditch had to be steeper than today, and the bottom of the ditch closer to a U shape.

Trench 8 has been made a few days later, following the direction of the northern side of Trench 6, cutting through the tip of the outer defences of the western stronghold (see again Fig. 26 for location). The highest part of the circuit is made up of pebbles, a construction material usually employed to make an alley over a bumpy surface. As a consequence, we were expecting the line of the palisade to be about one metre east of the tip of the embankment (Figure 35, noted ‘?’). Digging the place, we have found huge stones along the northern section, one of them weighing at least two tons. A good place to fix a palisade pole would be here, between the large rocks, but no trace of wood has been found there. Traces of wood popped up one meter below. An unusual, triangular tip of a pole has been found near the northern section, kept in place by a board half buried into the antique soil (Figure 36), along the level line. Immediately below, towards east, a group of stones could have been part of a dry wall, not very well preserved. West of the palisade’s pole we also found marks of wood turned into tiny bits of charcoal, on a surface, suggesting a decayed decking.

An important hint is given by the southern section of the trench, because one can see there the shape of the antique soil, still preserving an organic tint for almost the entire stretch. This means that these huge stones are not on their original location, but brought on from another place, in order to complete the large embankment.

Those two trenches, 6 and 8, deserve some comments here. First of all, note that the geological support is shifting, from a compact layer of stones at the maximum altitude to a softer soil towards lower altitudes and towards the east (where, in Trench 4, one finds almost only clay). A second conclusion is that for building the stronghold, with its two rows of defences, exclusively local stones were used, from the generic class of river stones, with rounded shapes. The third comment is connected to the functionality of this double palisade. Looking at the terrain altimetric profile from Figure 37 one can see at two facts; firstly, the way in which the builders used the natural shape of the mountain to get a double precinct by making a single ditch; secondly, the poor line of sight from the back position, which would yet be true only in the hypothesis of a simple palisade, with a height of 1.5 m above the ground. And this is not an accident, in this point, along trenches 6 and 8; anywhere around where we put this version of reconstruction to the test, the result was the same: one cannot see from the inner palisade the ground in the front of the second palisade. This cannot be true! One has to admit that the inner palisade was taller, having the

⁵⁶ It took us some time to understand that this second stone platform was not a built one, the surface being incredibly hard.

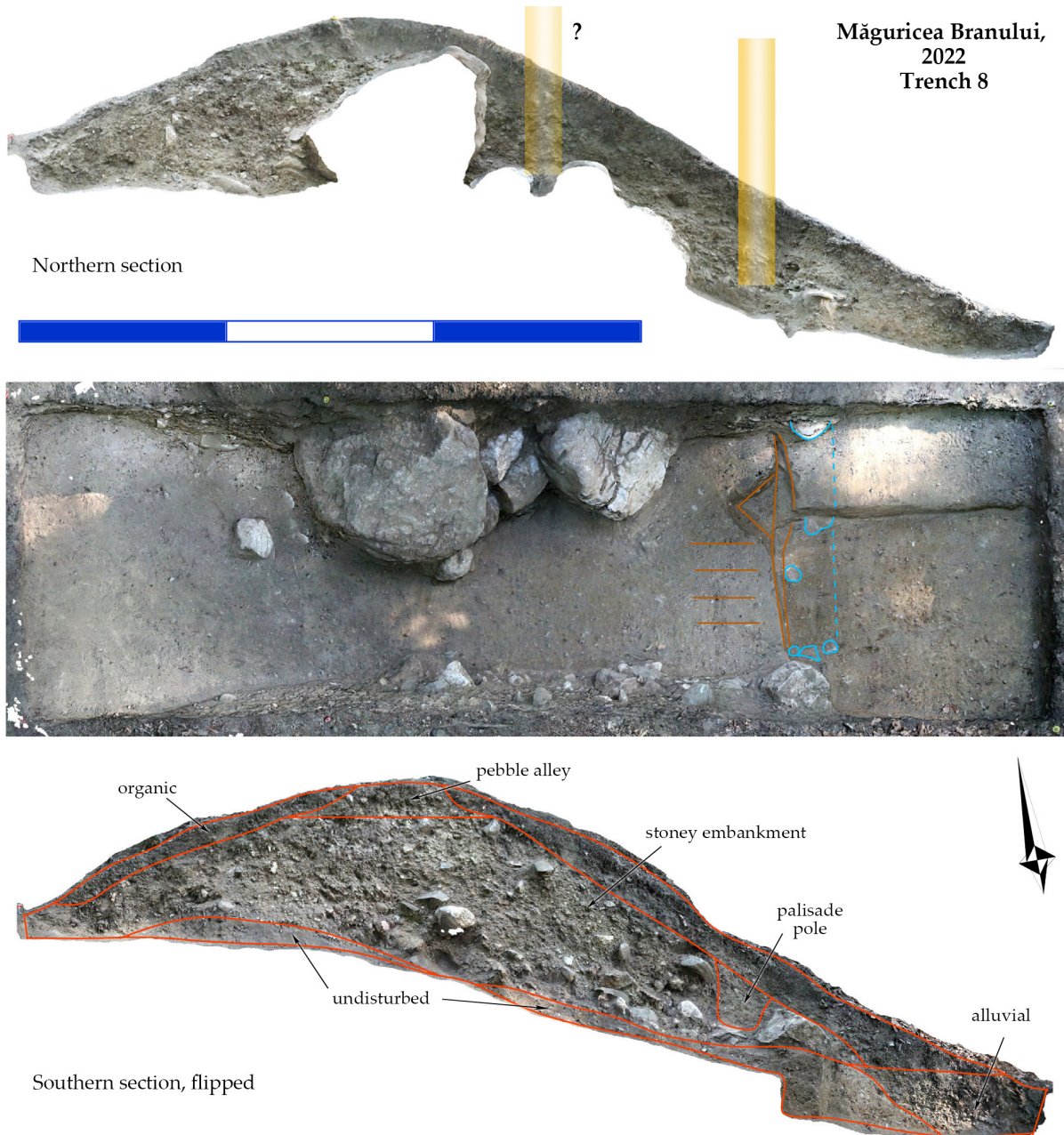


Fig. 35. Western stronghold, Trench 8, orthophotos, vertical view and sections.

line of sight at 2.5 m above the ground, or higher, in order to see the ground next to the outer palisade. Of course, that means larger posts, able to support the weight of the suspended ring road. Such a hypothesis better explains the stratigraphy of Trench 6, with a deep and large posthole.

Connected to the things above, there is another detail worth mentioning: the quarry limestone, used exclusively on the central stronghold, seems to be completely missing on the trenches made across the western fortification; it is yet not missing at all. At the northern corner of the western fort, at half the height of the ditch and on the both sides of it, a couple of dozens of quarry limestones, of usual sizes (20 to 40 cm, see Figure 38) have been found. Without an excavation one cannot establish their precise function, but they very likely are documenting a second phase of the fortification, made at the same time with the central stronghold or later, possibly a tower, as the northern corner of the fortification stands exactly above the road driving to both strongholds. We will now concentrate on this road.

The road driving to the western complex

If looking back on Fig. 31, one would see 'the old road', connecting the broad pathway and the gates to both central and western strongholds. As the road becomes so obvious in the second LiDAR file, we have paid more attention

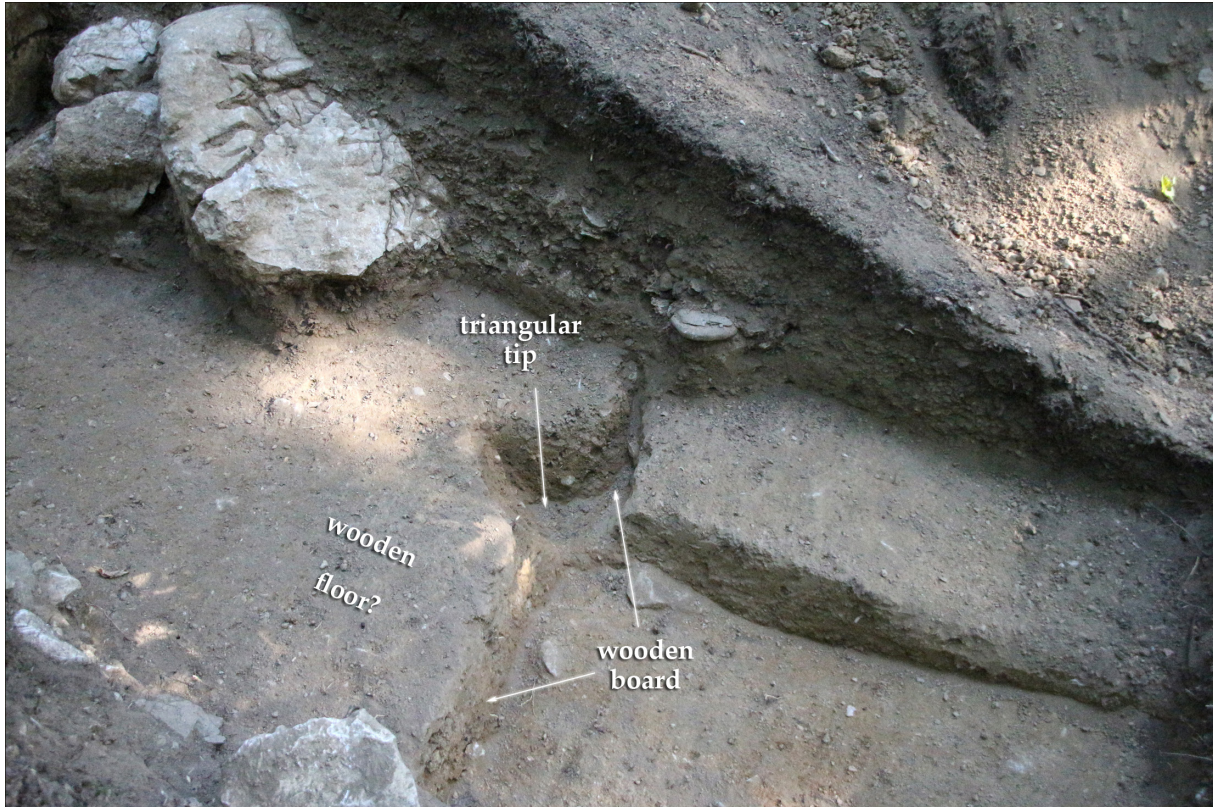


Fig. 36. Western stronghold, Trench 8, photo against the northern profile, detail from the lower part.

to the landscape, either going to dig on the western fort, or descending back to the tent camp. The road is not only clear, but an embankment east of it could also be seen, small, but present for almost all the length.

