
A NEW ROMAN POST ON *LIMES TRANSALUTANUS* AT ORATEA

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REZUMAT: O NOUĂ FORTIFICAȚIE DE PE *LIMES TRANSALUTANUS* DE LA ORATEA

Analiza etapelor de marș de pe sectorul montan al *Limes Transalutani* a evidențiat distanța foarte mare dintre castele de la Jidova și Drumul Carului (40 de km de drum greu). O eventuală soluție era platoul de est al cetății de la Orateea, pentru care existau oricum suspiciuni mai vechi, precum un val remarcat de G. Tocilescu spre prăpastie, în 1905. Atât analiza preliminară a datelor LiDAR, cât și vizita pe teren au confirmat că ipoteza este validă și este necesară o săpătură de evaluare.

Cercetarea de teren s-a făcut în două campanii scurte (din 2020 și 2021), confirmând existența unei fortificații, dar mai mult de atât, chiar existența a trei faze, databile în secolele II și III. Alte secțiuni punctuale au verificat și alte ipoteze de lucru, precum existența unui val pe marginea șanțului de apărare al fortificației medievale (ipoteză infirmată), dar și căutarea unui drum de acces spre și de pe platou. Săpătura a confirmat existența unei locuiri (militare, desigur) pe platou, precum și a unui drum care accesa platoul, legând platoul atât de Rucăr, spre sud, cât și de Pasul Bran, spre nord. Adevărata surpriză a fost nu drumul roman – a cărui prezență fusese anticipată – ci continuitatea de uz până în sec. XVI. Acesta a fost deci drumul care deservea cetatea medievală, pe toată durata sa de funcționare. Abia după ce fortificația a fost părăsită s-a schimbat ruta comercială pe varianta de vest, cunoscută istoricilor de multă vreme.

ABSTRACT:

The departure point was the observation that the frontier road is stretched, distances between two Roman forts being greater than normal; the worst is the case Jidova to Drumul Carului, a 40 km travel over a very difficult terrain. As an intermediary station was compulsive, the first try was the eastern plateau from Orateea (a medieval citadel), for which older hunches were known, as a rampart at the edge of the precipice, seen by Grigore Tocilescu in 1905. Both analysis of LiDAR data and a fieldwalk have strengthened the hypothesis.

Evaluation excavations took place in two short campaigns from 2020 and 2021, not only proving a palisade, but stating three phases of construction, first in the early second century and then other two in the first half of the third century. Other trenches checked also other hypotheses, as another rampart, towards the (later) citadel, this one dismissed. The diggings confirmed a relatively dense inhabitation on the plateau, as well as the previously not known road, in both directions, connecting the isolated place with the entire mountain route. The real surprise was not the Roman road, as it was anticipated, but the fact that it stayed in use as late as the 16-th century. That was the road serving the middle ages fortification, along all its history, and not the western one, the one known until recently, but in use only in modern times.

CUVINTE CHEIE: arheologia peisajului, arheologie montană, LiDAR, palisadă, drumuri

KEY WORDS: landscape archaeology, mountain archaeology, LiDAR, palisade, roads

Introduction

Current research was accomplished within the frame of the HiLands Project,¹ which is a mountain archaeological project. Meant to improve the knowledge about highlands and essentially based on LiDAR data, it is covering a relatively large part of the Carpathians' chain, from the Rucăr-Bran Pass in west to the Ghimeș Pass in east.

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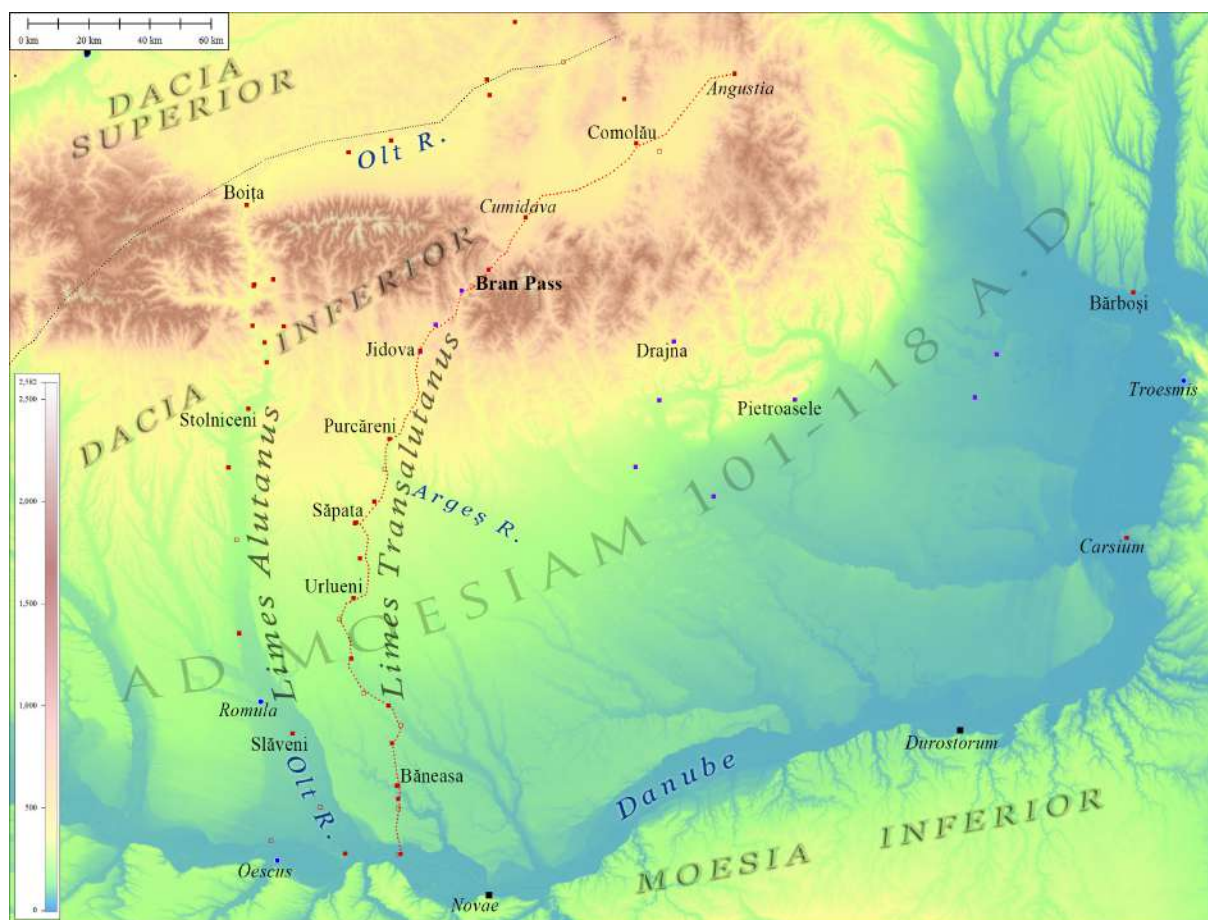


Figure 1. Map of the south-eastern Roman province Dacia. Legend: black squares – legionary garrisons; purple – Roman forts from the early 2nd century; red square – Roman forts from the 2nd and 3rd century; red empty squares – uncertain forts; blue circles – Roman towns; red dotted line – the road along Limes Transalutanus.

The westernmost part of it is following a line known in literature as *Limes Transalutanus*,² which felt in my responsibility, due to previous activity.³

After the sudden disappearance of the conqueror, Emperor Trajan, the Roman border north of the Danube was withdrawn from the last bent of the river (near modern Galați city) to the Lower Olt River, probably in 118 AD. All the eastern side of Wallachia (known also as Greater Wallachia, Rom. *Muntenia*) stood in *barbaricum* the rest of the second century AD (Figure 1). The border near Danube was pushed back eastward sometimes at the threshold of the third century, on a line connecting, relatively straight, the eastern side of the Olt River embouchure and the Bran Pass. Used previously as a communication route within the Dacian-Roman wars,⁴ it was fully remade in the early third century,⁵ probably on the same path, with a new function, as a frontier road.

It is worth mention here, on brief, some of the conclusions drawn after the first project was done, in 2017.⁶ *Limes Transalutanus* is not only the latest Roman frontier in Europe, but also a ‘weird’ one, from many points of view. The forts are relatively few and relatively far from each other, the given garrison being about half in comparison with other frontiers (made in the second century). The forts are not lined to the defended border (with exceptions,

² For an almost complete map, from Danube up to Comolău (one stop before *Angustia*, on Oituz Pass), see Teodor and Ștefan 2014, 33, Fig. 1. For the map of the plain section of the frontier, between Danube and Argeș River, see Teodor 2018, 185, fig. 1.

³ Between 2014 and 2017 I have managed another research project, named, on short, exactly like that, *Limes Transalutanus* (see <http://www.limes-transalutanus.ro/>). That one was dealing with the Roman frontier only between Danube and Argeș River (the limit of the plain area), due to its large dimensions (about 360 km from Danube to Oituz Pass, on Eastern Carpathians).

⁴ As obviously proved by the forts from Jidova (the small fort, see Petolescu and Cioflan 1999) and Rucăr (see Bogdan Cățânciu 1974 and 1981, 8). For an outlook regarding Jidova and Rucăr, see also Teodor 2022, second section. As for the lower part of the frontier, crossing the plain, things are not proved satisfactory, although circumstantial arguments could be provided. A recent report for works at Jidova in Petolescu, Matei-Popescu, and Dumitrescu 2021.

⁵ As showed by the fact that, at least apparently, none of the forts build in the second century were reused in the third century.

⁶ Teodor 2017.

as Gresia), but located several hundred meters behind, especially on the northern segment of the plain, in positions rather stealth from the frontier line, seeking natural advantage and discretion. The border itself is not even: the lower third is crossing the open field, having a continuous palisade and watch-towers; the central part is running along river valleys (Vedea and Cotmeana) on the high western bank (about 20 m), used as a *ripa*, but nothing else, except the forts; the northern third is crossing again the plain, but the setup is different, a palisade or watching towers being made only outside the antique forests.⁷ It is obvious that the designer had a very good understanding of the regional geography and chose to use any possible aid from the nature. Nature could be helpful, but not that resourceful; the construction stone was completely missing all the way from Danube to Argeş River, except pebbles, but even those not everywhere.⁸ Still worse, on the southern sub-section the wood was difficult to provide, being reserved for essential tasks, like the border palisade, forts' circuits, barracks and other built structures. Such a shortage of wood had yet consequences: in a better studied case we could see that roof tiles are almost completely missing, as well as the most common artefact on a Roman archaeological site: the construction nails.⁹ Isn't this weird?

Crossing the Argeş Valley the Roman frontier changed the landscape: no more flat plain, the road progressing northward in narrow valleys, with sides taller and taller, in a fully forested environment (even today...). Would we expect here a 'normal' frontier?

An analysis of the departure point for the new project – HiLands – highlighted the main problem of the mountain section of the frontier,¹⁰ the same seen over the plain: the relative lack of garrisons, adding the modest dimensions of some. The length of the entire mountain section of the frontier, from Piteşti to Râşnov, is 107.5 km, counting along only four forts (Figure 2).¹¹ The distances between them are big; the last station length, between Drumul Carului and Râşnov (*Cumidava*) is 23.51 km on the path, having the average declivity of 2.7° and an equivalent distance of 33 km.¹² A more lengthy distance is between Purcăreni and Jidova, summing 33.5 km, an average declivity of 3° and an equivalent of 48.5 km (on a flat surface, see Table 1). For a pedestrian troop this is at the very limit for a one day march, asking for about a 10 hours walk, or more.¹³ It remains the station between Jidova and Drumul Carului, in the middle, counting 40 km on a rough terrain, with an average declivity of 7.2°, containing yet at least three very difficult stretches, on slopes greater than 10°, summing more than 16 km. The equivalence of that distance on a flat terrain is 83.4 km, too much for any pedestrian soldier from any time.¹⁴

Table 1. Distances along the route *Limes Transalutanus* in the mountain area

distance	km	declivity	equiv.	hours
Piteşti to Purcăreni	10.40	1.98°	13.49	2.7
Purcăreni to Jidova	33.50	2.99°	48.50	9.7
Jidova to Oratea	31.32	6.41°	61.46	12.3
Oratea to Drumul Carului	8.77	10.03°	21.97	4.4
Drumul Carului to Râşnov	23.51	2.70°	33.05	6.6

⁷ But what a forest, low and marshy, stretching one hundred km eastward! I tried to understand better the antique situation from the Romanian Plain in Teodor 2018.

⁸ At least on section of the road, south of Roşiorii de Vede, was made entirely from clay (Teodor 2016).

⁹ Băneasa fort, the largest of the entire frontier, commanding the most southern third of the plain section (see Teodor, Dumitraşcu and Ştefan 2017, 91-95). One single building seems covered in tiles – the eastern gate of the second phase, excavated in 2021 (not published yet) – and most of them are brought from the Olt River garrisons. But this is the exception, as tiles are missing from surface over the rest of the fort.

¹⁰ Accomplished in October 2020, it is still not published (expected as Teodor 2022).

¹¹ And a fifth, only presumed, at Piteşti.

¹² The equivalent distance is about 'how long it feels'. The calculation is described in Teodor 2022, note 89.

¹³ As the militaries of the third century had not to entrench themselves in night camps, the distance was feasible.

¹⁴ Giving here only one of the many standards, the distance between two *mansionis* should be not greater than 35 km (on flat ground, see Knapton 1996, 26). The conditions for military and civilian mobility could not be very distinctive and any road, including a *limes* road, was used by both military and civilians. Therefore the night stops could not exceed 35 km along the route.