Our path from the camp to the western fort was driving below the northern embankment of the central stronghold; near the end of the embankment, about 4 m to the north, we have seen two fragments of typical quarry limestones, partially buried. At that spot we made a small test trench, T.7 (see Fig. 26 for the exact location), measuring 3.8 x 1.95 m.

The two parts of that trench are uneven, the interesting one being the south-western (upper) side. The geologic support is clayish, with small pebbles (Figure 39), similar to things seen in Trench 4, on the central stronghold. The embankment is small (about 0.4 m in height), but clear if looking at its stratigraphy. It obviously has two phases of construction: a palisade (with one posthole visible) and a small embankment added around (see the left-down side on Fig. 39); a second phase, which has brought several changes. The place behind the palisade (central and right part of the illustration) has been refurbished, dug below the level of the natural soil, and filled with a

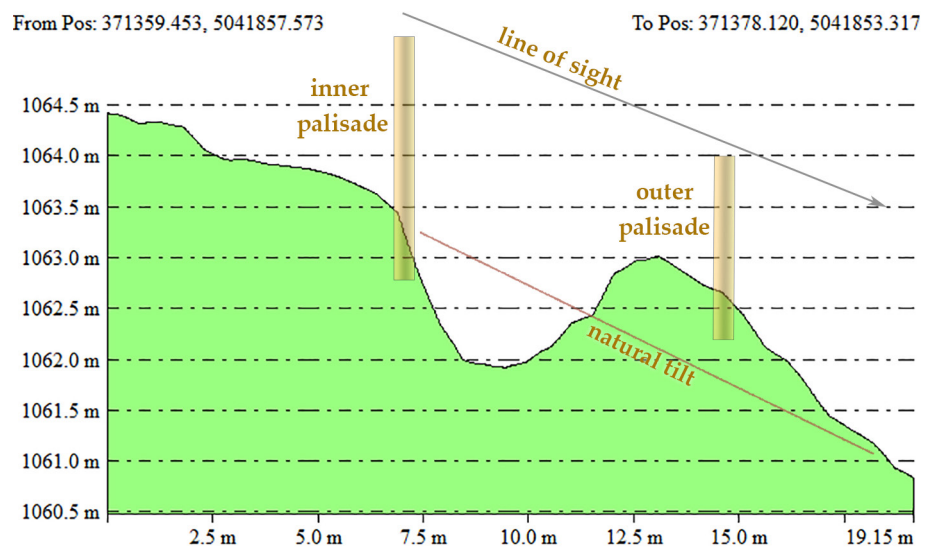


Fig. 37. Western stronghold, altimetric section of the terrain along the Trenches 6 and 8. LiDAR file, projection UTM 34. Study of visibility.



Fig. 38. Western stronghold, photo taken at the north-eastern corner, in the defensive ditch.

The only obvious artefacts associated with the construction activities were found in Trench 4, at the outer palisade or close. The ‘collection’ is made up of two nails (one of them is depicted in Figure 41/c; the other one is similar, but less preserved); a third nail, a small one, conserving only the head, has been found on the same trench, in the

stony composition. One of the stones from this new filling is a quarry limestone, making this phase as contemporary with the building of the central stronghold. Additionally, in the area of the palisade pole several limestones were added as reinforcement.

Our excavation makes it clear that the road has been protected against visitors from east. It was firstly done when the western stronghold had been built, and remade when the central stronghold was under construction.

As already said, the opposite side of the trench is very different: the embankment is almost absent (Figure 40); apparently, we found there an entrance. Looking at the shape of the land, the palisade was descending all the way down, about 65 m to the north, up to the intersection with the broad path. In that area, on the opposite side of the path (north of it) there is a group of large stones, possibly part of another small defensive construction (a tower?).

Archaeological inventory

The artefacts collected during the diggings are amazingly poor. It wouldn't be improper to say that they are missing. Not only that the defenders – if any – did not leave any of their arms or equipment behind, but the builders were also very discreet. One would expect at least some broken pots, but there are none; the only piece of pottery is a modern pot's bottom, to be associated with the dispatched troops from the First World War⁵⁷.

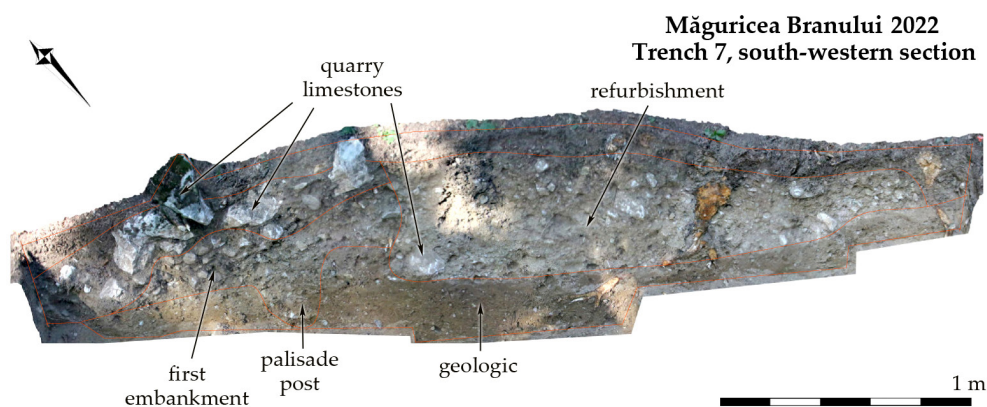


Fig. 39. Western fortification complex, the palisade near the gate. Trench 7, south-western profile, orthophoto.

⁵⁷ Found in Trench 4, in the area of the central fortification, relatively high up (-15 cm), in a layer associated with barb wire.



Fig. 40. Western fortification complex, the palisade near the gate. Trench 7, photo taken against the north-eastern profile.



Fig. 41. Artefacts from digging: a) mirror shards, T.1, palisade's ditch; b) scrap metal, copper based alloy, T.1, northern side; c) iron nail from T.4, at the outer palisade; d) wooden nail, as c; e) unidentified iron device with a rivet, together with c); f) tree bark from T.4, the ditch of the palisade. All at the scale 1:1.

area of the inner fortification, stratigraphically associated with the construction phase. We are pretty sure that we did not miss much, because the problem of the scarcity of archaeological inventory had already been clear to us one year before the first excavation, therefore the surface explorations and dig have been systematically assisted by a metal detecting device⁵⁸.

The builders have obviously used wooden nails for completing their job, a deduction also supported by an actual find (Fig. 41/d), in the same area of T.4, between the dry wall 1 (as noted at the Fig. 27) and the outer palisade, where a wooden walk was made. The use of wooden nails is not that rare, both in vernacular architecture and in military architecture, including Roman fortifications in locations with difficult supply⁵⁹.

A small piece of iron, having a flat end and a rivet (Fig. 41/e), has been found in Trench 4, in the area where a wooden board was set, near the inner palisade. Another inventory item has been collected from the same area, a tree bark (Fig. 41/f), its function within the palisade setup being unclear.

The list of findings is completed by two artefacts lost after the strongholds were deserted. Mirror sherds popped up from the digging in Trench 1, found in the palisade ditch (Fig. 41/a). The type of mirror is a modern one, using flat transparent glass and metallic shifts on the back. It could be Venetian, but its earliest date is the 16th century⁶⁰. How could such a precious object reach the peak of the mountain, a couple centuries after the stronghold was deserted, is hard to say.

Another interesting – but puzzling – artefact is made of a copper alloy⁶¹, having a length of 27.7 mm (Figure 41/b), with a sheet wrapped around the core (both apparently made of the same sort of metal). The only thing which came to mind is a lock bolt, but it would have a circular section. The piece is broken at one end and cut at the other, and could be a scrap metal used for repairing bronze made objects; as scrap metal, it could be from any other place, and not necessarily from the fort. It was found at the north-western end of Trench 1, in the inner yard of the stronghold, and it could have any date, as no obvious context is present (other artefacts or a well-defined layer).

Modern artefacts

Relatively recent objects were found in much greater numbers, mainly by metal detecting. They fall in both military and civilian domains. The oldest piece of evidence is a musket ball, found on the slopes north of the western stronghold, possibly to be related to the Habsburg's frontier guards, before 1842. Yet most of the discoveries date back to First World War activities (fall of 1916) and are suggesting that the hill was taken by a subunit of the Romanian army. Some 29 6.5x53R cartridges type Mannlicher M93 (used by Romanians) were found in the area, but also a full, unused en-bloc clip of cartridges for the same type (found on the central fortification, within the eastern 'room', see Figure 42/d). For comparison terms, we found in the same area 3 German cartridges (7.92 x 57 mm, all grouped west-northwest of the western stronghold), another deformed one, and two rounds for the same gun, as well as a Werndl cartridge made in 1879, most likely unrelated to the war. Other artefacts possibly related to the war would be fragments from two picks, shirt metal buttons (as that in Fig. 42/i), and fragments of tinned food. As for artefacts with no obvious user one can count 18 shrapnel balls, located mainly northwest of the western stronghold.

Judging these discoveries against the investigated surface – about 6 hectares – the military presence in the area was rather thin. The position on the top of the hill has been under Romanian military occupation for just a few days, corresponding with the general withdrawal from Transylvania towards the peaks of the mountains (early October 1916). That was a transitional phase, one of the steps backwards. Finally, German infantry made its appearance on the crest. Due to the numbers involved, it would be difficult to speak about a 'battle'⁶².

Such a modest deployment does not explain the road connecting Predeluț village to the crest. It was probably made by Austrians in the 18th century, in order to serve the frontier guards.

Surprisingly, the most frequent type of object found is wire, of different diameters, mainly 1.6 and 2.4 mm. They are always twisted and hooked, two by two (as in the Fig. 42/b and c), and were found both in digging (especially

⁵⁸ The finds from metal detecting are presented further on.

⁵⁹ Teodor and Dumitrașcu 2019, 116. The problem with the wooden nails within Romanian archaeology is that in the climate and soil conditions in Romania such artefacts are rarely preserved, except in such cold and wet environments as it is the case here. Yet, we only found one piece, and they have been probably used in the hundreds.

⁶⁰ Davidson 2003, 31, 62.

⁶¹ Possibly containing a large ratio of lead, as it is surprisingly heavy.

⁶² Our previous experiences with battlefields of the First World War showed that on spots where battles unfolded one can find up to 10 cartridges per square metre (as in Lerești, see Teodor and Bolba 2022, 413-414 with the Fig. 19).