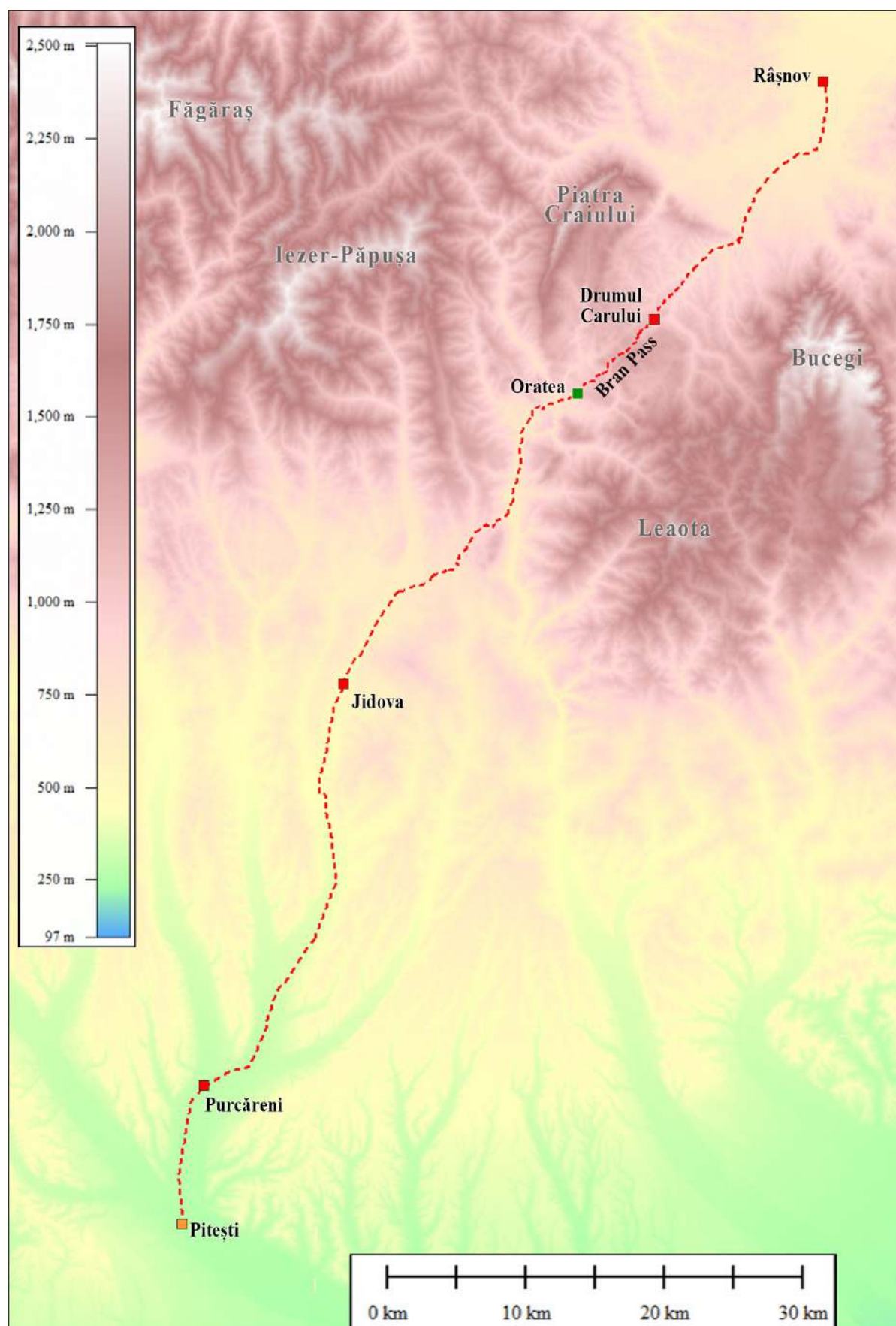


Figure 2. The mountain section of Limes Transalutanus. Third century Roman forts along the frontier road. Red squares: well documented fortifications; orange: a fort dismantled before a complete documentation; green: Roman station along the road.

First thing to check, from the very beginning, was the site at Oratea, at the very gate of the Bran Pass, at the southern entrance. The place is well known due to the presence of a small but daring medieval fortress, made on an isolated cliff, at almost 1000 m altitude. There are three sets of excavations at the place. The first, led by Grigore Tocilescu in 1905, recovered lots of artefacts – especially iron implements and weapons – but not with archaeological contexts. The second team, led by Alexandrina Alexandrescu, dug in 1968-1970, left no detailed reports, and we have to use only a short overview of the works, made by an archaeologist of the team.¹⁵ As the oldest coins found on the site were minted by the ruler Mircea cel Bătrân (Mircea the Elder), the construction time was supposed towards the end of the 14th Century. Such a supposition was recently contested on the ground of an inventory analysis, some arrowheads being more likely of the 13th century,¹⁶ therefore the building time being lowered to the age of Teutonic presence in south-eastern Carpathians (1211-1225).¹⁷ As for the end of the fortress, it is less contentious, being sometimes along the 16th century.¹⁸

Another excavation has been performed recently, in the summer of 2021, led by Sófálvi András, in order to prepare restauration plans. These works are not published yet. Several trenches were made inside the fort and against the outer walls, in different area of my own diggings from the same summer (but not in the same time).

An important detail of the campaign from 1968-70 is that two long trenches were made crossing the so called Eastern Plateau, beyond the defensive ditch of the fort. The test diggings did not provide additional information for middle ages, stating nonetheless the existence of a ‘civilian settlement’ of the third century AD, ascribed to the Chilia-Militari culture.¹⁹ Of course, speaking of ‘civilians’ at the very line of the Roman frontier, in an obvious strategic position, is a bit peculiar and should be questioned. This is the thing I did from the start.

Field research at Oratea

The place where the Oratea citadel is located is a fort by itself. The old road, coming from Rucăr and heading Bran Pass, was crossing a bucket-like depression, 2.4 km wide, with steep edges. There are only two usable exits: one towards southwest, Posada Pass, and one towards northeast, Oratea itself, but none easy. Looking around one can see only traps (Figure 3). At the southern end there is Dâmbovița Gorges, a perfectly wild corridor bordered by 200 m high cliffs, never used by people. The same river breaks the mountain on the opposite side of the depression, making another gorge, almost as bad, driving directly to Făgăraș Mountains.²⁰ The northern ‘exit’ is Dâmbovicioara Gorges, two km long, almost 200 m high and very narrow, not wider than the rivulet itself, where no footpath existed before the First World War.²¹ At the south-eastern side there is Cheia River Valley, meaning, in Romanian language, exactly a gorge; it is the only other road heading Transylvania, at the bottom of a long valley, still not in the touristic use, being difficult. This depression, where today lays Podu Dâmboviței village, is the most likely trap where the Hungarian knights of Carol Robert de Anjou were defeated in the three days battle from 1330.²²

After crossing the depression, the traveller going northward is facing a mountain wall several dozens meters high, which is the Oratea precipice (Figure 4). Looking closer to the terrain model from the Figure 5, it appears to be three pathways going up. That numbered 1 is present on all known maps from the late 18th and 19th century, as the main road driving Transylvania; it is also mentioned as the road serving the citadel on all literature one can find. What is puzzling here is the fact that between this road and the fortress on the cliff there is absolutely no mark of use, no connection between the ‘fortress road’ and the fortress itself. To be sure, such a connection is difficult anyway, as the fort was made on a 40 m high cliff, measured on the western side (Figure 6), and there are only two possibilities: a connection from southwest, on a slope with an average value over 30°,²³ or a connection taking it around the citadel, going upstream Ocățilior Valley and reaching the Eastern Plateau, but such a trail is not visible.²⁴

¹⁵ Cantacuzino 2001, 161-175. The book from 2001 is an edited version of another one, written 20 years before and having the same name. For a sketch of the plan see Cantacuzino 2001, 162, fig. 20.

¹⁶ Sófálvi 2019, 296, fig. 9/1-2, 301 with fig. 10/1-4, the former being the most interesting.

¹⁷ Sófálvi 2019, 304.

¹⁸ Cantacuzino 2001, 166; Sófálvi 2019, 304, presumably in the second quarter.

¹⁹ Alexandrescu and Păunescu 1971. They did not mention the name of that culture, as it was still not defined, but the set of found analogies drive towards it.

²⁰ There is yet a footpath, from the upper valley, reaching at the springs of Bârsa River, between Piatra Craiului and Făgăraș Mts., used rarely for military purposes, and only by pedestrian troops, as, for instance, in 1690 and in 1916.

²¹ As stated by the MDGR, vol. 3, entry Dîmbovicioara.

²² Teodor and Bolba 2022, notes 104 and 105.

²³ All figures taken from Path Profile Details (Global Mapper), on a high resolution terrain model (0.3 m).

²⁴ Architect Andrei Baci says such a trail exists, on the northern bank of Ocățilior Valley, the hypothesis following to be put

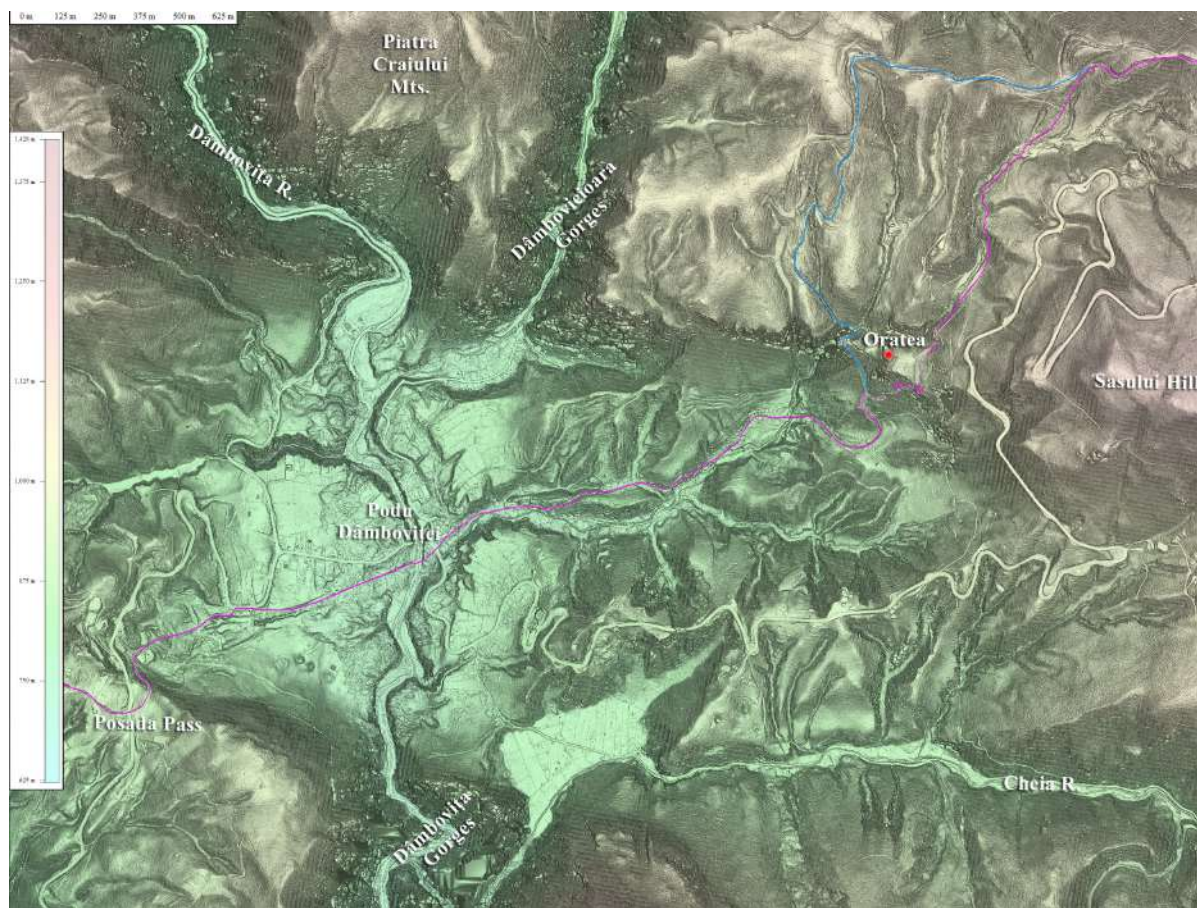


Figure 3. The depression at Podu Dâmboviței and the old route (magenta). Blue line for a later version.



Figure 4. Drone snapshot at Orateia citadel, facing southwest: Orateia precipice with the fortress (at right), Podu Dâmboviței village (middle) and Posada Pass in the background.

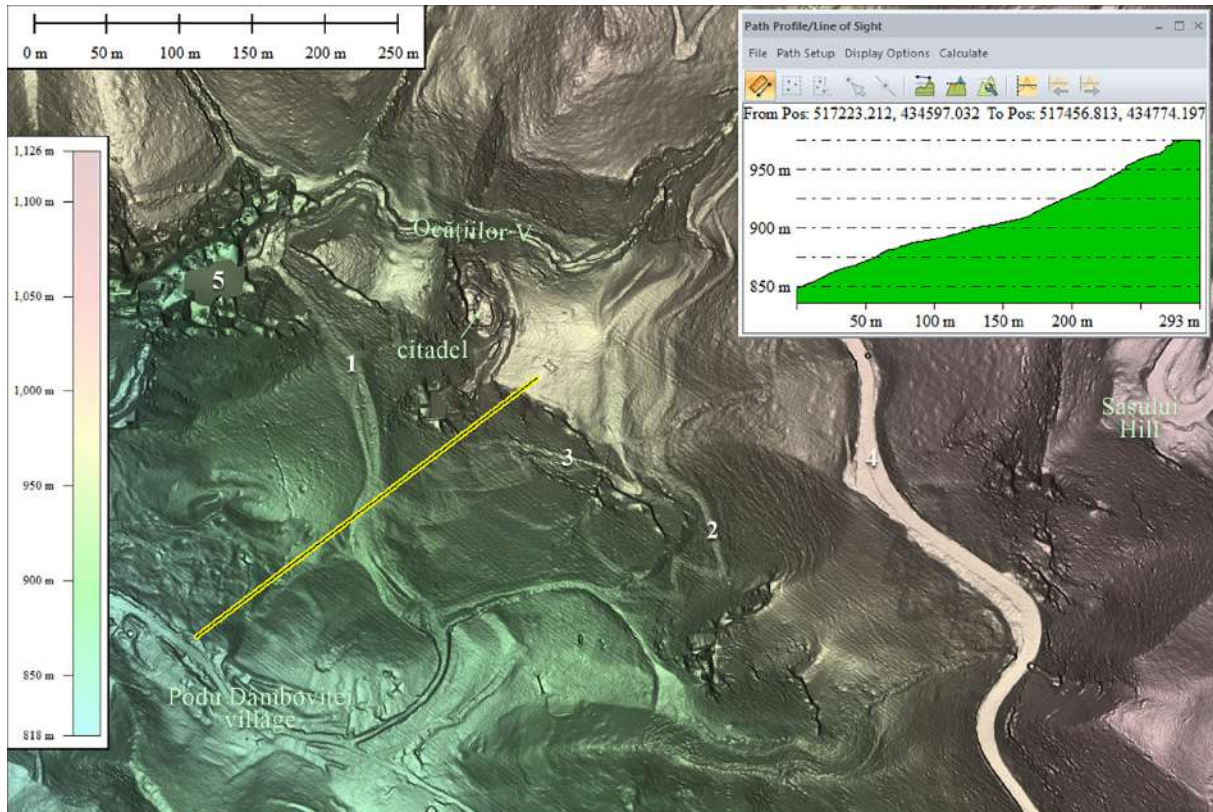


Figure 5. Digital elevation model made out of LiDAR data (2019). Old access pathways uphill (1-3); the modern road, made in 1880s (4); no LiDAR data (vertical cliffs, 5). Coordinates in Stereo 70 projection.

The path noted 2 at the Figure 5 is interesting and seems feasible at the first sight. At a closer look, it goes straight against the level curves, which is not typical for a road into the mountains; still worse, the average declivity is almost 30°, which is suitable for climbers, but not for heavy traffic. In fact, we found out at the place what that mark is: a path followed by cows for grazing, during the warm season.

At the Figure 5 there is another path, numbered 3, well visible only on the upper part of the hill. That part has an average slope of 13.58°, which is difficult for a cart, but not impossible. This is comparable with the average tilt of the western road, 14.23°,²⁵ about which we know for sure that it was used for heavy transportation.²⁶ The lower part of the path numbered 3 is not well visible, but the route can be guessed, as we can see a typical zigzag road meant to deal with a perpendicular tilt of almost 40°, as it measures above the last straight line. More, the terrain model is suggesting that it had, once, some variants. The lower part of that road was levelled by rolling stones on the slope, disappearing from the sight. That was my working hypothesis for a road serving the ‘civilian’ settlement from the Eastern Plateau.

But how ‘civilian’ could be a strategical site from the frontier? The altimetric section displayed at the Figure 7 shows a raised edge of the plateau, which is strange giving the fact that the altitudes on the plateau are descending from northwest towards southeast. Such impressions gained at the computer screen were later confirmed with bare eyes on the field. Could we have there a palisade?

Test excavations

Excavations were made in two short campaigns (13-18 July 2020 and 16-27 August 2021), with a small team (4 workers in 2020 and only 3 in 2021). As extended diggings were excluded from the start, the works were supposed to only solve some questions: is there a palisade at the edge of the plateau? Was that palisade extended also east

on test, by excavation (personal communication).

²⁵ Measured for the middle third of the uphill. The upper third is still worse, having areas higher than 16°.

²⁶ It is not only marked on the maps of the 19th century as the main road connecting Wallachia and Transylvania, but it has wheels marks on the rock, mainly in the upper part. I will give details further.

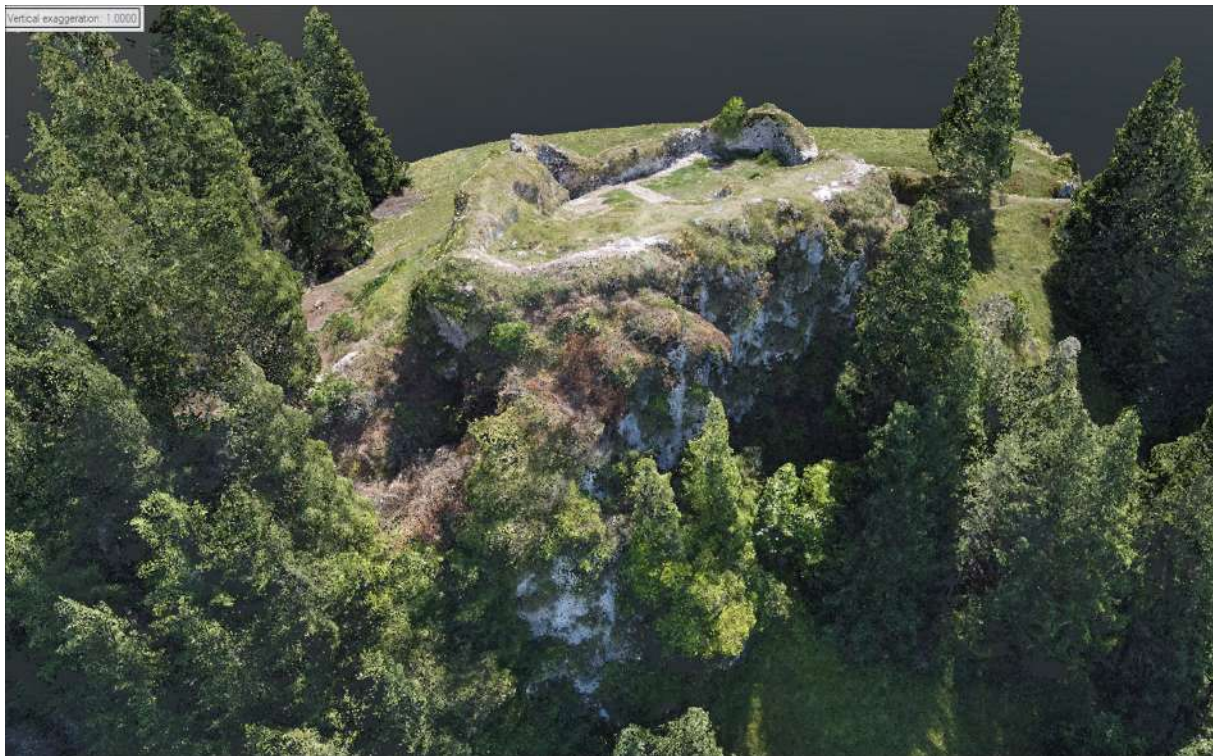


Figure 6. Fortress at Oratea, point cloud, view from northwest.

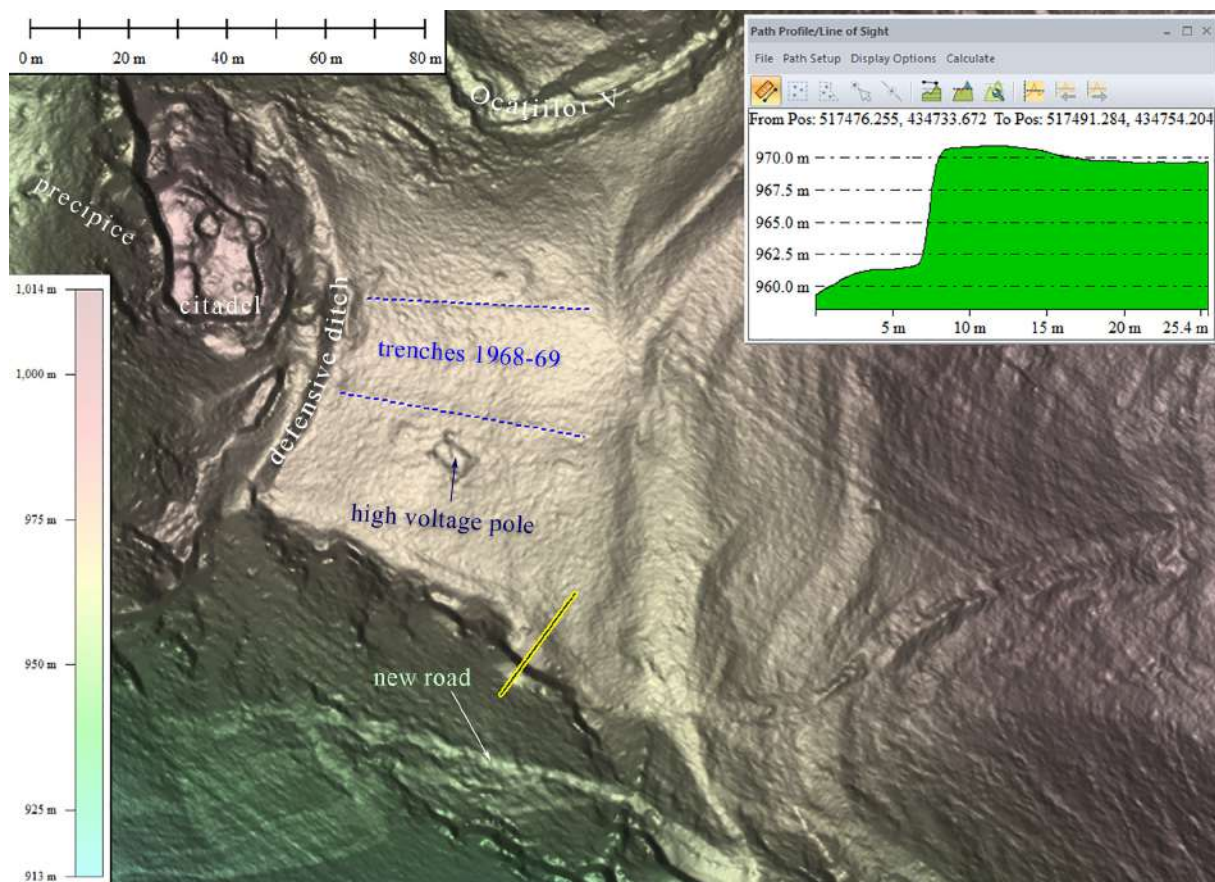


Figure 7. High resolution terrain model (0.3 m) for the citadel and the Eastern Plateau. It is also given one altimetric section for the edge of the plateau.



Figure 8. Orthophotography (16 Aug. 2021, res. 4 cm) depicting the citadel and the Eastern Plateau, with the location of the test-trenches. Orientation towards north.

of the defensive ditch?²⁷ Is there really a road, below the plateau? If yes, then where would be the continuation towards Bran Pass (as the connection with the western road is impossible)?

As a consequence it was drawn the Trench 1 (see Figure 8), at the edge of the plateau, measuring 12 x 2 m, in a position where a rampart was quite obvious. The north-eastern part of the trench was empty, the natural rock being found immediately below the grass (Figure 9), although only a few meters towards the edge the distance from the grass to the bedrock is over one meter. It worth mention that the bedrock is almost horizontal, but the upper part of the rampart is 1.3 m higher. As the other archaeological trenches proved the same thing, that the bedrock is usually just beneath the grass, the question is how that height was achieved. There are three separate developments that drove to such a result. The lower layer of the section is made of a strongly burned adobe, proved to be a watchtower (?) set on fire. Only the top layers are connected with the palisade I was looking for, though from another phase. In order to make the reader understand the features, I have to use a photo taken against the western profile of the Trench 4, made immediately next to T.1, because this is the only section not burned (Figure 10). What one can see there is a yellowish layer corresponding to the construction of the tower (very likely aligned to an early palisade, on the right side of the picture). There are no obvious separations between this layer and the next phase, of the stone palisade, but the upper layers are definitely darker. My conclusion is that the Romans used turf to make their first palisade, because other source of clay, in the area, is missing, although the fact cannot be seen stratigraphically (as definite slices of turf).

²⁷ Between the drawings left from Grigore Tocilescu for his research from 1905 there is a sketch of a general plan presenting a 'stone palisade' facing the precipice and an 'earthwork' facing the medieval ditch (see Teodor 2022, fig. 15).



Figure 9. Photo of the Trench 1, in an early stage of work, heading north. In the close range one can see the stone edges of the palisade, the only part well preserved on the T.1. In far range – the bedrock.



Figure 10. Photo towards the upper part of Trench 4, heading west. The distance between two yellow sticks is 2 m.

At the Figure 11 one can see the plan of the Roman tower, which is not a usual one, being not square. The side near the precipice is longer, having 4.1 m,²⁸ but the other one is shorter, measuring only 2.78 m, which, very likely, is the width of the first rampart. Nonetheless, it is a building having a lot of wood above the ground, the only way such a powerful fire could be initiated. The proportions are suggesting that it was rather a platform built on top of the palisade, having very likely a roof. The burned stuff is fine and homogenous clayish adobe, down to 0.74 m deep, containing no artefacts, telling us that there was an adobe platform on which the wooden building was made. The length of the platform has been supported by wooden pillars at intervals apparently not very regular. At the inner edge, towards the plateau, the platform is standing on two (or three?) rows of pillars, at least near the north-western corner, probably in order to support a staircase.

²⁸ Possibly something more, but not much, as the place is narrow. The geometry of the cliff is not regular and it is just missing towards southeast. The trench 1 was made at the limit of the cliff.



Figure 11. Montage of two orthophotos for Trench 1 (2020) and Trench 4 (2021), in two different stages of work (on the burned area for T.1, final stage for T.4).

After the building was put on fire, the place was levelled by adding a fresh layer, very likely also turf (see Figure 12, layer C), and a new palisade was made on top, fixed by a pile of rocks (layer B). As most of them were missing within the trench 1, probably rolled off, the stone palisade was rather supposed at first, being visible only near the edges. The preservation proved to be much better in the next year, on the Trench 4, where most of the rocks were standing on place. More than that, it was then possible to define two phases of the stone palisade, as the size of the rocks was distinctive (greater on the upper layer, smaller on the lower layer). A large pole was locking the rocks on place, preventing them falling into the precipice (Fig. 12, context K); another pole, descending from the upper layer, was located about the middle of the projection (Fig. 12, context J), making the battlement alignment. Very likely another line of poles was keeping together the pile of rocks towards the plateau, but none of them have been seen in the excavation.