Fig. 42. Modern artefacts: a) construction clamp; b-c) twisted wire; d) en-bloc clip of cartridges for Mannlicher M93; e-f) industrial nails; g) unused cartridge for Mannlicher M93; h) handmade nail for splinters; i) shirt metal button; j) Romanian coin, 1924; k) small hunting cartridge; l) Brenneke hunting bullet (for wild boars, after WW2); m) candle support; n) used cartridge for Mannlicher M93.

in the military hut from Trench 6) and outside, many in the middle platform of the western stronghold⁶³. They were probably used to keep the wooden boards together, for some improvised shelters, as suggested by the discovery of several pieces along a large clamp⁶⁴ (Fig. 42/a), about 5 metres west of Trench 6. The reason why the Romanian militaries used wires instead of construction nails is not clear; the nails are not absent on the site (see Fig. 42/e and f), but they are certainly far fewer; possibly a shortage of industrial nails⁶⁵. Speaking of nails, we also found a

⁶³ The place is so infested that metal detection is of no use. This is pretty bad, as in the dense forest this is almost the only method available for prospection.

⁶⁴ Such large clamps were previously found associated to military bivouacs (especially where Germans made a camp), information provided by Daniel Apostol. Obviously, this time it was a Romanian camp.

⁶⁵ Hypothesis substantiated by the fact that on the same place (the military hut) we found at least 8 wooden nails.

small one, typically used for splinter roofs, handmade, with rectangular section (Fig. 42/h), but the evidence is too poor for inferring such a roof⁶⁶.

Another artefact possibly connected to the First World War is a candle support (Fig. 42/m).

The battle around Bran, in early October 1916, was the last military confrontation in the area⁶⁷, but we also found later military devices, very likely related to military exercises. Such artefacts would be the tail with fins of a mortar bomb, 60 mm, model 1942, found on the eastern side of the central fortification, and 7 transportation caps (3 copper, 4 iron) for the same ammunition. A cartridge for a blind bullet for AKM, 7.62 x 39 mm, production 1965, falls into the same category.

Many of the artefacts are certainly related to civilian activities on the mountain, which is not a surprise given the small distances to villages located both northward and southward. Such would be a Romanian coin from 1924, with the value of 1 leu (Romanian coinage, Fig. 42/j), and several small change coins following the Second World War, mainly on the eastern stronghold⁶⁸. A small cartridge for hunting (Fig. 42/k), three broken axes, two different halves of oxen shoes, a large iron chain, most likely used to drag cut trees with oxen, and several other small discoveries such as a small anvil (?), or a few old beer caps (one made in Braşov, Czell brand) would fall into the same category.

Chronology

There are no artefacts which could provide a relative date for our discovery. As for criteria related to the general morphology of the fortifications, they did not say much, at least at the beginning. At first glance (2020), the western fort was like a 'prehistoric stronghold', being more or less round, with only one entry, relatively small but with a huge embankment. The second LiDAR file yet showed some strange right angles (three to five) articulating any two sides, suggesting a much more elaborate plan (see again Fig. 31). The so-called 'central fortification', laying adjacently, is amazingly different, rectangular in plan, but with the same huge defensive ditches. From digging (T.4, 2021) we have learned several things: the builders have used iron nails (along with wooden ones); the shape of the ditch is resembling the U type, which have to date from Late Antiquity or later. The stone walls erected on the both sides of the ditch are also playing in support of such a conclusion. The fact that they are dry walls is meaningless, because on the crest there is no water, therefore making mortar is impossible.

Looking now at the eastern stronghold – it is the weirdest of all. Most of its northern defences are natural – an almost vertical cliff; the rest of it consists of a large palisade, conserving its layout as a continuous hollow on its southern side, caught between stone elevations. Such a definition pointed us to a single analogy, and that is Orateia fortress, located on the same mountain pass, but towards its southern exit.

Fortunately, in our age dating through C14 technology is available. Sampling was difficult, as, for instance, not even one bone occurred in our digging; therefore, we sampled pretty much all possible material, almost all wooden traces or small chunks of preserved matter, usually with a carbonized look, turning black⁶⁹. Some samples were obviously good, as, for instance, a wooden nail (surprisingly well preserved, sample MAG18), or some wooden fibres saved from the bottom of the posthole of the outer palisade of the eastern stronghold (sample MAG14). Not all samples looked good or safe, but our collection was anyway small and we tried to use anything possibly helpful. As we are located in a densely forested area, fragments of wood of other ages, for instance traces of roots could also appear in our trenches. We took our chances and sampled all that we found, if the archaeological context was interesting. Of course, sometimes it went bad. For instance, two samples taken from T.8, from a similar stratigraphic position, have been dated for times as different as the 1st century BC and the 15th century AD. None of them are valid for the western stronghold. The most disappointing result was yet the one for the hazelnut found in T.5, in a very interesting position, between waste material from the quarry and the ruin of the eastern stronghold. The hazelnut has been dated to the... 20th century⁷⁰.

⁶⁶ Splinter roofs were common for vernacular architecture up until the middle of the 20th century, but also in state made buildings in the 19th century, as we recently saw in diggings near Fundata (Teodor 2021, 377, 393-394). In that case, though, there were at least 5 nails per square metre.

⁶⁷ During the Second World War the frontline changed rapidly from southern Moldavia to central Transylvania, due to the events from August 23rd, 1944, when the Romanian army switched sides.

⁶⁸ This is suggesting that, due to its concave shape, the former quarry has been used as a refuge by folks hiding from the strong winds on the crest.

⁶⁹ We had contradictory discussions with our colleagues from the AMS team, whether these small chunks of wood have been burned or not. In their expertise, some of the wood has been burned. In our view, none of it has been burned, as there is no sign of burning on the site. The carbonising process could turn the wood almost completely black in certain natural conditions (such as the lack of oxygen), as it happens to coal.

⁷⁰ Such a result was difficult to anticipate, as the ecofact has been found at nearly one metre below the surface, having many

We are going now to look only at the useful data provided by C14 expertise (Table 1).

Table 1. Wooden samples dated by C14

sample	matter	place	calibrated	probability
MAG19	wood	central fort, outer palisade (T.4)	1116-1225	71.2%
			1042-1108	24.2%
MAG18	wood	central fort, outer palisade (T.4)	1222-1288	95.4%
MAG21	wood	central fort, outer palisade (T.4)	1220-1284	95.4%
MAG28	wood	central fort, central space (T.4)	951-1045	87.2%
			896-925	6.3%
			1105-1120	1.4%
			1086-1093	0.5%
MAG14	wood	eastern fort, outer palisade (T.3)	1299-1401	95.4%

The valid dates came exclusively from the Trenches 3 and 4. The former was cutting the northern outer palisade of the eastern stronghold; the latter crossed the central area of the central fortification. From C14 data, the palisade north of the eastern stronghold was made in the 14th century, very likely towards its early part. As the eastern fort should be the latest of the three (due to arguments already shown), the other two should be earlier or, to be clearer, at least two generations earlier. That would probably be before the Mongol invasion.

Three out of four data for the central stronghold have a common stretch between 1222 and 1225, which is pointing to the Teutonic episode of Transylvania's history. Let's see then why data for the sample MAG28 is different, placing it about two centuries earlier, considering the most likely probability. Calibrated data could fall into different chunks of data due to the variation of contained C14, as measured on woods with known absolute data (gained through dendrochronology), as one can see for MAG19 and MAG28. The probability is given by the similitude between known concentrations of C14 and reading data on the specific sample; therefore, sample MAG19 is more likely to be located on the 1116-1225 stretch, than on 1042-1108. Similarly, MAG28 is probably dating from late 10th or early 11th century, two centuries before Teutonic knights came in Bârsa. This is an apparent deviation from the expected results, because, when it comes to large trunks, their C14 date varies depending on the place where measurement is made, being younger close to the tree bark, but older near to the inner rings, first to come to life, but first to die and stop absorbing C14⁷¹.

To conclude, C14 data, along with archaeological, historical, and contextual data, is suggesting that the western stronghold has been built around 1220, the central stronghold shortly after that, but prior to 1225, and the eastern stronghold two or three generations later, towards the end of the 13th century or in the beginning of the 14th century.

Historical context

C14 data is suggesting that two out of the three strongholds from Măguricea Branului should be connected to the presence of the Teutonic Order in south-eastern Transylvania. Avoiding unnecessary details, we will mention here only some historical facts.

Formed in the Kingdom of Jerusalem in the late twelfth century, the Teutonic Order has been invited by the King Andrew II of Hungary to move in south-eastern Transylvania, in order to aid Christians defend themselves against Cumans, which were raiding from the opposite side of the Carpathian Mountains. The first charter (1211)⁷² has given them *Terra Borza*⁷³, a depression located between the bent of Olt River and Bran Pass, measuring app. 55 x 55 km. They were entitled to use half of the silver extracted in the area⁷⁴, to collect local taxes, to an exemption

rocks on top. Nevertheless, a rodent can navigate between the rocks in order to make a cash.

⁷¹ We owe these explanations to Anca Simion, team member of AMS installation from IFIN-HH (Horia Hulubei National Institute for R&D in Physics and Nuclear Engineering) Măgurele, the team which provided data.

⁷² Hurmuzaki, doc. 41; DIR C, 1, doc. 77.

⁷³ In Latin (but also *Borze* or *Bursa* in different documents), Țara Bârsei in Romanian (*Bârsa* in nominative), *Burzenland* in German, *Barcaság* in Hungarian.

⁷⁴ If any, as apparently there is none. The issue is mentioned again in the charter emitted in 1222.

Fig. 43. Map of the Bârsa Land, with the main landmarks for the 13th century. SRTM-90.

The limits of the given country – Bârsa – are detailed in the same donation from 1211. The first three landmarks are border (Hungarian) fortifications⁷⁵ located on the right (or northern) bank of Olt River: Hălmeag⁷⁶, Ungra⁷⁷, and Micloșoara⁷⁸ (see the map in Fig. 43)⁷⁹. Upstream the Olt River one will meet the next landmark, the place where Târlung⁸⁰ Rivulet flows into the Olt⁸¹. The next landmarks are the springs of the same rivulet, in the heart of the mountains, and the springs of Timiș, located 15 km south of Brașov. At this point, the charter becomes confusing,

⁷⁶ *Indagines castri Almage* in original. Germ. *Halmagen*, Hun. *Halmágy*.

⁷⁸ *Ad indagines Nicolai.* Hun. *Miklósvár.*

⁸⁰ *Prejmer* in DIR C, 1, doc. 77, yet the river flowing near the village (Rom.) *Prejmer* is called *Tărlung* (see geoportal.ancpi.ro/portal), close to the original (Lat. *Tertillou*; *Tartelowe* in Andrew's charter from 1222). The old name is today inherited by a village located a few km southward, *Tărlungeni*. See also Suciū 1967, note 12.

but essentially it says that following the ‘snowy mountains’, one should reach the springs⁸² of Bârsa River, closing the cycle on Hălmeag.