Near the end of the first campaign (July 2020) two other small test-trenches were made: T.2 (4.3 x 1.3 m) and T.3 (5.2 x 1.4 m). The first was crossing a spot where a road driving to the medieval fortress was suspected (see again Fig. 8). The excavation was short and quick, as below the grass we found only the bare rock, without any obvious marks of construction activities or traffic. For a change, a horseshoe was found, a typical find along medieval roads. T.3 was cut to prove that the stone palisade is present in any other place along the edge of the plateau. Again, the excavation has been short, resuming at cleaning the vegetation, as below the grass it was nothing else but stone, this time a built pile. The stone palisade is well preserved there (far better than in T.1, but similar with T.4), it is 2.5 m wide and 0.9 m high. As there was no time left to study it below, the trench was filled back.

The Trench 5 (6.3 x 1.4 m) was made at the western fringe of the plateau, in order to see if could be observed any kind of rampart or other intervention which could sustain the observation made by Grigore Tocilescu in the early

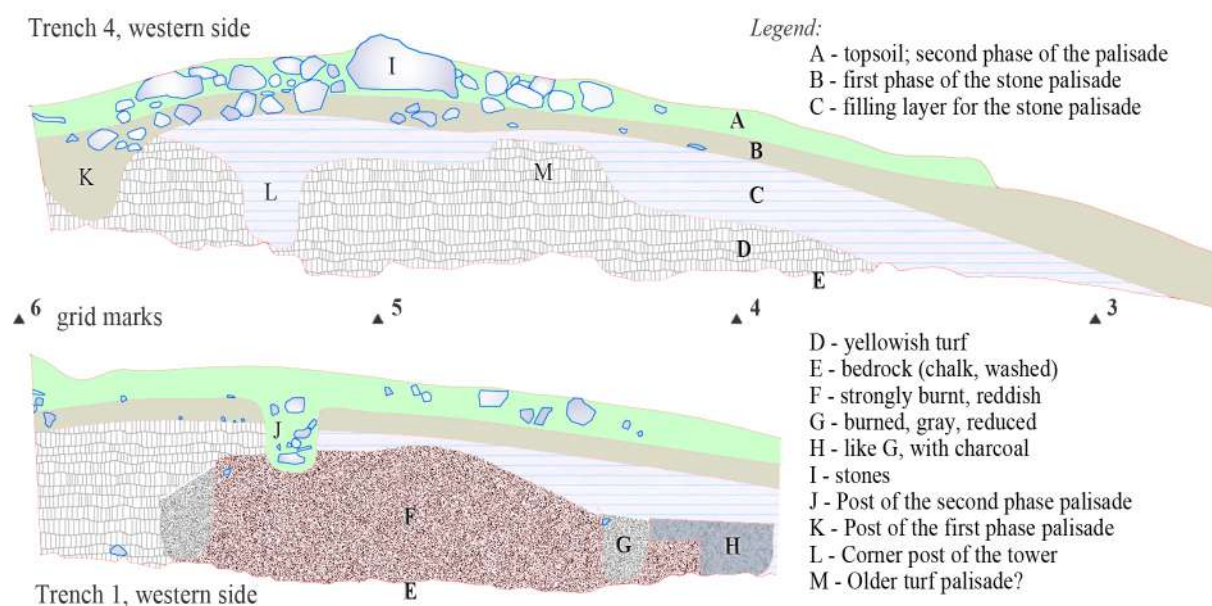


Figure 12. North-western sides of the trenches 1 (upper sequence) and 4. Grid at 2 m.



Figure 13. Photo taken at the trench 5, view towards northwest.

20th century. The answer is no. The bedrock has been found immediately below the grass, almost undisturbed (Figure 13). Shallow hollows were seen on the surface, filled with pottery sherds, broken animal bones, some

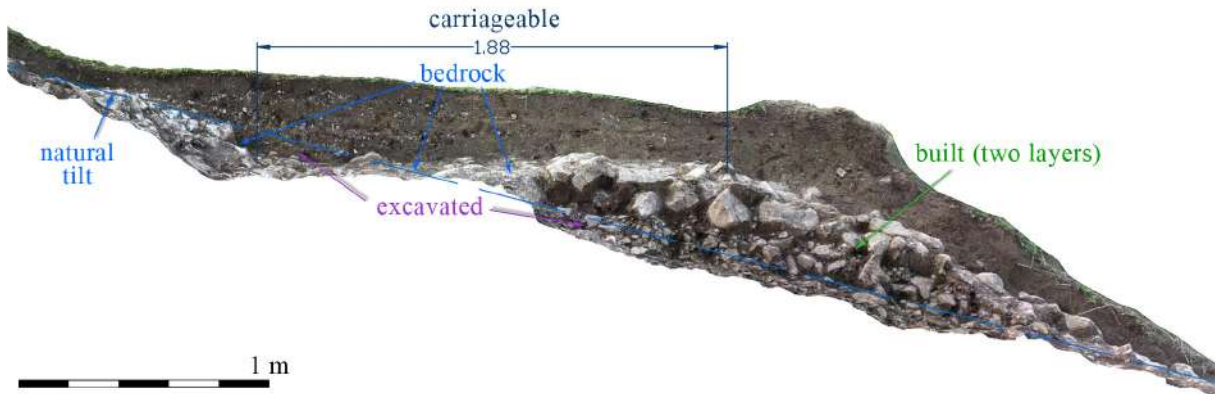


Figure 14. Trench 7, view of the south-eastern section. Photogrammetry, partial rendition (both ends are cut), depicting the Roman road.

burned stuff, very tough (fragments of a wall from a kiln made out of chalk stone), including a fibula of the third century,²⁹ the trench being probably located close to a habitation or workshop.

The Trench 6 (4 x 1.5 m) was made in the northern part of the plateau, cutting an obvious anthropic alteration of the surface. As nothing of archaeological interest could be spotted there, I finally got the idea: it is a bulldozer mark, parallel and below the power line, needed by the workers to repair it.

The newly discovered road, just below the palisade, is reaching the more or less flat terrain in the south-eastern corner of the plateau. In that place it was crossed with a trench (no. 7, 6.5 x 1.5 m, see Fig. 8). The excavation revealed works levelling a lateral tilt of 15°, by dislocating rocks from the upper part and building them at the lower part (Figure 14), including a relatively wide supporting terrace. The width of the road is only 1.88 m, which could seem too small, but it is similar with the other section, found in T.8. The new construction is made of two

²⁹ An iron fibula, badly preserved and broken to pieces, beyond typological recognition. Such iron fibulae are known in Dacia only beginning with third century (Cociş 2004, 141-142, cat. no. 1766-1770). See also Bichir 1984, 49, type 2k, plate 38/7-10, rare in central Muntenia, as well as in Roman Dacia, all poorly preserved and fragmentary.



Figure 15. Upper layers on the Trench 8.

layers, a lower one, with small rocks, and the upper one, made of relatively large ones (around 20 cm). The road benefitted surely of some repairs during the Middle Ages, as below some rocks from the upper layer we found several horseshoes and nails for them. The fact was not expected, as all the historiography considered that the citadel was served by the western road. Although no antique artefact was spotted in excavation, I am pretty sure that such a work is a Roman project, because building a terrace to support the road is an intervention requiring some engineering skills, difficult to expect within the Middle Ages, at least not here.

Making it clear where the road has accessed the plateau, coming from south, it remained to find where the road was leaving the place, heading Bran Pass, towards northeast. In order to reach this goal it was made first the test trench 6 (already mentioned), finding instead a recent anthropic intervention. The next try was T.8 (5.9 x 1.9 m, see again Fig. 8), at the north-eastern edge, following another trail, not visible on LiDAR, but visible on the ground, as a line of stone stumps above the grass. This time, no doubt, there was a road beneath the surface (Figure 15). Apparently it was a standard Roman road, slightly bulging at the centre, with large rocks (about 40 cm on length) aligned at its edges, drawing a 3.80 m width. Knowing yet the results from the Trench 7, as well as the digging from the previous year, near Fundata,³⁰ it was highly doubtful that the thing I was looking at was really Roman engineering. Another strange fact was that those large rocks were not standing firmly, therefore I decided to remove some of them.



Figure 16. Trench 8, section and plan, heading north northeast. Photogrammetry.

Legend of the layers from the section: 1 – abandon layer; 2 – latest remade of the road, Middle Ages;

3 – large stones integrated in construction; 4 raised edges (ledges) of the Mediaeval road;

5 – first mediaeval remade of the road; 6 – levelment between the first and the second mediaeval road;

7 – pebbles (sidewalk of the mediaeval road); 8 – ditches of the Roman road; 9 – Roman repair;

10 – broken part of the Roman road; 11 – the Roman road; 12 – bedrock (sandstone clay); 13 – bedrock, sandstone.

Legend of the plan: A – Roman road; B – ditches of the Roman road; C – first mediaeval remade of the road;

D – second mediaeval remade; E – ledges of the mediaeval road; F – sidewalk (pebbles); G – sandstone; H – sandstone clay.

³⁰ The Roman road studied one year before near the village Fundata, in Bran Pass, showed a paved width of 2.83 m (Teodor 2021, 388 with Fig. 25), and about 4.6 m total width, including the gutters. This is interesting, as they did not use the same standard, at only several km apart. As the width of a Roman road is considered the width of the work (including the ditches), in the case Oratea (T.8) one would have a 9 feet road (most common would be 8 feet), and nearly a 16 feet road near Fundata. The difference is to be explained by the difficulties encountered at Oratea, where they made what we could call a ‘one way road’. The width of the road, in mountains, is usually smaller than those made on a flat land, and could be as narrow as 1.5 m for the paved surface (van Tilburg 2007, 17). A 6 feet wide road through the mountains is a usual fact (van Tilburg 2007, 28, note 248 with literature).

Surprisingly – or rather not – beneath them we found horseshoes and nails fixing them, old fashioned, Middle Ages type, suggesting a remade of the old route.³¹

We kept digging, removing the upper layers and reaching a new surface, made out of small stones (no. 5 at the Figure 16), this one having the full width of 3.80 m, very likely contemporary with the large ledges. Northwest of the ledge it was found a sidewalk, made of pebbles. The flat surface of that road was not recommending a Roman road either. The thing I was looking for was below the layer 5. The Roman road was thick, as should be,³² but narrow, again, the useful width being around 1.8 m. As the bedrock was rather soft, not proper for heavy transportation, a foundation was dug, filled in the central area with rocks of all sizes, including a very large one (see no. 3 at the Fig. 16), with no obvious layers. Ditches were left on the both sides of the road (see nos. 8 and B at the Fig. 16).

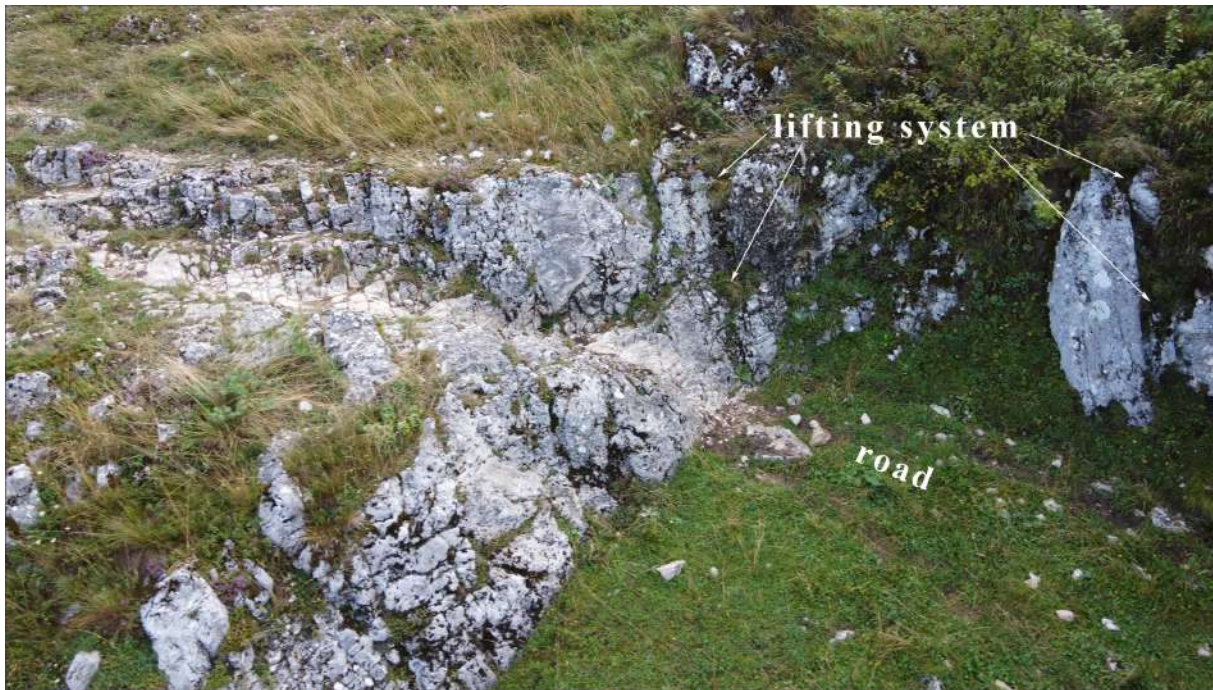


Figure 17. The 'stone gate' near T.8. Drone snapshot.

In the area where T.8 was made the road is climbing a slope of 14.6°. About 6 m further north there is a stone gate not taller than one metre high, where normally a cart couldn't go without a sort of help (Figure 17). As no time was left to do supplementary excavations near the stone gate, I had to give up, making though some observations at the place. The only useful piece of information is the fact that into the large cliffs next to the road there are two long holes (about 12 cm in diameter and over one metre in length), possibly part of a lifting system. Note that they are not vertical, but slanted in the opposite direction as the road, suggesting that the pulleys were not standing on four posts, but only in two, being anchored in the upper part of the terrain.

Mobile inventory

Artefacts are rather scarce in our excavations, as our tests are not connected with housing, but with traveling or guard posts. The exception is the Trench 5.

Although not many, the artefacts put some problems of interpretation, mainly within the palisade. Handmade pottery, unusual coarse for Roman Age, popped up in different places and layers, as, for instance, the sherds depicted at the Figure 18, 1-4, 8-11, 34. There is no certitude about their chronology, as there are missing typical features of Prehistory, as rims decorated with notches or fingerprints, buttons or applied clay bands, as well as any decoration. Nevertheless, there is a shape from the body of a small pot, with a quasi-angular belly (Fig. 18/1), not

³¹ Those ledges remain a weird fact, as the raw model is Roman, although I was not able to find it in Bran Pass.

³² Measuring at the centre 0.44 m. The road at Fundata has a thickness of 0.6 m, measured at the centre.

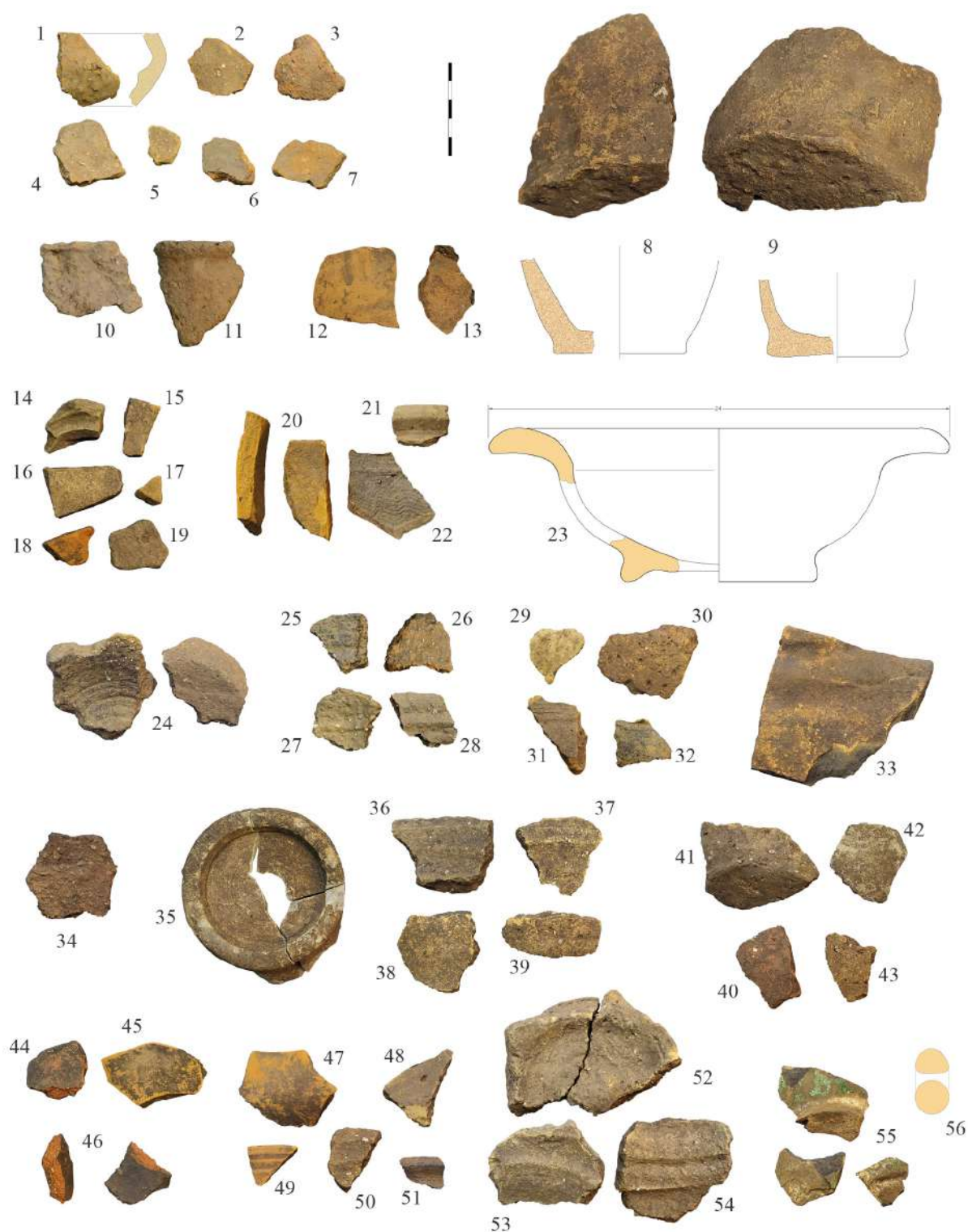


Figure 18. Pottery (selection). Prehistoric pottery: 1, 10-11, 34; perhaps prehistoric: 2-4; Middle Ages: 55; Roman Age pottery – the rest. Very coarse: 34; coarse: 1-5, 8-11, 25-26, 42-43; half-coarse: 6-7, 13, 21, 27-30, 32, 37-39, 46, 55-54; half-fine: 17, 19-20, 22, 31, 48, 56; fine: 12, 18, 23, 41, 49, 55. All at the scale 1:3.

known within the Chilia-Militari Culture.³³ There are also some disturbing facts, like a clay composition filled with

³³ This culture has been developed within the second and third century AD, south of Carpathians and east of the Lower Olt River, ascribed for Dacian population not involved in Dacian-Roman wars. Though strongly Romanised (at least in what is

pebbles, not only large, but many (Fig. 18/34), as well as ceramic compositions containing unusual amounts of crushed sherds (Fig. 19/2, 4, 6).³⁴ On the other part, there is a flint blade discovered on the Trench 1, suggesting a prehistoric occupation of the site; its stratigraphic position – 30 cm below the surface, in the middle of the Roman Age palisade – is suggesting the fact it was not recovered where it was lost, but in a secondary position, brought with the turf slices, when the palisade's rampart was done. This could be evenly true for many small sherds – as they are, in fact, very small. The Trench 4, with the western side not burned, was helpful in order to understand the stratigraphy and the fact that no layer could be ascribed to prehistoric contexts or to compact areas of supposedly deposits of prehistoric artefacts. The same is true for most of the pottery fragments from T.1 and T.4, most of them small and very likely in secondary positions. Exceptions with pottery broken in place, somewhat larger, could be the case with the fragments which allowed the reconstruction proposed at the Fig. 18/23, where one could see a large and deep dish, of good quality, fine, with a dusty surface, reddish-yellow, more usual for the second century AD.³⁵ Its parts were recovered at depths around 70 cm, in the middle of the palisade's rampart (Fig. 12/layer F), making it the oldest Roman artefact on the site.³⁶

The bulk of the Roman pottery is yet some younger and rather modest. The sherds recovered from the palisade are equally small, in secondary positions, being very much alike with pottery seen in the T.5 (Fig. 18/35-54), larger, far many, and associated with living stuff, like a fibula (Fig. 20/4), chopped animal bones and remains of an chalk oven. The fragmentary estate of conservation does not allow talking about typology, but there is a typical diversity of Roman age fabrics, as seen, for instance, in contemporary Roman forts from the southwestern frontier.³⁷ Between others, there are large recipients for storage (as Fig. 18/33), good (or at least fair) quality liquid containers (Fig. 18/35, 42, 45, 47-49) or kitchen stuff (Fig. 18/36-43, 52-54). The variety is well expressed also in what concerns the colours, from dark grey (especially kitchenware), light greys to light yellows (mainly liquid recipients), but also intermediary products, like oxidised bodies with dark grey slips (Fig. 18/44, 46), not unusual themselves.

Seen at microscope,³⁸ Roman pottery displays the usual traits, as the slip, including for most of the kitchen recipients (as in the Figure 19/8, 9), with compositions ranging usually between fine (Fig. 19/ 12, 11) to quasi-coarse mixtures (Fig. 19/8-10), with silica around 1 mm, but with densities which could vary. An interesting thing is the occurrence of some tiny threads, around 20-25 microns in section, on about 30% of the cases, most likely goat hair, mixed in the paste.³⁹ Usually they are white, but I found also a black one (not shown in selection).

Small finds referring Roman Age are just a few, as a casket button (Figure 20/2),⁴⁰ a strap end (? broken; Fig. 20/3)⁴¹ and a fragmentary fibula (Fig. 20/4),⁴² all bronze made. Iron objects are still fewer: a small hunting arrowhead (Fig. 20/5)⁴³ and a fragmentary scissor (Fig. 20/6).⁴⁴

concerning pottery), the handmade pottery was usual, but in small proportions. For details about Chilia-Militari see Teodor, Bădescu and Haită 2015, esp. 90-93.

³⁴ Crushed sherds in ceramic paste are not unusual for Chilia-Militari Culture, but most typical they are well grinded and difficult to spot.

³⁵ Besides the two sherds making the picture from the Fig. 18/23, there were found other three or four small parts, possibly belonging to the same artefact. Their spatial distribution yet excludes to be broken on the spot, the dish being damaged when the place was still in construction.

³⁶ The seventh type of dishes (Popilian 1976, 125).

³⁷ Popa and Bordini 2016; Teodor and Dumitraşcu 2018.

³⁸ CoolingTech digital, portable.

³⁹ I firstly noticed the presence of those threads recently, using this microscope with low magnificence but with great mobility (it can be used against almost any part of a sherd). The mentioned percentage does not mean that the fibre exists only in about one third of the artefacts, but just that it was seen only on one third of the cases. They cannot be seen with the bare eye, therefore the find is a matter of luck and perseverance. Such a composition, with animal threads, I've seen first on Chernyakhov type pottery from eastern Romania (Teodor 2021 b, 36-37), trying then on a small Roman pottery lot from the fort Băneasa (Teleorman County, results yet not published). My guess for the goat hair is driven by the size of the section, because animal threads below 30 microns cannot be anything else.

⁴⁰ Found near the lower end of T.1, on the bedrock, very likely rolled from the collapsing watching platform, more likely to have small pieces of furniture.

⁴¹ Artefact associated with the small stones from the first stone palisade (or the second palisade made here), on the T.4.

⁴² The very first artefact found at Orateu, on T.1, just below the grass, in the middle of the last palisade (stone palisade, faze 2, towards the middle third century.

⁴³ Found at the base of the rampart used for building the first stone palisade, at the beginning of the third century. Note that the arrowhead has square sections both for the body and the spin, it is very light, and therefore it should be rather a hunting arrowhead than a war one.

⁴⁴ Found on the top of the last palisade, possibly postdating the Roman occupation of the site. The depth of the discovery is still better (15 cm) than that of the fibula from Fig. 20/3 (10 cm), the last being certainly of the third century. Their find locations

1. Prehistoric, see no. 10



2. Prehistoric, see no. 11



3. Prehistoric, not illustrated



4. Prehistoric, see no. 1



5. Prehistoric, see no. 34



6. 14 Prehistoric, not illustrated



7. Roman Age, see no. 13



8. Roman Age, see no. 37



9. Roman Age, see no. 38



10. Roman Age, see no. 46



11. Roman Age, see no. 45



12. Roman Age, see no. 23



Figure 19. Microscopic images for selected pottery (the width of each image is the equivalent of 4 mm). Prehistoric (1-6); Roman age (7-12); wheel made (8-12). Numbers are corresponding to the Fig. 18.

Middle Ages artefacts are related to the researched roads, except a relatively large belt bucket (Fig. 20/21), found near the topsoil, on the antique palisade, in T.3. Giving the position, above the road climbing towards the plateau, one could take in consideration a watching post, as from the small fort that road was not visible.

Most of the artefacts related to Middle Ages are horseshoes and nails, many of them used for horseshoes (Fig. 20/7-9, 11-12, 18, 19? and Figure 21/6-11). There are 5 fragmentary horseshoes (Fig. 21/1-5),⁴⁵ all broken approximately

are closely related.

⁴⁵ For comparative data see Clark 1995, 100 and 114.

in half (or less), all missing the front part. In all cases the break is due to the wear, as shown on the sections drawn with Fig. 21/5. Due to very demanding terrain, the tip of the horseshoe is thinner than the back side, in all cases, as result of the strong friction; finally – they were breaking apart. Solutions have being tried, as proved by the artefact from the Fig. 21/3, where apparently a large rivet was mounted, near the tip, playing as a stud; yet the result does not look better. The horseshoes were clamped on the hoof with nails having a rectangular head section, measuring in average 1.09×0.42 cm, with relatively low profile, or at least they look that way, being outworn themselves. There is only one case (Fig. 20/18) which could suggest that if newer they could have a taller head, giving a better adherence on flat stones. The heads of the nails, being larger than the holes, were supposed to fit in the gutter made on the outer face of the artefact (see Fig. 21/1b and 5b). The holes made on the horseshoes have the same rectangular plan, with the average size of 0.53×0.35 cm. The inner profiles of the holes are larger outside⁴⁶ and narrower inside, fitting the nails cross-section, and proving that they were strongly hammered.

The horseshoes nails (Fig. 20/7-9, 11-12; 21/6-9) have almost all very similar dimensions, with a broken tip and a bent near the breakage. Measuring from below the head of the nail to the bent near the broken tip, the dimensions are pretty much the same, with an average length of 1.8 cm.⁴⁷ Therefore, the artefact from the Fig. 20/19, with a



Figure 20. Small finds. Flint (1); casket button (2); strap end (? 3); fragmentary fibula (4); arrowhead (5); fragmentary scissors (6); horseshoe nails (7-9, 11-12, 18, 19?) and other small nails (10, 13-17); fragmentary canon ball (20); buckle (21); fragments of glass recipients (22-24).
Prehistory (1), Roman Age (2-6); Middle Ages (7-24). All 1:2.

body length of 3.56 cm, have had very likely other use, though the morphology is similar. The reason why all the tips are missing is clear, being a must-do of the shoeing technology: the tips penetrating the outer walls of the hoof were bent and cut. Due to the shape of a hoof, the nails hammered perpendicular will always go out at about 2 cm length of the body.

The other nails from the Figure 20, with a rounded head (Fig. 20/13) or with tall, pyramidal heads (Fig. 10, 14-17) should have other use than fixing horseshoes; being found on a road, they should be lost parts of the wagons.

⁴⁶ The outside of a horseshoe is considered the face hitting the road.

⁴⁷ And with a relatively low standard deviation, the minimum being 1.63 and the maximum 2.10 cm, which is good for a non-industrial society.