Another detail which has prompted attention is the description of the ceded land as *desertam et inhabitatam* (a deserted place, with no inhabitants). There are some reasons of disbelief, but one of them is of a particular interest: the archaeological diggings at Feldioara (Marienburg) showed a continuous occupation from the time of Géza II to the days when Teutons moved in, on a timespan of about 50 years⁸³. The aforementioned expression should be interpreted as a territory with a vacancy, with no local authority, and – by no means – as completely devoid of people. Such ‘deserted’ lands were to be found anywhere on the frontier line, where earthen and wooden fortification were made, in order to more easily control the crossing places; living in front of such military outposts was forbidden, for obvious reasons⁸⁴. As the border area has changed a lot during the 12th and 13th centuries, progressing towards the east and south, there were many such ‘deserted’ places in central and southern Transylvania. In Feldioara’s case, the Saxon colonists were forced to leave in order to make room for the newcomers, or, possibly, just move nearby.

News comes quickly: the charter from 1215⁸⁵ attests the building of a new fortress, Cruceburg, made probably outside Burzenland⁸⁶. Just a few years later, in 1218, The Holy See confirms the decree of the Transylvanian bishop, William, issued only five years before, in 1213⁸⁷, which was taken as a sign that tensions with the king were ramping⁸⁸. Such troubles are confirmed by the first attempt of evacuation of the Order from Transylvania, by military force, in 1221⁸⁹.

The royal donation from 1222 is the most complete document referring the relations between Andrew II and the Teutonic Order⁹⁰; it yet contains some suspicious facts⁹¹. The geographical stammering related to the western side of Bârsa land is fixed, proving a much better knowledge of the area, yet with a surprising outcome; the order of the landmarks is now proper, mentioning the fortifications from Hălmeag, next the springs of Bârsa River, and next... the Danube itself! Between the crests of the mountains and the Danube there are over 200 km, as the crow flies⁹². The charter also mentions that the lands ‘at the end of Cruceburg territory’ goes further up to the Brodnics borders, which would be somewhere in central Moldavia⁹³. The king would have also allowed brothers to have six boats on

⁸² In original ‘the confluence’. In fact, there are several upper valleys named Bârsa, and possibly their confluence could be the intended landmark. The text is confusing anyway, with geographical issues and debateable order of facts. The right connection between Bârsa springs and the stronghold from Hălmeag has been made yet into the Andrew’s charter from 1222 (DIR C, 1, doc. 130, p. 184).

⁸³ Ioniță 2013, 122-123.

⁸⁴ Țiplic 2007, 106-107. Such a clear perspective could be challenged by some discoveries, as the case of the earthen hilltop stronghold from Vurpăr (eastern Sibiu County), built around 1300 (Nägler and Rill 1983). Obviously, this is not a frontier landmark, but a refuge fortress, possibly never used, and its reasons are connected with the fear of a renewed Mongolian invasion, being a community refuge, not a kingdom fortress. The theory advocated by I. Țiplic has to be analysed further with compelling evidence. ‘*Terra deserta*’ seems just a chancellery statement that there are no legal impediments for a donation.

⁸⁵ DIR C, 1, doc. 82.

⁸⁶ A speculation fuelled by the fact that Hungarians recognised it (Hautala, Sabdenova 2016, 77). About the possible location – see further, but one would expect it on a side *not* bordering the Hungarian possessions, i.e. east or south.

⁸⁷ And dealing with perception of tithes, allowing Teutonic brothers to collect it from newcomers, and ordinations of new priests for newly built churches (DIR C, 1, doc. 91).

⁸⁸ As in Hautala and Sabdenova 2016, 78.

⁸⁹ Hautala and Sabdenova 2016, 79.

⁹⁰ DIR C, 1, doc. 130.

⁹¹ It is suspected to be a Teutonic artefact made in 1231 (Hautala and Sabdenova 2016, 78). The charter from 1222 has been previously contested and defended (bibliographical details at Papacostea 1993, 33, note 83), which is not really our concern here, because it contains relevant information, no matter if redacted in 1222 or after 1230.

⁹² Were then the plans of the Hungarian Kingdom so ambitious? Apparently yes, see Sófalvi 2023.

⁹³ Spinei 1982, 144-145; see also Papacostea 1993, 33, 67. Although it is clear that the bishopric of Cumania took over the former Teutonic territories beyond the mountains, nobody can draw the geographic limits of it. It is yet worth mentioning that there is no visible connection between Teliu and Oituz Pass, in documents or archaeological evidence. ‘The end of Cruceburg territory’ (mentioned by the 1222 charter) is likely to be Buzău Pass, towards the south, not towards the northeast (Oituz). Although Romans had a road driving to *Angustia* (Brețcu), current research supposes that the connection with the other side of the mountains, during the Migration Period, was made over Buzău Pass, and not by Oituz Pass (Popa 2022, 241). The so-called *Homárka vallum*, 8 km in length (typo at Țiplic 2002, 149, where one will find 80 km), south of Comolău (Hun. *Komolló*) and Borosneul Mare (Hun. *Nagy Borosnyó*) has been proved to be not a fortification (Daicoviciu 1950, 118, 121), but rather a road made on a rampart, likely Roman. On the other part, the etymology of Oituz is Old Turkic, meaning ‘a salty depression’ (which is right, see today *Poiana Sărată*, into the corridor), borrow which cannot be younger than 13th century. The Rákóczi Castle in Oituz Pass, despite other opinions, was been established relatively late, at the beginning of the 17th century (Sófalvi 2014, 682-684). Another side of the problem is that the interests of the Hungarian Kingdom had been defended along the Eastern Carpathians as early as late 12th century or so, as seems to be the case at Bâtea Doamnei (Hun. *Karácsonkő*), on Bicăz River,

Olt River, for their salt exports, and another six on the Mureș River, which is generous, although no salt mines (or salt waters) are known in the area⁹⁴.

Moreover, the Charter from 1222 is granting the agreement for building stone fortifications⁹⁵, one of the major reasons of the quarrel and military repression from 1221 and the expulsion of the Order just three years later, in 1225.

After 1222 things have gone from bad to worse. There are lots of letters from the Pope and church authorities⁹⁶, concerning alleged broken rules due to Teutonic deeds. Although the quest was not over, the Holy See decided to take Teutonic lands under the direct protection of Rome, which triggered a new military intervention of the Hungarian king, and the final outcome: in a letter from October 1225 the Pope acknowledged the awful destructions and the expulsion of the Order from Bârsa Country.

One much debated issue, still not cleared, is about these five (or five plus one) strongholds made by the Order in Bârsa Land. The only one known by name, from old documents, is Cruceburg⁹⁷, identified by almost all historians with Teliu; if so, the fortress would be a few kilometres east of the limits of Bârsa Country, as depicted by Andrew's charter from 1211. Apparently, it was not contested by Hungarians, being a part of the territorial expansion intended to stop Cuman raids, which confirms that it was outside the territory considered at the time as 'Hungarian'. Looking at the map, one can see that Teliu is controlling the shortest route between Bârsa land and the upper Buzău River, which is the necessary connection with Buzău Pass⁹⁸, crossing the mountains near Tatar Peak and over Crai Peak⁹⁹. This is, very likely, in the heart of *Cumania*, as it is mentioned in documents.

Unfortunately, the alleged Teutonic fortress at Teliu did not survive modernity, being used as a quarry for the newly built railway... It was already badly preserved after the First World War, being almost completely dismantled during the Second World War, and completely absent in 1960s, when the first archaeological diggings took place (for the nearby prehistoric stronghold)¹⁰⁰. All that is left are the reports made by Iulian Marțian, who was able to see stone walls¹⁰¹. One of the reasons the equation Teliu = *Cruceburg* was largely accepted is the local tradition

near Piatra Neamț, where old excavations provided astonishing discoveries, mainly seen together, as four knightly two bladed swords (one complete), a large set of arms and cavalry assets, but also several agricultural tools, and at least two (or three?) encolpions of Kiev Type (Sófalvi 2021b). Note that at least one cross from Bâta Doamnei has been classified as the Type B, the oldest, produced before the Mongolic invasion (Spinei 1992, 163). This very interesting discovery still says nothing about the circulation through Oituz Pass, located 93 km north, as the crow flies, across the mountains.

⁹⁴ Salt resources in south-eastern Transylvania are plenty, but all outside Bârsa Country (Kavruk et al. 2017, esp. 417, the map in Fig. 1), more specific north of Olt River. If the Order ever mined salt, it could only be beyond the mountains, in Slănic Prahova (at the southern end of the Tătaru Mare—Slon corridor) or Slănic Moldova (northeast of Oituz Pass), both rather far. The former is the most likely. One could also consider that the Order had the right of mining on other salt area from Transylvania, for instance one of the sites indicated by Kavruk et al. 2017, being so close, but for now this is only a speculation.

⁹⁵ *Castra et urbes lapideas*.

⁹⁶ Hurmuzaki, I, doc. 60, 61, 63, 64-68, 71-75

⁹⁷ *Castrum Cruceburg* in DIR, C, 1, doc. 139, from 1222; Hurmuzaki, document 43, diploma wrongly dated in 1212 (in fact 1222), found in Suciu 1968, s.v. Teliu with Hurmuzaki's date; *castrum Cruceburg* in DIR, C, 1, doc. 130, and Hurmuzaki doc. 54, year 1222.

⁹⁸ Take note that Buzău Pass (having a wide variety of orthographies along time, as, for instance, Boza, Bozza, Bodza, Bodzau) is not along the middle Buzău River, flowing to the city of Buzău, but along the western wing of Siriu Mts., descending to Slon (where an old Bulgarian stronghold with three phases stands). Although crossing heights of almost 1,500 m, this is the easiest and the shortest pass in the area, used also by the Romans (Ștefan and Ștefan, 2018). On the same route one will find Tabla Buții fortress, used as a frontier mark from the 14th to the 17th century (Căpățână et al. 1998). This is why Paul Binder thought, in his early papers, that Tabla Buții could be Cruceburg, although being aware that the plan of the fortress is rather of the 14th century type (Binder 1967, 127 with the note 41).

⁹⁹ Not to be confused with Piatra Craiului Mts. *Vârful lui Crai* is located on the west side of Siriu Mts. (known also as Culmea Tătarului), 67 km east of Piatra Craiului. The risk is yet there, including in scientific papers (see examples in Binder 1967, 129).

¹⁰⁰ Older literature at Ștefan, Ștefan and Buzea, 2019, 232-234.