The only iron artefact not related to travel is a fragmentary cannon ball (Fig. 20/20), found in T.8. The ball is broken, missing almost half of its original mass, with a restituted diameter of 7 cm and a mass around 1.4 kg. It is unlikely that it was lost in transportation, as probably no one would carry an iron ball half missing; it is more likely a shot from the fortress, as between the two places there is less than 150 m. Such a small cannon ball is suggesting a rather early chronology, as the late 15th century,⁴⁸ time when both the fortress and the road were still in use.⁴⁹

Another type of medieval artefact found in our diggings is the bottle glass, namely three small sherds, all dark, from nearly black to green (Fig. 20/22-24). They are all thick and very likely are fragments from three different bottles, but one cannot say anything about their morphology. In other parts they are considered ‘post-medieval’, low quality type, with iron oxide in excess (more than 1%), its chronology being most likely related to the (late?) 16th century.⁵⁰ Although the date is not certain, what do I have to stress here is the possibility to have this road – east of the eastern plateau at Orateia – in function as late as the end of the 16th century.

Table 2. Determined species of animals.

species	no. of bones
<i>Ovis/capra</i>	4
<i>Cervus elaphus</i>	2
<i>Bos taurus</i>	10
<i>Equus caballus</i>	1

I will conclude the section about diggings with a short osteological report, owned to my colleague from the National Museum of History, Valentin Radu. There have been analysed 44 fragmentary bones, most of them from the Trench 5 (which gave the most part of the archaeological inventory), and a few (13) from T.1. As the bones were very fragmented (processed for cooking), most of them (27) cannot be determined as species. For the rest – situation is the next (Table 2)

There is no surprise in the table above. The cattle were the base of the alimentation and local economy – as it stands today. The small cattle come next, as well in line with the recent economy. The wild species are represented by the deer, as should be, as we found a hunting arrowhead. The horse reached also in the pan, but this is nothing unusual. There are missing yet the pigs (either domestic or wild) and some other things, but the bone sample is small and fragmented.

Roads in proximity

Orateia is the southern lock of the Bran Pass. A handful of armed men could block access towards mountain against large armies. This is why the routes in the area are critical.

The road is coming from Rucăr, where a Roman fortlet was standing in the early second century, is climbing Scărișoara (lit. ‘The Small Ladder’), reaching Posada Pass (lit. ‘The Customs Pass’), another narrow and mandatory passing point. The old road was then descending steep, made a right turn and heading directly towards Dâmbovița River, following the line of a (now) secondary street of the village Podu Dâmboviței.⁵¹ The river was crossed a few

⁴⁸ First excavation in the fortress, made in 1905, under the direction of Grigore Tocilescu, has found ‘a few’ stone cannon balls (Cantacuzino 1981, 123), but no details are given (the research was not published, there are yet some archived notes at the Library of the Romanian Academy, manuscript 5137, 216-217). The fire guns were produced in the area pretty early, in the German towns from southern Transylvania, as Sibiu (*Hermannstadt*), attested for 1373, Sighișoara (*Schässburg*) from 1393, and Brașov (*Kronstadt*), from where Wallachia was importing guns in 1432 (Stroea et. al. 2014, 17-20). The earliest gun balls were made of stone, some later also by iron or lead. The range of the shots were reaching 900 m at most, before the 16th century (Rosetti 1947, 145-153), but that was the last problem of the garrison from Orateia; they did not need shots longer than 150 m, due to the terrain conformation. For guns from the late 15th century, their calibre and the shots’ raw material see also Postică 2004, 166.

⁴⁹ The use of fire arms, at Orateia, is also supported by historical accounts, see further.

⁵⁰ Middleton 2015, Volume 1, 37-38, 103-104; Volume 2, Appendix F, 14-15, for which such artefacts are ‘post-medieval’, having yet similar chronology (16th century or later). Note that ‘Middle Ages’ are well retarded in central-east Europe, 16th century being fully ‘medieval’.

⁵¹ As a map of this road is already sent for publication (Teodor 2022, fig. 24) I will not retake it here. Podu Dâmboviței village is rather modern, developed along the old road. Looking on the Second Habsburg Survey one can see that all households were

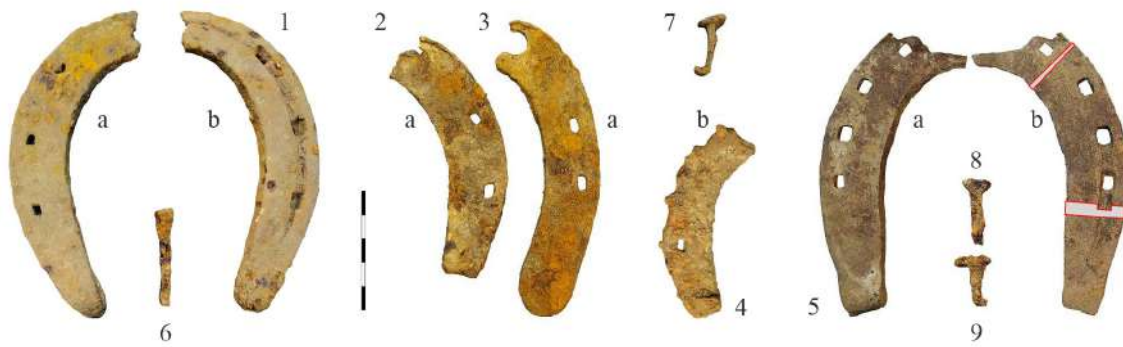


Figure 21. Horseshoes (1-5) and nails for horseshoes (6?, 7-9). Inner faces (1a, 2-3, 5a) and outer faces (1b, 4, 5b). Scale 1:3.

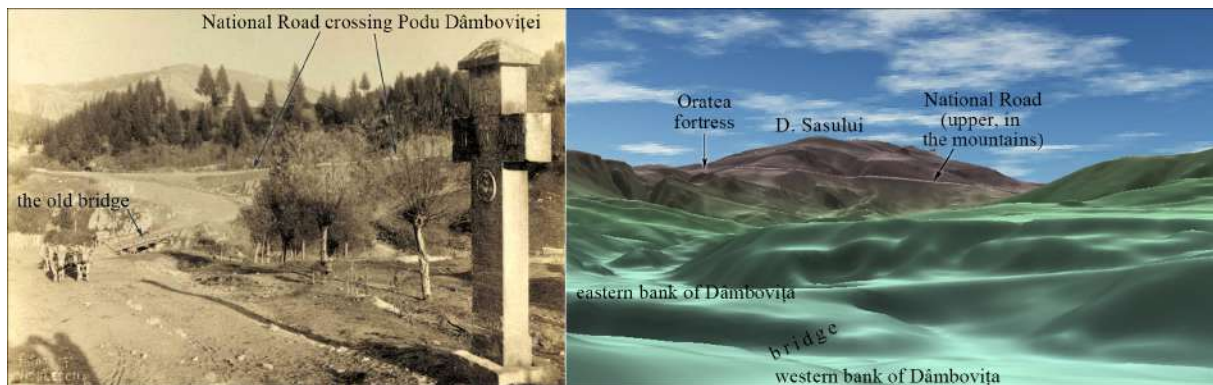


Figure 22. Comparative images. Left: the bridge and the cross made under the ruler C. Brâncoveanu, in 1711, at Podu Dâmboviței (Niculescu 2011, 56, photo taken before 1893); right: virtual reality, from the same point towards Sasului Hill (LiDAR terrain model, resolution 3 m).

meters downstream nowadays bridge,⁵² work finished in 1711, as proved by a large chalk cross, itself a historical monument,⁵³ located initially on the western bank⁵⁴ (and not on the eastern, where is now), as proved by the compared images from the Figure 22.⁵⁵

From Dâmbovița bank the old road was heading straight towards Orateia. The route of the late 17th and early 18th century is marked by several chalk crosses put along it. One was standing near the bridge crossing Orății Valley,⁵⁶ down in the village, the next being located near the place where the antique and the late medieval roads where

developed along that road. The modernised road from the late 19th century, made on a completely other route, has modified the topography of the village around it.

⁵² This bridge is declared historical monument in LMI (code AG-II-m-B-13764), but this is only one of the many errors contained into the document. The old bridge, made under the ruler Constantin Brâncoveanu, achievement for which he has raised a large and nice chalk cross at the bridge head, in 1711, is completely disappeared today.

⁵³ Constantinescu 2017, 161, dated 1711; LMI code AG-IV-m-A-13984.

⁵⁴ The cross is depicted on the western bank on the First Habsburg Survey (1773-74), as well on the so-called Specht Map (1792, a late addition of the First Survey). Specht Map has not a dedicated portal, but might be downloaded at <http://www.limes-transalutatus.ro/materiale.html>.

⁵⁵ Note that although the photo is from the late 19th century, the cross was already burned (especially the left wing). Note also that the original bridge had a wooden deck and, very likely, only stone pillars (the fact is not very obvious neither on the printed version, 21 x 14 cm). In the background, behind vegetation, one can see also the modernized national route, crossing the image from left to right, on a completely different route as the old road, which was going straight towards Orateia. The new bridge, ten times larger, fully in stone, used by the new road, is located outside the image, on the left. Though Niculescu's photo is old, it was not published before 2011, therefore the historic geography of the place is still confusing for many, including the specialists of the National Heritage Institute. Many thanks to the editor of the Niculescu's album, Adrian Săvoiu, for indulging me to use the image (Fig. 22, on left).

⁵⁶ LMI code AG-IV-m-A-13982 (from 1710). Data is absent in Constantinescu 2017. The cross is missing from about five years. The major showed me the place where it used to be.

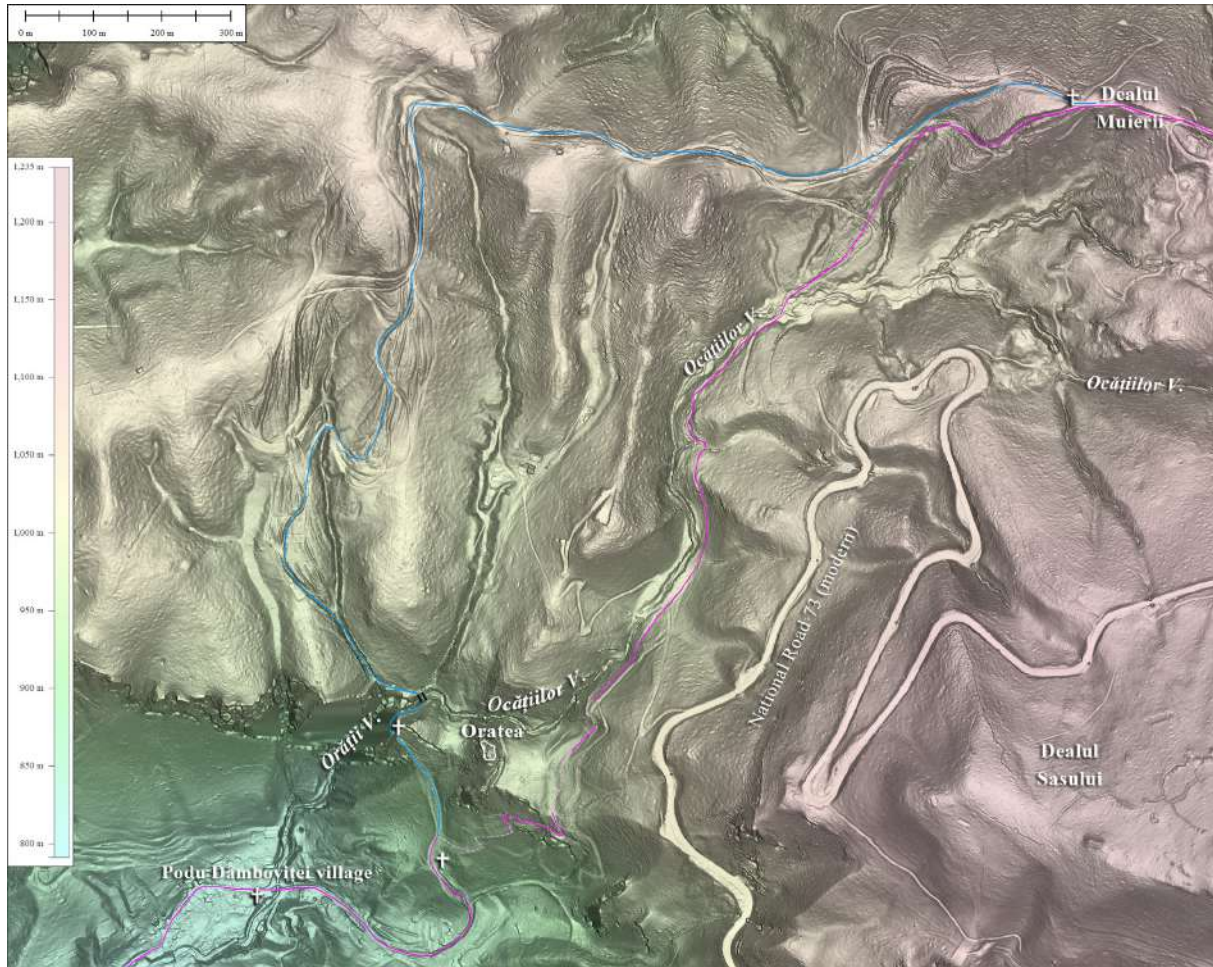


Figure 23. Map depicting the roads around Orateia fortress and north of it. LiDAR file. Pink: old (antique) road; blue: late medieval and modern road; white crosses: locations for chalk crosses made in the early 18th century.

splitting apart, the older one taking right, the newer one heading northwest (Figure 23).⁵⁷ The next cross is located on a high cliff above the last, in the highest point from this segment.⁵⁸ Another one hundred meters ahead, where the road was crossing again a deep torrent over a bridge,⁵⁹ recent research discovered a small and square building, to be put in connection with services provided to travellers.⁶⁰ The road was heading north for more than one km, turning east and going another km up to Dealul Muierii (lit. Woman's Hill), where it was merging the old route. In the place where the two were meeting, another cross was placed.⁶¹ Another km eastward, in Muierii Valley,

⁵⁷ Constantinescu 2017, 160, dated 1709-1710; missing from LMI.