¹⁰¹ In 1921, Marțian described an elliptical stone made precinct on a circumference about 75 m, with two large ditches in the northern part, where the access was easier (Ștefan, Ștefan and Buzea, 2019, 232).

which gives its Saxon name as *Krotzbrig* or *Kretzbirg*, and the name of the valley, in documents from 15th century, which is *Groscruczbach*¹⁰².

As for the rest of the Teutonic fortresses from Bârsa, unnamed in old documents, there are different degrees of certitude. One for which nobody objects is Feldioara, due to its German name, Marienburg, standing for the very name of the Order¹⁰³, praising the name of St. Mary, as well as for the analogy with the Polish Marienburg (Malbork)¹⁰⁴. The relatively extensive archaeological excavations – the only ones in this series of suspected Teutonic locations – brought enough evidence to be pretty sure of the identification¹⁰⁵.

Another case is Codlea—Schwarzburg, a high altitude stronghold (980 m), west of the town, on the same crest growing towards Măgura Codlei (1,294 m), where two separate archaeological campaigns took place (1921-23 and 1966-68), revealing several stone walls and a tower, without providing a clear plan¹⁰⁶. The fortification is attested by a document from 1267, reporting the skirmishes from 1262, suggesting that stronghold might be older, from instance from the 1220s¹⁰⁷. At the *Black Fortress*¹⁰⁸ from Codlea a two bladed sword has been found, in an archaeological context, classified by Zeno Pinter as type VI and dated, by means of analogies, to the 13th century¹⁰⁹. There are fair chances that this fortress is one of those founded by the Teutons. The height, the location (a crest), and the descriptive detail that it was chopped in the cliff, are all well resembling our discoveries from Măguricea Branului, especially the eastern stronghold (which is later though).

Other place names mentioned as hosting a Teutonic stronghold are *Brassovia* and Râșnov (*Rosenau*). The first has been erected on the heights above the city of Brașov (near Tâmpa Peak), demolished before 1455, therefore made earlier, but there is no clear proof dating it within the span of 15 years, between 1211 and 1225. The hypothesis is still credible, due the strong position and the excellent visibility (covering almost all of Bârsa Country), although previous resolutions are of all sorts¹¹⁰. Râșnov case is more difficult. On that steep hill near the town, where a large Dacian fortress once stood¹¹¹, superimposed by several construction phases of the late medieval citadel¹¹², the remains of a presumptive Teutonic – and short living – stronghold are difficult to spot. The oldest medieval artefact found on the site is a sword button¹¹³ dated in the second half of the 13th century,¹¹⁴ suggesting that some knights stood there in the aftermath of the Mongolic invasion, with a good probability of an older fortification already existing on that spot. What caught our attention is the detail of the outer defences, where two ramparts are separated by a large ditch. The medieval ramparts are made over the Dacian fortification and are superposed by the precinct wall of the later lower fort, being thus a double rampart earlier than the stone wall¹¹⁵. The two ramparts having a ditch in between are an obvious analogy for the so-called central and western strongholds from Măguricea Branului.

¹⁰² Binder 1967, 124-125 with the notes 19 and 26.

¹⁰³ *Ordo domus Sanctae Mariae Theutonicorum Hierosolymitanorum*.

¹⁰⁴ Ioniță 2013, 127. Note also that at Feldioara is attested, in 1240, as *Castrum Sanctae Marie*.

¹⁰⁵ Marcu Istrate and Ioniță 2019, 125-131.

¹⁰⁶ Adrian Ioniță (2013, 128) considered that the remains are suggestive rather of a fortified ridge, than of a proper stronghold, adding yet that on that crest there are two impressive cisterns, which are usually found in ‘proper’ fortresses (see, for instance, Oratea or Brassovia).

¹⁰⁷ Ioniță 2013, 128.

¹⁰⁸ There are plenty of ‘black’ names around. To Schwarzburg add the Black River (east of the Order’s territory), the Black Valley (a variant of the Prejmer Rivulet, Schwarz Bach on the Second Austrian Survey), the Black Voivode (a Romanian legendary ruler from Făgăraș Country, just west of the Teutons’ territory, for the later 13th century, see Stoicescu 1980, 97-164). Even the Cumans from the borders are ‘black’ (Spinei 2008, 426).

¹⁰⁹ Pinter 2007, 86-88. Note that this type is frequent in southern Transylvania, having several analogies in proximity, as Sânpetru and Brașov; more interestingly, an unfinished blade of the same sort, has been discovered in Șelimbăr (Sibiu County). More recently, another fragmentary sword, of the same type, has been discovered in the same place, in Codlea (Moței 2013; Pepene 2019).

¹¹⁰ Popa 2014, 338, without using specific arguments, except the role played by Brașov in the 13th century, accepted that one of the five fortresses of the Teutons had to be standing there (paper first published in 1991). Niedermaier 2013, 72, gave also a strong support. Rusu 2013, 88, 94, was rather favourable, but Roth 2013 produced a categorical denial. See also, more recently, Sófalvi and Feld 2020, 16-17, Figs. 11, 13.

¹¹¹ Costea 2004, 117-119.

¹¹² Rusu 2022, 49-102.

¹¹³ The double-edged sword (*gladius*) is a strong indicator for high social status – at least a knight (Rusu 2019, 520-521).

¹¹⁴ Rusu 2022, 51.

¹¹⁵ Rusu 2022, 56-57, 80 with the Fig. 1. The stone wall closing the Lower Fortress is made into a rampart, very likely also medieval, yet earlier, with wooden structures. A large ditch and another rampart (large also, 4.5 m wide and 3 m high) follow downhill, at about 12 m. The author comments that the Dacian pottery, found in large quantities, could be the result of the disrupted contexts of the previous Dacian settlement, and not dumped rubbish into the ditch. He might be right, but the real argument is the shape of the ditch, U type, which cannot be of Dacian Age.

Our main argument favouring Râșnov's identification as a Teutonic fortress is yet different. Looking back on the map (Fig. 43) one will see that the most of the likely Teutonic forts are strategically located: Feldioara is holding the northern fringes, Teliu is closing the main gates¹¹⁶ from east, Codlea is surveying, from the heights, the western side of the land. The case *Brassovia* is more complicated, due to the state of art, no obvious geographical directions being known there, but there are lots of arguments favouring it. First of all – the Dacian stronghold at Pietrele lui Solomon¹¹⁷, also located south of the city, in the mountains. There are lots of recent discoveries, due to metal detectorists, for several different ages, all driving south of the city, towards Postăvaru Mountain and Poiana Brașov¹¹⁸. Another very interesting and recent discovery is also located in the mountain, southeast of Brașov, close to the Timiș springs, on the spot named Vârful lui Andrei (Andrew's Peak, 1,442 m), without other archaeological information (nothing is recorded nearby); it is a two bladed sword, dated to the late 13th or early 14th century¹¹⁹.

Where is then the southern gate of the Teutonic land, closing such an important pass as Bran? It might be Măguricea Branului, which is located exactly on the edge of the Bârsa Country, but it can be also Râșnov. An interesting fact is that, if no forest around, there is perfect visibility between Măguricea Branului and Râșnov, the distance being 12 km; therefore, they can play together in the same strategic game. Why Râșnov and not Măguricea? This is not a final say, but, so far, we cannot see a chapel in Măguricea Branului¹²⁰.

One can find in historical literature other place names taken into consideration as one of the five Teutonic strongholds: Comana¹²¹, Dealul Lempes (Germ. *Lempesch*, Hun. *Lempes* or *Tatárvár*, meaning Tatar burg)¹²² or Dealul Șprengghi (Ger. *Gesprengberg*, Hun. *Gespreng-hegy*)¹²³. Of course, not all aforementioned names could be real Teutonic fortresses. For instance, *Brassovia* and Dealul Șprengghi cannot both be on the list, as they are too close to one another. The same could be probably true for Râșnov and Măguricea Branului.

There is another contentious site under discussion: Oratea¹²⁴, located relatively far away, beyond the top of the mountain (30 km from Bran). The medieval fortress certainly functioned between the 14th and (sometime during) the 16th century, but a recent review of the archaeological inventories from the diggings between 1968-1971 led to the conclusion that at least some arrowheads could date back to the 13th century¹²⁵. Even more recently, in 2021, András Sófalvi undertook new research at the site, preparing a conservation and restauration project. As no artefacts could point to the 13th century (except, perhaps, a spur)¹²⁶, the attention was caught by some stratigraphic

¹¹⁶ The corridor driving to the Buzău Pass, but also to the Black River Valley (Rom. *Râul Negru*; Hun. *Feketeügy*, both with the same meaning).

¹¹⁷ Costea 2004, 91-92.

¹¹⁸ Unfortunately, not published so far. Information provided by Ovidiu Popescu. We made a visit in the area, in 2019.

¹¹⁹ Being complete it could be recognised as type VIIIb (Pinter 2007, 93-96), as we had good photos (with a ruler) made by the discoverer back in 2017 (Florin Burlacu, with gratitude). We haven't yet seen the place, but the geography could suggest an unknown fortress of the 13th century. The site can be reached from both Timiș Valley or via Săcele, east of Brașov. The sword entered the collection of the Brașov County Museum, but it received no inventory number so far (personal information Florin Moței). Note that Vârful lui Andrei (1,442 m altitude) is placed inside the Teutonic territory (see the map), and also that such prestigious weapons were usually not 'lost' in battle, being a valuable booty (Rusu 2019, 522); therefore, such a weapon – missing only a splinter from the tip – was, more likely, buried.

¹²⁰ But we can neither exclude its presence in the middle of the western stronghold.

¹²¹ The author who led the archaeological diggings considered it more like a refuge fortification, with no strategic value (Eskenasy 1981, 35), missing something essential – a good visibility, and more likely built after the Mongolian invasion. Although located at high altitude (814 m), in Southern Perșani Mts., the sight is blocked by still higher peaks nearby. We have checked this against a terrain model, and he is right. Anyway, the fortification stands on the western side of Perșani Mts., which is outside Bârsa Land.

¹²² Alexandrescu and Pop 1959. See also Sófalvi and Feld 2020, 15-16. The location is excellent (almost 200 m above the place around), with perfect visibility for the entire northern half of the Teutonic land (or more, on clear sky). What caught our attention is the wide and deep defensive ditch, located between two ramparts, a feature seemingly shared by many strongholds of the 13th century, Teutonic or not. The hillfort could also belong to the first wave of Saxon colonists, before Teutons (Ioniță 2013, 122).

¹²³ Alexandrescu and Constantinescu 1959. Again – an excellent position, on a hill 100 m above the landscape around, a great ditch facing a stone wall and behind an earthen rampart, a feature apparently very typical in the 13th century. See also Sófalvi and Feld 2020, 16 with Fig. 12.