⁵⁸ Constantinescu 2017, 160; dated 1710-1711. The written text on the cross says that people from Câmpulung, Rucăr and Dragoslavele repaired the road from 'Posada and Oratie (...) up to the frontier'. It is clear that the western road was far older than 1710. LMI code AG-IV-m-A-13983 (a cross from 1711, very likely this one). Note that 'Oratie' is a place name from the early 18th century, likely more accurate than 'Oradij' (on the First Habsburg Survey, in 1774) or 'Oradie' on the Specht Map (1792), also closer from present day pronunciation ('Orație'). The name is yet attested from the 15th century (see below).

⁵⁹ Not clear if we should say here Orății V. or Ocășilor V.

⁶⁰ Research conducted separately of that of me, but also in 2021, for preparing a restauration and designing tourism facilities of the fortress and the surroundings (a challenging project...), led by the architect Dan Baci and the archaeologist András Sófalvi, evidenced a small square building, not excavated yet (information provided by Dan Baci). As no other building is known in the area, this is probably what LMI names 'hanul' (the inn), code AG-II-m-a-13736.02, dated in the 18th century. Obviously, it cannot be an 'inn' in 16 sq. m, in a place without water. More likely it is a shelter for the personnel supposed to help the travellers in such a difficult environment, or to take the fee for crossing the bridge (the torrent is too steep to be crossed otherwise), or both. Apparently it was firstly discovered and excavated in 1969 (Cantacuzino 2001, 173), but the results were not published.

⁶¹ Constantinescu 2017, 161-162, dated 1715. Geographical specifications are wrong (including in an earlier edition of the book, from 1980s), the result being that nobody really knew where it is. This is probably why this cross is missing from LMI. I found it by chance, in 2018, took photos and measurements, but in 2019 it disappeared. Just like that. Stealing large crosses is

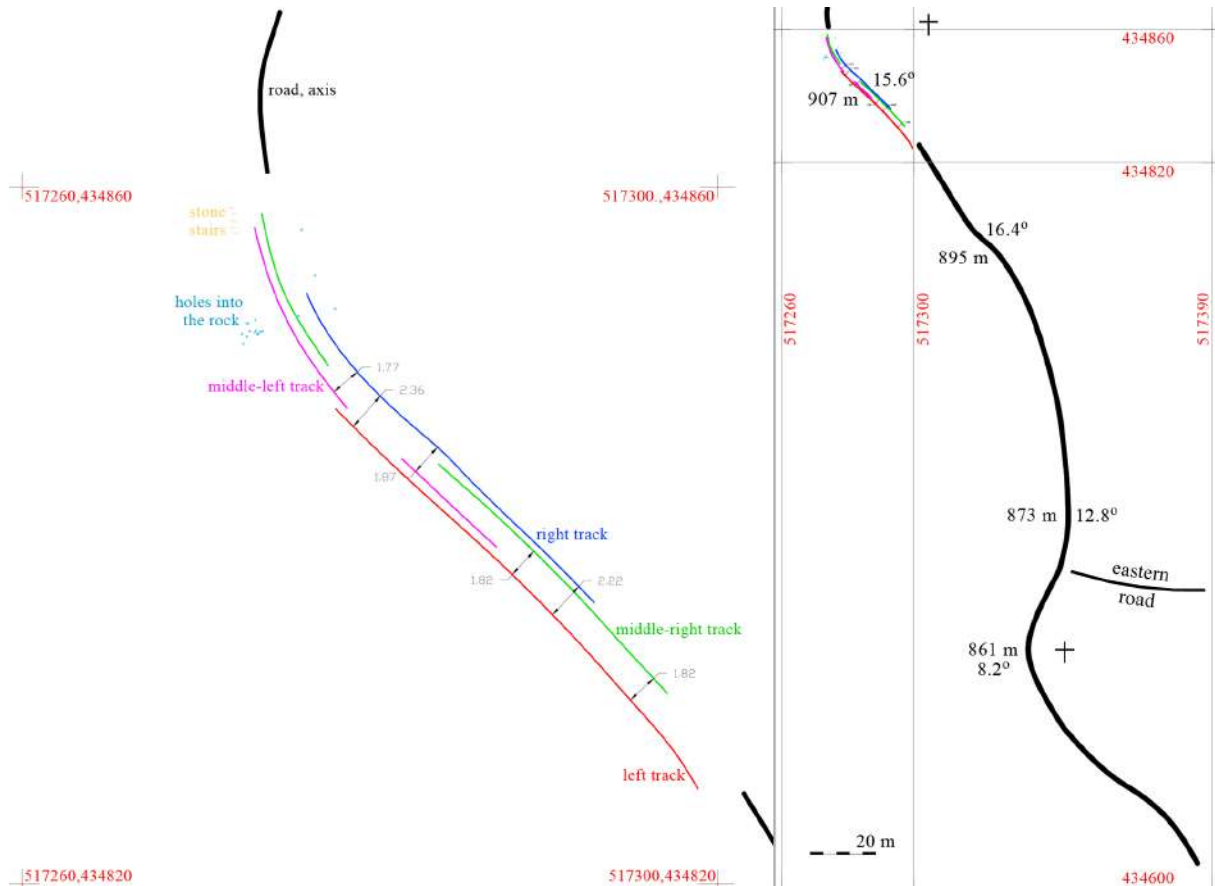


Figure 24. The road west of Orateia fortress. Detail and a larger view. Stereo 70 coordinates.

old maps are suggesting another cross,⁶² but I was not able to find it. From here to the modern frontier there was another 3 km to walk, place where another cross was standing, preserved only as a place name (Crucea Pajurii).⁶³ With the antique road I have dealt within the excavations' section of the paper. About the western route I have to give some details here, as it is mentioned in all known literature,⁶⁴ although no real research was ever done there. I will refer yet only at the segment proximal to the fortress.

I do not know why the eastern road was deserted. The main problem appears to be the desolation of the medieval fort and severe damages along the old route; problems could occur at the Stone Gate, already mentioned, but anywhere further, as the road was following closely the lower part of the Ocățililor Valley, at the feet of steep slopes (33° in one place), and any avalanche could close it. At some point they decided that it is easier to change the route than repair the damages at the old one. The western road was probably some older, as path followed by locals in order to avoid taxation at the fortress. The new route is not better at any cost, being twice as long and having tough passages. One of them is the very first segment, near the crossroads under the fortress (Figure 24). Near the chalk cross at the crossroad, the slope is 8.2°, but only 60 m further it becomes 12.8° and goes for worse, exceeding 16° as it is approaching the highest altitude here. Nonetheless, the most famous passage is a bit higher, where the tracks of the wheels are visible on the ground (Figure 25), although the slope is there a bit better (15.6°). Why so? First of all, because those tracks are visible only when the road is crossing sandstone slabs, and not, for instance, on chalk rocks, which are harder. The mountains we are speaking of are basically made out of chalk rocks, not sandstone;

not that unusual in the area, being large stones (usually weighing 200-400 kg), reliable in the house foundation, and they are... holly, therefore... protective. An image is available in Teodor 2022, fig. 31.

⁶² Planul Director de Tragere (PDT), early 20th century, on the northern side of the upper Muierii Valley. A shepherd confirmed that he knew there a stone cross, in his childhood, but it vanished long time ago.

⁶³ The toponym is present on all editions of the Austrian Surveys, with slightly changed names, as La Krutse (First Survey, with a cross drawn on the line of the frontier, east of the road; data collected in 1773-74), Crucea (Second Survey), or Crucea Pajurii (Eagle's Cross, on the Third Survey; a cross is drawn on the very line of the border). The physical presence of a cross is proved by the historical account provided by Franco Sivori, in 1585, saying that a cross is marking the border between Transylvania and Wallachia (Călători, 3, 160).

⁶⁴ Popovici 2000; Cantacuzino 2001, 170, 173; Söfalvi 2019, 295.



Figure 25. Track marks on the western road near Oratea (13 Sept. 2020, with my colleague Dragoș Măndescu).

the later occurs here and there, as anyone could see it in the area, but on small spots.⁶⁵ Interesting to note, there are four more or less parallel tracks, not only two, although they cannot be seen easily or everywhere. As we took RTK GPS locations of those alignments,⁶⁶ I was able to make a sketch (Fig. 24, the left part), hoping that I could find several standards of gauge for the old carts.⁶⁷ Unfortunately, the figures I can see today are not encouraging. A gouge bigger than 2.2 m is excluded; all other measurements points out to a gauge around 1.8 m,⁶⁸ no matter if between the left track and the middle right one, or between right and the middle-left one.⁶⁹ No connection could be established between the tracks in the middle, as they are not parallel (see the middle sequence and the left side of the drawing). A gauge around 1.8 m is shown by our measurements on the western road, and is not quite missing for antiquity,⁷⁰ although the archaeology performed in the area gives no chance for such wide carts, as the eastern road itself is no larger than 1.8 m.

⁶⁵ The same thing is happening on Scărișoara Hill, above Rucăr, and the tracks occur also only when crossing sandstone slabs, also on approaching the highest point. The same thing I have seen near the medieval fortress near Râșnov (Brașov County). As my results are not yet published, see Toda 2012.

⁶⁶ Having therefore an accuracy of 1 cm. The measurements have been taken in the middle of the track, no matter the width or the depth. As the tracks are not visible anywhere (not even there...), some parts of my drawings are interpolations. The lines are not strictly parallel, in my drawing, as the transversal axes of the road are not strictly horizontal; such a tilt is changing the measurements taken in plan (horizontal). In order to have the exact gauge between two tracks one will need measurement taken in strict transversal lines. This requires a methodology drawn special for such a situation, but I understood the problem later. Maybe, sometimes...

⁶⁷ For the methodology of studying cart ruts see Groucutt 2022. Note that most of the cases gauges are between 1.3 and 1.45 m, usual for antiquity, dimensions expected also for Roman wagons.

⁶⁸ The result 1.77 m, at the left side of the illustration, is due to a strong tilt of the transversal cross-section of the road, towards right.

⁶⁹ I cannot rule out the possibility that some of those tracks could be marks made by brake levers, but the hypothesis should be tested in field, along new measurements. Such marks are known when the gradient is greater than 20% (van Tilburg 2007, 18), or 11°.

⁷⁰ Four wheel carriages are well documented for Roman age, named *carruca* (it is pronounced almost identical as Romanian 'căruța'), see van Tilburg 2007, 53, but as we already have seen, does not seem the case in Carpathians. For mountains were more recommended narrow gauges, of 1.1-1.2 m (van Tilburg 2007, 54), which fits my results from the excavations. For the hypothesis that the railway gauge (4'8 1/2", or 1.435 m) would be a direct inheritance of the Roman gauge – see Brown 1953. Obviously, this is unlikely.

The changing standards in heavy carts, towards the end of the Middle Ages, using a larger gauge, could be the reason to abandon the old road and to make a new one. As one could see in my excavations, there are places where the road was remade larger (as in T.8, the remade road had a width of 3.8 m), but also places where it was found with repairs, but at the original width (1.88 m in T.7).

A new contribution of our research along the western road is that near the highest point on the route we found over 20 holes made in the rock.⁷¹ They are perfectly round,⁷² 3 cm in diameter, and apparently no deeper than 5 cm, where tested. Most of them are located on the left side of the road (as climbing),⁷³ on a surface around 1.5 sq. m, but no specific plan could be seen. Other two holes, of the same size, occur in the middle of the road.⁷⁴ Other holes – at least 6 – can be seen on the right side of the road, made horizontally in the vertical rock wall.⁷⁵ The purpose of those holes is not quite straightforward. Even if iron spikes were fixed into the holes, they would be too weak to support heavy carts or a pulley system. Or maybe we think about the wrong idea of ‘pulley’, driven by wheels; why not just ropes around iron bars? Wrapping a rope around several bars the friction would increase, as well as the resistance on bending, and could at least work as a brake, preventing heavy carts go downhill too fast. As for pulling up the load, probably a pair of supplementary oxen would help. That means supplementary personnel was necessary at the place, making service around the day.⁷⁶ They would also regulate several issues connected with the traffic; for instance, the road is usually too narrow to allow circulation⁷⁷ in both directions and the locals had to prevent double direction traffic on certain segments.

Similar holes into the rock were observed beyond the Ocașilor (Orășii?) torrent, beyond that square building, proving that the old route is there. We followed the route for another 150 m, on the bottom of another torrent, having a slope of only 7°, still very vulnerable on rainy weather. The rest of this route was not investigated, up to the Muierii Hill, but the route reaches the ridges and should be easier there.

There are several historical accounts about the difficulties encountered by the travellers around Orateia; they are referring to a small stretch of time, towards the end of the 16th century.⁷⁸ Their analysis shows that, most likely, in the late 16th century the western road was already in use. More, Filippo Pigafetta said that the castle from Orateia was still active in 1595, having cannons, which is unlikely.⁷⁹

⁷¹ Along my colleague in the HiLands Project, Dragoș Măndescu, 13th September 2020.

⁷² Which is uncommon for manufactured iron spikes. The absence of the edges could be yet understood, as spikes with edges would cut the ropes.

⁷³ A snapshot of those in Teodor 2022, fig. 25.

⁷⁴ This is interesting, as one of them was at the bottom of a wheel track. We have to consider the hypothesis sketched by A. Sófálvi (2019, 295) that the grooves on the rock were covered with planks (he didn’t say it, but one needs first logs laid down longitudinally and only then transversal planks). I see two problems here: first is the inner profile of the grooves, which are not rectangular (as expected for worked logs), but elliptical, as done by the wheels; the second is that those logs should be fixed into the rock; but where are the holes? They should be plenty! Clearly, the issue asks for another mission in field.

⁷⁵ That side is depicted in Teodor 2022, fig. 26.

⁷⁶ There are several questions connected with those men in service. For instance: where were they slipping? How far were they from home? The desertion of the fortress has had this side-effect: the personnel needed for regulating the traffic, or repairing the road, was missing from the place. From where were they coming? Rucăr? It is a bit far, for a service on daily bases. This could be the trigger for making a new village (Podu Dâmboviței), closer to the working place. The oldest name occurring on the map (*colibași*, in the orthography ‘Calibaschen’, half Romanian and half German) in the First Survey, show them working for the public administration in the frontier area, men good for all, as hunting the sneaking smugglers or repairing bridges and roads. The name, of Romanian extraction (‘those living in huts’), was given for peasants within the frontier area from Transylvania (Teodor 2021 a, 364, 367).