¹²⁴ The name could be found in several orthographies, as Orația, Orate, or in dative form, Orății (and others...), but Oratea is the current 'official form' (as in the recent restauration project, initiated by the Argeș County Council). In older documents it is mentioned as *Királykő* (Hungarian), *Königstein* (German), *Lapis Regis* or *Chiral Petra* (Latin). The name (Oratea) has no clear meaning, in any language, therefore its origin is under debate: it would have a Hungarian root, from *vár* (Eng. castle, Sófalvi 2019, 288), or would be formed on local grounds, although with uncertain etymology (Teodor 2022, 181), a situation pretty frequent in Romanian linguistics.

¹²⁵ Sófalvi 2019.

¹²⁶ Sófalvi 2021, Fig. 75/1.

issues, like a vegetal layer between the foundation and the elevation, differences in plan between the foundation and elevation¹²⁷, differences of materials (type of stone or type of mortar), as well as thin traces of fire, here and there, on the foundation layer. These observations are documenting a construction phase that could be older than the visible elevation¹²⁸. Of course, such arguments still don't prove the exact date of the first construction, but Orateia will stay under observation, as the expected restauration works will be attended by the archaeologist.

The historical names given for Bran are variants for (Germ.) *Törzburg*, and (Hun.) *Törösvár*, similar to the Romanian name of the river crossing the place, Turcu (meaning The Turk)¹²⁹. The latter is attested, in the plural form (Rom. *Turci*), from 1426. Bran has been recorded in 1508¹³⁰. This last form, Bran, is very interesting, having a clear Slavic background, with several possible translations, but all composing a relevant description. In old Slavic, *Brania* has the meaning of struggle, fight, or battle; in Czech language, *brana* is a gate¹³¹. Bran is also a personal name in Wallachia, mainly for men of the upper class (of Slavic extraction), attested for the 15th century. This is strongly suggesting an origin descending before the presence of Hungarians and Germans in the area. Even more interestingly, the village located immediately east of the castle has the old Romanian name *Poarta*, having the same sense with Lat. *Porta* – a gate, and could be even older. The mountain itself, where the castle stands, has the name Culmea Porţii (Eng. the Ridge of the Gate), in an area where the toponymy is almost exclusive Romanian (this includes old Austrian maps), therefore there is no other known name. Historical literature has already dealt with such names, always given to an entrance through a linear fortification of archaic extraction, which is a combination of abatis¹³² and palisades, known in many places in central and southern Transylvania, for 11th and 12th centuries¹³³.

Near Bran castle, one could actually find a 'gate', but what we can see today are walls made in late Middle Ages or early Modern Age. The narrow passage through the gorge is closed by two brick walls, in the both sides of the Turcu River, one at the front (towards the high mountain pass), 90 m long, and a second, shorter, 120 m behind. In the 18th century the buildings of the customs office were located between the two walls¹³⁴. Were these walls the first closure of the pass? No archaeological research has been made on the site, therefore we don't know. These two place names (Bran and Poarta), certainly older than the walls, are yet suggesting that an older closure, possibly a palisade, existed there before, crossed by a road and a gate. The touristic path departing from the Bran Castle area towards Măguricea Branului begins exactly on the line of the front wall. This could explain another fact: the latest stronghold from Măguricea is not only a very good survey point, but it is close enough to assist a 'gate' garrison, the path taking about 15-20 minute to descend, for fit soldiers.

The fortress we know today – after many transformations – as the 'castle' Bran has been erected following the permission granted by King Louis I of Hungary on 19 November 1377 to the Saxons from Kronstadt (Braşov) to

¹²⁷ As the foundation could be larger or narrower than the elevation (Sófalvi 2021, 10, 15, 17).

¹²⁸ See also Cantacuzino 2001, 166, which dated the construction towards the end of the 14th century.

¹²⁹ This isn't the only such name, at the edge of the mountain. Near the entrance to Timiş Valley lies the village Turcheş (Hung. *Türkös*, Germ. *Türkeschdorf*; for older forms see Suciu 1968, s.v. Turcheş). The name is obviously indicating a direction driving to the 'Turks'.

¹³⁰ Suciu 1966, s.v. Bran. See the entry for variants of each. The author has extrapolated the form 'Turci' from the original Slavonic 'Turşor', but the last should not be ruled out, being a diminutive for the same singular 'Turcu', meaning the Turk (the small one). Romanian name, as well German (*Törz/Töröcs*) and Hungarian correlatives (*Türkes/Türkös*) are all coming from an Old Turkic language (Pecheneg or Cuman), much before the presence of the Ottomans around. The form *Törzburg* is firstly attested in a document from 1367 (Nussbächer 1976, 25), well before the well-known fortress or the presence of the Ottomans on Danube. The Romanian form (*Turciu*) appears in Wallachian documents from the beginning of the 15th century (Nussbächer 1976, 26).

¹³¹ Dictionarul Onomastic Românesc, 1963. There are related variants in Polish, Ukrainian and Russian (Novotný 2005). The name Bran firstly occurs in a Latin document from 1427, as a toponym near the fortress (Nussbächer 1976, 25). Although later attested than *Törz/Töröcs* (see the note above), its Slavic origin is suggesting that it is centuries older.

¹³² Recently adopted in Romanian language (see Rusu 2020, s.v. *abatiză*), yet the consecrated, old word is *prisacă* (with unknown origin) or *stupină* (from Latin), both related to bees and their behaviour. The Hungarian correlative is *gyepű*, and Latin one *indagines*.

¹³³ Ţiplic 2002. We will not go deeper here into the terminology (in three different languages!), but one detail struck us: the translators of Ţiplic 2006, 104, used in classification a word ('apiaries') which very likely does not make sense in English, being a direct translation from Rom. *Stupini*, meaning 'hives', as a metaphor for bees defences, hence defensive works. The word occurs twice in the eastern Bârsa Country, firstly east of Prejmer (Germ. *Tartlau*), secondly north of Prejmer, on the opposite side of Olt River. This is interesting because this is a low, marshy land, where place names of Romanian origin are rare. Even more interesting are the documents where the toponyms occur: on the Romanian Military map from 1980s, but also on a Habsburg map made in the middle of the 19th century. The two are very likely drawing together a line of defence made when the limits of the Hungarian Kingdom were there, in early 13th century.

¹³⁴ Teodor 2021, Fig. 2 (Bran's customs on the First Austrian Survey), and Fig. 3 (photo of the foremost wall), Fig. 4 (Austrian blueprints from 1819, see the red line no. 1 – the back wall, 4 and 5 – the front wall). See also Iosipescu 2013, photos at the Figs. 37-38.

build it, on their own expense¹³⁵. The expression ‘*novum castrum in lapide Tydrici aedificare*’ has been understood as either a brand-new fortress, or a reconstruction on the same place. The latter variant has been rejected long time ago, as the same document mentions the need to cut the wood on the place where the fortress was meant to be built, which would not be the case for an older fortification¹³⁶. The name *lapis Tydrici* has been translated as Dietrich’s Cliff, a German name which is the equivalent for the Latin Theodoricus, resonating with *frater Theodoricus*, the head of order in Bârsa Land from the 1212 charter¹³⁷. We are now closer to explaining the place name than any time before: on the mountain wing located west of the Bran castle, at a distance of only one kilometre, there is a cliff which might be *lapis Tydrici*. This is what we called the eastern fortress, a place used first as a quarry, at the time when Teutons were here. But there is a possible another Dietrich in the picture: *comes Dietrich*, the son of Teel from Prejmer (*Tartlau*), known from a document dated 1301. He could be the builder of the latest fortress from Măguricea Branului¹³⁸. Or not. We have to face the fact that the eastern stronghold from Măguricea Branului could be really absent in the documentation which survived from the early 14th century. Would not be the only. Dietrich’s Cliff, although mentioned in a document, has still the aura of a nice legend.

Conclusions

A mountain research project (HiLands) brought the opportunity to discover, on a ridge west of Bran, three strongholds. The two fortifications grouped on the western side, although of different shapes, have similar defences, with a large ditch between two palisades, and functioned together, sometime in the first half of the 13th century. They were most likely made by the brothers of the Teutonic Order between 1211 and 1225. The third stronghold, used at first as a quarry (for the central fortification), became in turn a fortification, several decades later, probably at the threshold of the 13th and 14th century.

The digging provided almost no artefacts from the Middle Ages, therefore the proposed chronology stands on C14 expertise alone.

At this state of art, it is difficult to say whether the discoveries from Măguricea Branului qualify as one of the five strongholds made by the Order in Bârsa Land, mentioned in the Papal letter from 1231. For now, we can only acknowledge that although built, the strongholds were not used. We can only hope that future research could shed more light.

The list of unclear facts contains, among others, the water issue. In our judgement, the western fortified complex, including the outer palisade, needed at least 100 armed men (optimally, 200) to keep the defences. We know how the logistics went for 6 men during the archaeological campaigns, and can only imagine how it would go for 150. If the food is to be brought from a distance, where the edibles are made, the water problem is worse, because of the necessary quantity. We were not able to find any spring closer than 700 m, with a very unpleasant 200 m altimetric difference.

From what we already know, the type of fortification (hillfort), the small size, the use of palisades and large defensive ditches are all common with the strongholds discussed in the previous section. It would be useless to try comparisons to the Crusaders’ building style in the Levant¹³⁹, or with later fortresses at the Baltic Sea¹⁴⁰. Building a fortress is less about style, and more about the landscape, the building materials at hand, and the skills of the workers; therefore, local traditions (established long before the Order’s insertion to Transylvania) are decisive in making such decisions.

Another point we want to make here is to avoid being trapped into Papal propaganda, because 500 knights (or less) cannot really change history on a time span of less than 15 years¹⁴¹. Five strongholds, small and modest as they are, are the maximum possible achievement.

Acknowledgments

¹³⁵ DIR D, vol. 1, doc. 67, p. 110-112.

¹³⁶ Fritz Schuster (1917) and Heinrich Wachner (1934), mentioned in Popovici 2011, 74-75.

¹³⁷ DIR C, 1, doc. 82.

¹³⁸ Popovici 2011, 76-77.

¹³⁹ As, for instance, Fulton 2021.

¹⁴⁰ This comparison could be more profitable, as, in the early stage of the Teutons at the northern shores, there are many defences made out of wood and earth (Rusu 2005, 440).

¹⁴¹ Rusu (2005, 442, see esp. note 3) is citing several opinions giving figures between 100 and 300 Teutonic knights in Transylvania. We have to consider, as term of comparison, the fact that the Saxons from southern Transylvania had to join the royal army with 500 armed men (DIR C, 1, doc. 157, p. 208-210, Andrew charter from 1224). It is impossible to think that the Teutons could have been more.

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ABBREVIATIONS

DIR C, vol. 1 – *Documente privind istoria României. Veacul XI, XII și XIII. C. Transilvania*, vol. I (1075–1250), București; Ed. Academiei.

DIR D, vol. 1 – *Documenta Romaniae Historica. D. Relații între țările Române*, vol. 1, București: Ed. Academiei 1977.

Hurmuzakii – *Documente privitoare la Istoria Românilor, culese de Eudoxiu de Hurmuzaki*, Vol. 1, 1199-1345, București: Academia Română, 1887.

RAN – Repertoriul Arheologic Național, <http://ran.cimec.ro/sel.asp>.

LITERATURE

Alexandrescu, A., 1973. Contribuții la cunoașterea populației autohtone în feudalismul timpuriu din Țara Bârsei, *Cumidava*, 7, 47-54.

Alexandrescu, A.D., Constantinescu, N., 1959. Săpăturile de salvare de pe dealul Șprenghi, *Materiale și Cercetări Arheologice*, 6, 667-678

Alexandrescu, A.D., Pop, I., 1973. Săpăturile de pe Dealul Lempeș, *Materiale și Cercetări Arheologice*, 10, 231-234.

Cantacuzino, G., 2001. *Cetăți medievale din Țara Românească în secolele XIII-XVI*, București; Ed. Enciclopedică.

Căpățână D., Teodor E.S., Ioniță A., Ciupercă B., Bădescu A., 2008. Cetatea de la Tabla Buții (com. Cerașu, jud. Prahova) – campaniile arheologice 1995–1996, 1998. *Materiale și Cercetări Arheologice* S.N. 4: 157–182.

Ciupercă, B., 2010. Câteva observații cu privire la poziția și rolul fortificațiilor de la Slon, jud. Prahova, in H. Pop et al. (eds.), *In memoriam Alexandri V. Matei*, Cluj-Napoca: Ed. Mega.

Costea, F., 2004. *Repertoriul arheologic al Județului Brașov*, Brașov: Ed. c2design.

Daicoviciu, C., 1950. Granița de est a Daciei și triburile libere de la hotarele de răsărit ale Daciei, *Studii și Cercetări de Istorie Veche*, 1, 115–122.

Davidson, S., 2003. *Conservation and Restauration of Glass* (2nd ed.), Oxford: Butterworth-Heinemann,

Dinu, C., Costache, D., Stăicuț, G., Constantinescu, E.M., Matei, S., 2011. Contribuții la repertoriul arheologic al județului Buzău. Cercetări de suprafață pe Valea Buzăului, *Mousaios*, 16, 39-104.

Eskenasy, V., 1981. O nouă fortificație românească din Țara Făgărașului – cetatea Comanei (secolele XIII-XIV), *Revista Muzeelor și Monumentelor. Monumente istorice și de Artă*, 1, 34-44.

Fulton, M.S., 2021. The Two Towers, *Medievalist.net*.

Hautala, R., Sabdenova, G., 2016. Hungarian Expansion in Cumania on the Eve of the Mongol Invasion of 1241, *Archivum Eurasiae Medii Aevi*, 22, 71-106.

Ioniță A. 2013. Începuturile colonizării Țării Bârsei reflectate arheologic, *Studii și Cercetări de Istorie Veche și Arheologie*, 64 (1–2): 121–132.

Iosipescu, S., 2013. *Carpații sud-estici în evul mediu târziu. O istorie europeană prin pasurile montane*, Brăile: Muzeul Brăilei.

Kavruk, V., Ștefan, M.M., Buzea, D., Bordi, Z.L., 2017. Towards an archaeological and ethnographic network analysis of salt supply routes in Southeastern Transylvania, *Istros*, 23, 397-430.

- Kirițescu, C., 1989. *Istoria războiului pentru întregirea României, 1916-1919*, vol. 1, București: Ed. Științifică și Enciclopedică, first ed. 1922.
- Marcu Istrate, D., Ioniță, A., 2019. Marienburg – eine ehemalige Grenzburg in Rumänien. Von der Deutschordensburg zur befestigten ländlichen Siedlung, *Mitteilungen der Deutschen Gesellschaft für Archäologie des Mittelalters und der Neuzeit*, 32, 125-142.
- Moței, F., 2013. Ein unveröffentlichtes mittelalterliches Schwert aus dem Sammlungen des Kronstädter Museum für Geschichte, in K. Gündisch (ed.), *Generalprobe Burzenland. Neue Forschungen zur Geschichte des Deutschen Ordens in Siebenbürgen und im Banat*, Köln–Weimar–Wien, Böhlau Verlag, 154-159.
- Napoli, J., 1997. *Recherches sur les fortifications linéar romaines*, École Française de Rome.
- Nägler, T., Rill, M., 1983. Fortificația medievală de pământ din comuna Vurpăr, jud. Sibiu, *Materiale și Cercetări Arheologice*, 17, 485-487.
- Niedermaier, P., 2013. Zur Siedlungstopographie des Burzenlandes in der Deutschordenszeit, in K. Gündisch (ed.), *Generalprobe Burzenland. Neue Forschungen zur Geschichte des Deutschen Ordens in Siebenbürgen und im Banat*, Köln–Weimar–Wien, Böhlau Verlag, 58-76.
- Novotný, M., 2005. Brána, brány, bránice, in *Český rozhlas Region*, see <https://region.rozhlas.cz/brana-brany-branice-7291006>
- Nussbächer, G., 1976. Contribuții la istoricul cetății Bran și a domeniului ei în secolele XIV-XV, *Cumidava*, 9, 1, 25-33.
- Papacostea, Ș., 1993. *Românii în secolul al XIII-lea. Între cruciată și imperiul mongol*, București: Ed. Enciclopedică.
- Pepene, N., 2019. Spada din cetatea de pe Măgura Codlei. Moștenirea cavalerilor teutoni din Transilvania? *Historia*, 208, mai 2019.
- Pinter, Z.K., 2007. *Spada și sabia medievală în Transilvania și Banat (secolele IX-XIV)*, Muzeul Brukenthal: Sibiu.
- Popa, A., 2022. From Angustia to Cumidava. The eastern Frontier of Roman Dacia and the mountain passes in the area of the Curvature Carpathians (I), in V. Sîrbu et al (eds.), *Hidden Landscapes. The Lost Roads, Borders and Battlefields on the South-Eastern Carpathians*, 241-256.
- Popa, R., 2014. Kreuzritterburgen im Südosten Transsilvaniens, in D. Marcu-Istrate, A. Ioniță (eds.), *Radu Popa. Studii și Articole (I)*, Cluj-Napoca: Editura Mega, 333-338, first published in IBI Bulletin, 47, 1990/91, 107-112.
- Popovici, B.F., 2011. Cetatea dinaintea cetății Bran. O poveste a poveștilor, *Astra Brașov*, S.N., 2 (45), 3-4, 72-77.
- Roth, H., 2013. Kronstadt – eine Gründung des Deutschen Ordens?, in K. Gündisch (ed.), *Generalprobe Burzenland. Neue Forschungen zur Geschichte des Deutschen Ordens in Siebenbürgen und im Banat*, Köln–Weimar–Wien, Böhlau Verlag, 99-105.
- Rusu, A.A., 2005. *Castelarea carpatică: fortificații și cetăți din Transilvania și teritoriile învecinate: sec. XIII-XIV*, Cluj-Napoca: Ed. Mega.
- Rusu, A.A., 2013. Die Burgen des Deutschen Ordens im Burzenland. Zu hohe Erwartungen an eine Forschungsfrage?, in K. Gündisch (ed.), *Generalprobe Burzenland. Neue Forschungen zur Geschichte des Deutschen Ordens in Siebenbürgen und im Banat*, Köln–Weimar–Wien, Böhlau Verlag, 79-94.
- Rusu, A.A., 2019. *Castelul și spada. Cultura materială a elitelor din Transilvania în evul mediu târziu*, Cluj-Napoca: Ed. Mega.
- Rusu, A.A., 2020. *Dicționar de castelologie*, Cluj-Napoca: Editura Mega.
- Rusu, A.A., 2022. *Râșnov, arx suprema. Studii istorice și arheologice privitoare la cetate*, Cluj-Napoca: Editura Mega.
- Sîrbu et al. 2021. Unhiding Forested Landscapes. The archaeological index of south-eastern Carpathians, *Journal of Ancient History and Archaeology*, 8, 2, 190-201.
- Sófalvi, A. 2014. Határvédelem a Székelyföldön Bethlen Gábor korában. In Dáné, V. et al. (eds): *Bethlen Erdélye, Erdély Bethlene. A Bethlen Gábor trónra lépésének 400. évfordulóján rendezett konferencia tanulmányai*, Kolozsvár: Erdélyi Múzeum Egyesület, 675-686, 712-716.
- Sófalvi, A., 2018. A Barcaság határai és 13. század eleji településképe a Német Lovagrend adományleveleiben. In Dóra Mérai (et al., eds.), *Genius loci. Laszlovszky 60*, Budapest: Archaeolingua Foundation, 60-63.
- Sófalvi, A., 2019. Weapon finds from King's Rock Castle, *Dacia N.S.*, 62-63, 2018-2019: 287-310.
- Sófalvi, A., 2021 a. Raport de cercetare arheologică preventivă. Podu Dâmboviței – Cetatea Oratei (com. Dâmbovicioara, jud. Argeș). 31 August 2021.