⁷⁷ Speaking about narrow places, I would also mention that 5 m further of the dense group of holes, one can also see 5 steps carved into the rock, as the place was too small to allow circulation for both a wagon and pedestrians.

⁷⁸ Franco Sivori, Jaques Bongars, Filippo Pigafetta, all for the last two decades of the 16th century (Călători, 3, 20, 41, 160, 545, 551, 561-62), all telling about ropes and pulleys used for dealing with the strong slopes, but also by wooden structures, suggesting a scale, where the carriages were pulled up. For other sources see Popovici 2000, 33. Unfortunately, such a description fits both the eastern and the western roads near Orateia. One of them, yet, is more specific: ‘/one of the mountains/ named Chiral Petra /Rom. Piatra Craiului/, having on top a small castle with cannons, where the road is cramped between the river bed and the vertical cliff in which the road was done, therefore the cannons and the carts are pulled up on pulleys and left down on ropes’ (my translation from the Romanian version, in Călători, 3, 561-562, Filippo Pigafetta). The text is confusing from several reasons, as, for instance, ‘the top of Piatra Craiului’ (the fort is below 1000 altitude, but the real top of the mountain called Piatra Craiului is at 2338 m). His description fits only about 100 m along the road, west of Orateia fortress, although one can see there a (deep, frightening) torrent, not a proper river. On the other hand, I am not sure at all that the castle was still in use at 1595; I suppose rather that he heard stories about it. As I already argued (Teodor 2022, esp. Fig. 27), from the castle there is no firing line to the western road.

⁷⁹ Cantacuzino (2001, 166) has considered the end of the fortress use *perhaps* in the 16th century (for which he detected yet only *traces*), conclusion supported by a recent analysis, although grounded on historical reasons (Sófálvi 2019, 304), the best

Merging data

A mountain archaeology project, HiLands, has brought the opportunity of a new assessment for what was previously known as a ‘civilian settlement’ of the third century, on the eastern plateau from Oratea. A second opportunity, by chance happening in the same time, although with other trigger, was the research made by the architect Dan Baciú and his colleagues, almost in the same place and time, around the medieval fortress and the western outskirts. Although the exchange of information was fixed *a posteriori*, the two sets of data allow a better vision of the historical circumstances.

A relevant role have played the digital models of the area, developed from the LiDAR files, allowing make good choices for test-trenches, still from the office. I was not interested by the central part of the plateau, about which we already had an idea from the previous research, but about the edges, especially that at the precipice. The test-trenches confirmed the supposition, showing no less than three phases of building: a rampart made of turf, holding a palisade, having on top a roofed platform for four meters of its length. That first building perished in flames. It should be dated in the early second century, if looking at the fine dish associated with the fire.⁸⁰ A second palisade – having stones on top of the rampart – was made sometime at the beginning of the third century, when the pass Rucăr-Brân became, again, a Roman road. Although apparently not damaged, this second phase was strengthened, probably a generation later, adding on top still larger stones, in larger quantities. This time there is no sign of a violent end of the Roman occupation, close to the middle of the same century.⁸¹

As for the plateau itself, the Trench 5 proved that the entire place has obvious traces of living,⁸² including the western corner, not only the eastern side, as suggested by the earlier research. At this point we do not know if the entire place was closed by a palisade, but the terrain model is suggesting a negative resolution. Until other works will be done, I have to conclude that, very likely, was fortified only the edge of the precipice, because the road was coming from there, on a route taking a diagonal below the edge of the plateau.

A secondary mission taken by the test-diggings was to establish the access points to the plateau. The road coming from south was more or less obvious, on the LiDAR file, but the solution for the northern exit was trickier. The two test-trenches, T.7 and T.8, made things clear, with a half-surprise turn: the road has been made by Romans, but it was used many centuries after, being repeatedly repaired and, where possible, even enlarged. It was used at least up to the late 15th century, if not later, when the fortress was still working and sending cannon balls to the route.⁸³ On brief – that was the route serving the fortress, not the western one.

When the fortress was deserted, probably due to its obsolete conception, vulnerable to hand fire guns, the eastern road lost its role. Following a former path used by smugglers, west of the fortress, a new, larger road was built, although no historical account mentioned that, sometimes in the 16th century. In early 18th century that road was already old and broken and needed repairs. The works started from the lower part, in 1691, as proved by another cross, put on the Posada Pass.⁸⁴ This could be a coincidence, but more likely it is not. In 1690 the young ruler Constantin Brâncoveanu joined a coalition of Turks, Tatars, and protestant Hungarians supporting a pretender at the Transylvanian seat, Thököly Imre, against the Austrian army. They crossed the mountain through the Rucăr-

guess of its military end being the second quarter of the 16th century. I suspect that Pigafetta just told a story heard in that long journey. Interesting to note, no traveller from the 16th century ever visit the fortress itself, or no description is available.

⁸⁰ It is joining the seventh type of dishes, in Popilian classification (Popilian 1976, 125, esp. nos. 869-871), dated for the second half of the second century. As such a chronology is not possible at Oratea, and the type vanishes in the third century, the artefact from Oratea should be dated before 118.

⁸¹ Although leaving western Muntenia was the result of a military disaster, due to Carpi invasion (245-246). See Teodor, Bădescu and Haită 2015, 93; Petolescu 2021, 50, 53.

⁸² It worth mention that the pottery found could no be produced on site, missing the water (as well as the clay). It was then brought on the site, but from where? The closest Roman site of the third century is Drumul Carului, a small fort on the opposite slope of the mountain, also an unlikely place to make pottery. We do not know another Roman site of the third century for dozens of kilometres. Nonetheless, it should be there, much closer.

⁸³ The fortress at Oratea was not only small, but the walls were not very wide themselves, around 2.6 m at the base (Sófalvi 2019, 290; my results, taken on a terrain-model made by UAV, are similar). Such walls could not withstand cannons’ rebound. Still worse, there are no loopholes into the wall. The luck was that all the western side was made on a high cliff, therefore the foot level near the western curtain was higher than the top of the walls from the eastern side. This is the only way to use cannons in the fort. On the other part, there is no doubt that firearms were used at Oratea, as late as the last decade of the 16th century (sic), as proved by Filippo Pigafetta’s account (Călători..., 3, 561). There is also an earlier document, from 1435, about necessary provisions of gunpowder, brought from Braşov (Sófalvi 2019, 288).

⁸⁴ Constantinescu 2017, 159, cross dated in 1691-92. Note that the text carved on the cross does mention the name of Constantin Brâncoveanu, but not the ruler’s command, though on the historical context this is almost obvious. LMI = AG-IV-m-A-13981.

Bran Pass, split their forces at Podu Dâmboviței⁸⁵ and meet again near Zărnești, crushing the Austrian army. That was a good opportunity to find out, from own experience, what was the state of the roads into the mountains, undoubtedly bad. The works seem to have made real progress around 1710-1711, when were put those crosses, at the bridge and on the high cliff, on the western road. The last cross was dedicated to the completion of the repairs, *from Posada to the frontier*, although I have a doubt, as the next cross northward, on Muierii Hill, is dated 1715.

Interesting to note, if those chalk crosses wouldn't have existed, we would have no clue about the efforts made by the administration of Wallachia to improve the communication routes over the mountains.

The place name, Oratea (with variations like 'Oratie', dative 'Orății', but also others), has left place for many speculations, as it has not a clear meaning. Such a speculation is the similitude between Oratea and Oradea (the Romanian name of a city located beyond the Western Carpathians, over 500 km afar). The Hungarian name is Nagyvárád ('the large castle'), and from it would be derived Oratea (from 'várád'...).⁸⁶ The name of the fortification from the Southern Carpathians is attested from a letter of the ruler Alexandru Aldea (1431-1436), asking to the citizens from Kronstadt (Brașov) to send an escort to 'Orade'.⁸⁷ Interesting to know, there are no other 'orade' between Oradea (the far away city near the Hungarian border) and Oratea, but we know some at the very line of the mountains, on the Wallachian side. On the Prahova Valley, about 35 km east of Podu Dâmboviței, over the mountains, one could find the pair Oratea-Posada, in the same place – at the entrance in high mountains (immediately south of Sinaia), and in the same order (Oratea in the upper position).⁸⁸ Another Orate is located on Râmnicu Sărat River, upstream Râmnicu Sărat town (Buzău County), being a small village named Oratia, exactly at the entrance gates into the mountains; notably, the road climbing along the river has not an exit in Transylvania. This is the general meaning of the term 'oratie', *a gate to the mountain*, as suggested by the geography. Seen from Podu Dâmboviței, the abrupt of Oratea is looking impressive, like a stone wall 65 m high, and the peasants are saying 'I'm going on *Oratie*', meaning the cliff, the mountain, not the ruins of the fort, which are outside the current routes.⁸⁹

The place names of the area are quite fluid, sometimes with weird twists. For instance, on the Second Habsburg Survey one can find the fortress Oratea under the name 'Ruine pustie Cetate niamtzului' (Rom. for 'Deserted ruins, The Saxon's Fort'). In fact, we have here a castling, as the name Oratie is moved on the nearby heights, where today is known Dealul Sasului ('Saxon's Hill'), as 'Mt. Oretzi'. More than that, the valley located south of the mountain, today Cheia Valley,⁹⁰ is named, also, V. Oretzi. It is obvious that the name Oratie (in any orthography) has no connection with a fort place, but with a rocky mountain and narrow passes.

The traditional early date for the fortress at Oratea is 14th century, rather the second half, due mainly to characteristic pottery and two coins minted under Mircea cel Bătrân (Mircea the Elder, 1386-1418), or at least the older historiography placed it so. As concerns the end of it, it should have been sometimes in the 16th century.⁹¹ Recently the chronology was challenged as a result of the fresh partial inspection of some of the mobile inventory from the campaigns 1968-70, mainly due to a pair of rhomboidal arrowheads.⁹² Although agree that those artefacts look as the oldest of the finds, and that they are characteristic rather for the 13th century than 14th century, those arrowheads could be in circulation later than their typical time of use.⁹³ There is why, for now, the hypothesis that Oratea would be the Templar's fort beyond-the-mountain is tempting, nice, but still a hypothesis.⁹⁴

⁸⁵ The Hungarian militaries made their way following a smugglers' path, advancing on the upper course of Dâmbovița River and climbing the mountain top to a pass known, since then, The Turk's Pass. They appeared at Zărnești 'out of nowhere', winning the battle. The Romanian army corps advanced on the 'normal' road, through Bran Pass (Răuțescu 1937, 62-63).

⁸⁶ Sófálvi 2019, 288, with older literature. The author is citing a few place names allegedly derived from Ung. 'vár' (fort) in the former Wallachian County Saac (which is the old name, later Săcuieni), another mountainous area between Prahova County (in west) and Buzău County (in east). True enough, Săcuieni is the Romanian equivalent for Szeklers, but this is meaning nothing else than the fact that it is at the border with the Szeklers territories. On the other hand, there is no Szekler in the area, to explain the 'borrow'. A lot of places has names related to other ethnics, as, for instance, Dealul Sasului (Saxon's Hill), next to the fortress at Oratea, although no Saxons ever lived there. 'Dealul Sasului' is a Romanian expression, not German one. 'Săcuieni' is, similarly, in Romanian language.

⁸⁷ Coman 2013, 234-235.

⁸⁸ Sófálvi knew the information, but he was not impressed, explaining that Prahova Valley is also an important connection road between Transylvania and Wallachia (Sófálvi 2019, 288). This is only half true, as Prahova Valley become important only in Modern Age.

⁸⁹ On the other hand, the ethnographic research understand 'oratie' like a song connected with wedding traditions (derived directly from Latin *oratio*). I am afraid that this is rather a bookish name than a used word in the countryside (for which the folks say rather 'urare', also from Latin - *orare*). I cannot see a meaningful connection between the two.

⁹⁰ A 'key' (Eng. gorge), which is a mountain feature, a deep valley with vertical walls.

⁹¹ Cantacuzino 2001, 166.

⁹² Sófálvi 2019, 296-98, fig. 9/1-2.

⁹³ The author is citing analogies dated as late as 15th to 16th centuries, as those from Dănești-Vaslui (Sófálvi 2019, 297).

⁹⁴ Sófálvi 2019, 304-305; see also Sófálvi 2021, 235, esp. note 2. András Sófálvi is the archaeologist which made new

The two Roman garrisons from Oratea and Drumul Carului⁹⁵ were undoubtedly small, but essential. The two were closing the two entrances into the high pass, being essential not only for an early alarm, but also for making the traffic possible. Such a road, far from civilian settlements or large military units, but also so exposed to tempests and collapsing forests and rocks, need constant care and maintenance in order to keep it working. Assessing a Roman military station at Oratea was a step forward for explaining how *Limes Transalutani* worked, filling a large gap between Jidova and Drumul Carului. Unfortunately, it was a half of a solution, as the road between Jidova and Oratea is still too lengthy.

I looked for another intermediary station between Jidova and Oratea. The best place is near Dragoslavele, where the road is descending from the Pravăț Pass to the bank of Dâmbovița. This is about the halfway between Jidova and Oratea, with an interesting position, where *Limes Transalutani* is merging with the road coming along Dâmbovița. This is the most likely place where an incursion from *barbaricum* could reach the Roman frontier, on the mountain sector. Unfortunately, the place is not only densely inhabited, but also strongly modified, due to a dam and an artificial lake.

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Limes-Transalutani	<i>Limes-Transalutani</i> , research project, http://www.limes-transalutani.ro/
LMI	<i>Lista Monumentelor Istorice</i> , Ministry of Culture, http://www.cultura.ro/lista-monumentelor-istorice
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diggings inside the fortress, in the summer 2021, and I cannot wait his report. This is thrilling!

⁹⁵ Fortlet located several km beyond the mountains crests, at 1094 m altitude, along a narrow ridge which is also the only way to make it. See Teodor 2022, fig. 16.

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