- Sófalvi, A., 2021 b. The Karácsonkő castle: an outpost of the eastern side of the Carpathians, *Hungarian Journal*, 10, 4, 27-38.
- Sófalvi, A., 2023. Castles beyond the Eastern Borders of the Medieval Kingdom of Hungary – Expansionism from the Early 13th Century to the Mid-14th Century, in *Fortification and Sovereign Powers - Fortified Architecture and Control of Territories (1180-1340), Acts of the Carcassonne conference, 18 to 21 november 2021*, Villemur-sur-Tarn: Loubatière, 82-95.
- Sófalvi, A., Feld, I., 2020. Die Burgenbautätigkeit des Deutschen Ordens im Burzenland, *Zeitschrift für Burgenforschung und Denkmalpflege*, 1, 11-18.
- Spinei, V., 1982. *Moldova în secolele XI-XIV*. București: Ed. Științifică și Enciclopedică.
- Spinei, V. 1992. Circulația unor piese de cult în regiunile românești nord-dunărene în secolele X-XVII, *Arheologia Moldovei*, 15, 153-175.
- Spinei, V., 2008. The Cuman bishopric – genesis and evolution, in F. Curta (ed.), *The Other Europe in the Middle Ages. Avars, Bulgars, Khazars, and Cumans*, Leiden, Boston: Brill, 413-456.
- Stoicescu, N., 1980. *Constituirea statelor feudale românești*, București: Ed. Academiei.
- Suciu, C., 1966. Dicționar istoric al localităților din Transilvania (vol. 1, A-N), București: Editura Academiei.
- Suciu, C., 1968. Dicționar istoric al localităților din Transilvania (vol. 2, P-W), București: Editura Academiei.
- Ștefan, D., Ștefan, M., 2018. Teledetecție și arheologie montană în Carpații de Curbură. Fortificațiile de la Vârful lui Crai, *Istros*, 24, 219-288.
- Ștefan, M., Ștefan, D., Buzea, D.L., 2019, Noi cercetări asupra fortificațiilor de la Teliu, jud. Brașov, *Angustia*, 23, 229-256 .
- Teodor, E.S., 2021. Digging the Frontier, tackling the Epidemics. Researches on Bran Pass, *Cercetări Arheologice*, 28, 2, 361-401.
- Teodor, E.S., 2022 a. A frontier road crossing the Southern Carpathians. The upper part of Limes Transalutanus, in V. Sîrbu et al (eds.), *Hidden Landscapes. The Lost Roads, Borders and Battlefields on the South-Eastern Carpathians*, 279-334.
- Teodor, E.S., 2022 b. A new Roman post on Limes Transalutanus at Oratea, *Cercetări Arheologice*, 29, 1, 155-184.
- Teodor, Bolba 2022. Mountain Passes and Battlefields: Rucăr-Bran corridor, in V. Sîrbu et al (eds.), *Hidden Landscapes. The Lost Roads, Borders and Battlefields on the South-Eastern Carpathians*, 387-429.
- Teodor, E.S., Dumitrașcu, E., 2019. Excavations at the Eastern Gate of the Băneasa Roman Fort, *Cercetări Arheologice*, 26, 103-124.
- Toda, O., 2013. Evidence on the engineering and upkeep of roads in late medieval Transylvania, *Annales Universitatis Apulensis, SH*, 17, 2, 173-200.
- Țentea, O., Călina, V., Manea, I., 2022. Drumul și castrul roman de la Copăcenii (com. Racovița, jud. Vâlcea). reevaluarea recentă a unor monumente uitate, *Cercetări Arheologice*, 29, 2, 557-572.
- Țiplic, I.M., 2002. Considerații cu privire la liniile întărite de tipul prisăcilor din Transilvania (sec. IX-XIII), *Acta Terrae Septemcastrensis*, 1, 147-164.
- Țiplic, I.M., 2006. *Organizarea defensivă a Transilvaniei în Evul Mediu (secolele X-XIV)*, București: Ed. Militară.
- Țiplic, I.M., 2007. *Istoria fortificațiilor medievale timpurii din Transilvania (927/934-1257) între mit, naționalism și arheologie*, Iași: Institutul European.

Lista ilustrațiilor

- Fig. 1. Carpații de Curbură și trecătorile apropiate de Brașov. Model teren SRTM-30. Alb: trecători montane istorice; galben: trecători utilizate în epocă modernă.
- Fig. 2. Coridorul Rucăr-Bran și unele locuri menționate în text. Model teren SRTM-30.
- Fig. 3. Drumul montan care traversează Branul și amplasarea fortificațiilor recent descoperite (linii albastre). Date LiDAR, rezoluție 0,5 m.
- Fig. 4. Cetățile de la Măguricea Branului. Date LiDAR, shader HSV, cu punctele de reper principale.
- Fig. 5. Secțiune altimetrică prin cetatea estică (de la sud la nord). Model teren la 0,5 m.
- Fig. 6. Zidul sec la sud-vest de cetatea estică, vedere spre est.
- Fig. 7. Secțiune transversală peste fortificația centrală, model teren la 0,5 m.
- Fig. 8. Secțiune longitudinală prin fortificațiile vestice și centrale, model teren la 0,5 m.
- Fig. 9. Primul hartă militară austriacă (1769-1773 pentru Transilvania), zona de VNV de Castelul Bran. Săgețile albe evidențiază posturile grănicerilor.
- Fig. 10. Fotografie luată de pe cetatea estică, vedere spre sud.
- Fig. 11. Săpăturile arheologice de pe fortificația estică. Fișier LiDAR, rezoluție 0,5 m, evidențierea pantelor („slope shader”).
- Fig. 12. Secțiunea arheologică 1, ortofotografie (rezoluție 0,5 mm) și secțiune altimetrică pe modelul-teren (rez. 2 cm), proiecție UTM 34.
- Fig. 13. Secțiunea 1, ortofotografie (rez. 0,5 mm), mod ortogonal, vedere în perspectivă, descriind principalele elemente ale construcției defensive.
- Fig. 14. Secțiunea 1, studiu de vizibilitate, restituire. Model teren la rezoluția de 0,5 m. UTM 34.
- Fig. 15. Secțiunea 2, model teren (rez. 0,3 m), ortofotografie (rez. 0,8 mm) și secțiune altimetrică, UTM 34.
- Fig. 16. Cetatea estică, secțiune transversală prin „Camera 2”, date comparative din fișierul LiDAR (rez. 0,5 m, albastru) și modelul-teren obținut prin fotogrammetrie (rez. 1,2 cm, roșu), UTM 34.
- Fig. 17. Fotografie luată pe cetatea estică, spre „Camera 3” a carierei, la sfârșitul lunii octombrie 2021, dinspre sud-vest. În prim-plan - șanțul dintre zidul exterior și cel interior.
- Fig. 18. Fotografie luată pe cetatea estică, în 30 octombrie 2021, orientare nord. În prim-plan - întreruperea zidului interior, indicând foarte probabil o poartă; în fundal - stânca ce separă „camerale” 2 (în dreapta) și 3 (în stânga). Acesta este locul unde ulterior a fost proiectată Secțiunea 5.
- Fig. 19. Plan și secțiune altimetrică (de la sud spre nord) a Secțiunii 5. Ortofotografie și modelul digital al reliefului cu rezoluție mare (0,5 mm pentru ortofotografie și 2 mm pentru DEM), orientare nord. Secțiune altimetrică a terenului înainte de săpătură (albastru) și după cercetare (roșu). Proiecție UTM 34.
- Fig. 20. Ortofotografie a profilului estic din Secțiunea 5. În afara secțiunii arheologice a fost curățată o porțiune a șanțului palisadei.
- Fig. 21. Fotografie luată în Secțiunea 5, cu orientare est, de-a lungul intrării și șanțului palisadei.
- Fig. 22. Inscriptii pe stâncă, cetatea estică, coridorul dintre intrare și „Camera 2”. Ansamblu și detalii.
- Fig. 23. Panta și poiana aflate la sud de cetatea estică, unde s-au adunat pietre rostogolite din fortificație. Panta are o înclinare medie de 29° (sau 55,4%).
- Fig. 24. Cetatea estică, palisada nordică, Secțiunea 3, ortofotografie cu orientare nord, rezoluție 1 mm; secțiune altimetrică (linie galbenă) pe modelul terenului fotogrametric, rezoluție 3 mm. Proiecție UTM 34.
- Fig. 25. Fortificația estică, palisada nordică, Secțiunea 3, fotografia profilului de vest.
- Fig. 26. Secțiuni arheologice pe fortificațiile centrală și de vest.
- Fig. 27. Fortificația centrală, Secțiunea arheologică 4. Desen al profilului nord-vestic, cu restituirea principalelor elemente de construcție; ortofotografia secțiunii, rezoluție 1 mm.
- Fig. 28. Fortificația centrală, S. 4, nor de puncte, mod ortografic, perspectivă de la nord-vest. Au fost adăugați stâlpii palisadei.
- Fig. 29. Fortificația centrală, secțiune altimetrică de-a lungul S. 4, date LiDAR, rezoluție 0,5 m. Proiecție UTM 34. Studiul vizibilității.
- Fig. 30. Al doilea fișier LiDAR, rezoluție 25 cm, pe fortificația răsăriteană.

Fig. 31. Al doilea fișier LiDAR, rezoluție 25 cm, pe complexul vestic de fortificații.

Fig. 32. Cetatea de vest, Secțiunea arheologică 6, fotografie spre profilul nordic. Miră alb-roșie la 1 m.

Fig. 33. Cetatea vestică, Secțiunea 6, desene și interpretare.

Fig. 34. Cetatea vestică, Secțiunea 6, detaliu cu urma palisadei pe sol, în apropierea profilului nordic.

Fig. 35. Cetatea vestică, Secțiunea 8, ortofotografii, vedere verticală și profile (cel sudic în oglindă).

Fig. 36. Cetatea vestică, Secțiunea 8, fotografie spre profilul nordic, detaliu din partea inferioară.

Fig. 37. Cetatea vestică, secțiune altimetrică a terenului de-a lungul secțiunilor arheologice 6 și 8. Fișier LiDAR, proiecție UTM 34. Studiul vizibilității.

Fig. 38. Cetatea vestică, fotografie realizată în colțul nord-estic, în șanțul defensiv.

Fig. 39. Complexul de fortificații vestice, palisada de lângă poartă. Secțiunea arheologică 7, profil sud-vestic, ortofotografie.

Fig. 40. Complexul de fortificații vestice, palisada lângă poartă. Secțiunea 7, fotografie realizată spre profilul nord-estic.

Fig. 41. Artefacte din săpătură: a) cioburi de oglindă, S.1, șanțul palisadei; b) artefact din aliaj pe bază de cupru, S.1, partea de nord; c) cui de fier din S.4, la palisada exterioară; d) cui de lemn, în același loc; e) lamelă de fier cu nit, în același loc; f) scoarță de copac de la T.4, șanțul palisadei. Toate la scara 1:1.

Fig. 42. Artefacte moderne: a) scoabă; b-c) fir de sârmă răsucit; d) clip en-bloc, cartușe pentru Mannlicher M93; e-f) cuie industriale; g) cartus nefolosit pentru Mannlicher M93; h) cui pentru șindrilă; i) nasture metalic de cămașă militară; j) moneda românească, 1924; k) cartuş mic de vânătoare; l) glonț de vânătoare Brenneke (pentru mistreți, după cel de-al doilea război mondial); m) suport pentru lumânări; n) cartus folosit pentru Mannlicher M93.

Fig. 43. Harta Țării Bârsei, cu localizarea siturilor menționate în text. Suport grafic SRTM-90.

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