

SECȚIUNEA 2

Linear field survey

Although lacking from all the dictionaries of Romanian language that we had access at¹, and – surprisingly – from the Encyclopaedia of Romanian Archaeology and Ancient History (vol. 3, 2000), “periegesis” (field survey) is a word that comes from ancient Greek, being approximately translatable as “promenade (walk) around” an objective. As a technical term, in Romanian archaeology, it defines (for several decades now) a surface research, in other words without digging.

During the last three or four decades, it is more and more used the concept (and the connected practice) of “systematic survey”, which means an attempt of documenting as complete as possible a well-defined territory, using complementary techniques, gathering of archaeological materials in a grid type system, gathering of data such as those regarding building materials, the study of aerial imagery, geophysics, geologic probing. We will not discuss any further the problematic of systematic field survey, because this will be the subject of a distinct section in the report, at the project’s second execution stage².

The concept of “linear field survey” doesn’t exist in the consecrated specialty terminology; we created it ever since the initial design stage of the project, with the purpose of answering a specific need. This research project, dedicated to a *limes*, is a *linear* project by its very matter of study. The main problem which arises before the small research team is the dimension of the object of study: approx. 150 km. If the techniques that are associated to “systematic field survey” are necessary in order to measure, as accurate as possible, the frequency of inhabiting in certain perimeters (which are small, because of the study’s detailed character!), “the linear field survey” is aimed to produce data for all the length of the Roman frontier, including to identify areas for which there might be a special interest for organizing a “systematic field survey”. Surely, the elaboration level of the documentation provided by linear field survey is way inferior to the one obtained by systematic field survey.

All our outgoings from Bucharest, along the direction of the Roman frontier, were called „missions” (same as all the drone take offs, that bear the same name), being particularized by a proper name, a determinative, which correlates to specific activities; thus, we have “Slatina Mission”, “Turnu Măgurele Mission”, etc. The exposition – compendious – of the field actions is structured in this manner.

¹ We only found the form „periegesis”, which would signify „travel” („long”, according to MDN 2000; „around the world”, according to DN 1986) reportedly deriving from French; of course, as a technique term it derives from French.

² We cannot but remark, at least in a footnote, that in Romanian research programs dedicated to field survey are lacking, as well as funds oriented towards surface survey. Given the fact that nowadays the most redoubtable enemy of historical monuments has become... progress, in other words all sorts of investments from transportation or energy, to the big immovable projects, the institutions of the national archaeological system (the Culture Minister, the Education Minister, Romanian Academy) have no defence strategy. Recently, at old problems had added some new ones, due to the invasion of metal detectors. We are not able to mention at one field directed research project, on large surfaces (therefore *field survey*), except for the action of some foreign teams, such was the British mission from *Noviodunum* (Isaccea; see the page <http://www.ucl.ac.uk/archaeology/research/projects/noviodunum>; see also Lockyear et al. 2006), or the international project from *Troesmis* (Iglița), leaded by Cristina Alexandrescu (www.troesmis.arheomedia.ro, see also ALEXANDRESCU, GUGL, 2014), which has a completely foreign team (a fact which also reflects within the research approach), even if the manager of this project is today the leader of the Classic History and Archaeology Department from the Institute of Archaeology V. Pârvan.

2.1. Slatina Mission

The essential track was Pitești-Slatina-Alexandria, with the purpose of improving the Cooperation Protocols³ with the county museums (namely Argeș, Olt, Teleorman) on whose territory has unfolded our research project. We took advantage of this circumstance, most of all of the fact that we had to spend two nights in the Slatina area, whilst the time we had left was used for surface quests on the Olt's eastern bank, seeking for communication relays between the fortifications of the old frontier, from the western bank (Slăveni, Romula, Acidava, Rusidava), to the *transalutanus* line.

Although the study of the communications between the *alutanus* (i.e. *Alutus*, the antique name of the Olt River) and the *transalutanus* makes no explicit part of our activity project, the thing is that area cannot escape the attention on any researcher who studies the 3rd century frontier from western Muntenia. The inclusion of this theme within the project would have signified an increase of the research area from approx. 1000 km² (the actual form) to approx. 5000 km², which would have been completely unfeasible with the actual resources (including time); on the other hand, the use of any opportunity of information regarding the communication tracks between the two defence lines cannot be but to the benefit of a complete acquaintance with *Limes Transalutanus*, that, like any other military settlement, doesn't have only the defensive component, but also the logistic one, which is actually vital for any military project.

The principal gains of the short investigations on the eastern bank of Olt River, south of Slatina, sums up to information about the points from Mărunței, Drăgănești, Zănoaga-north and the area Sprâncenata-Bârseștii de Jos.

2.1.1. Mărunței

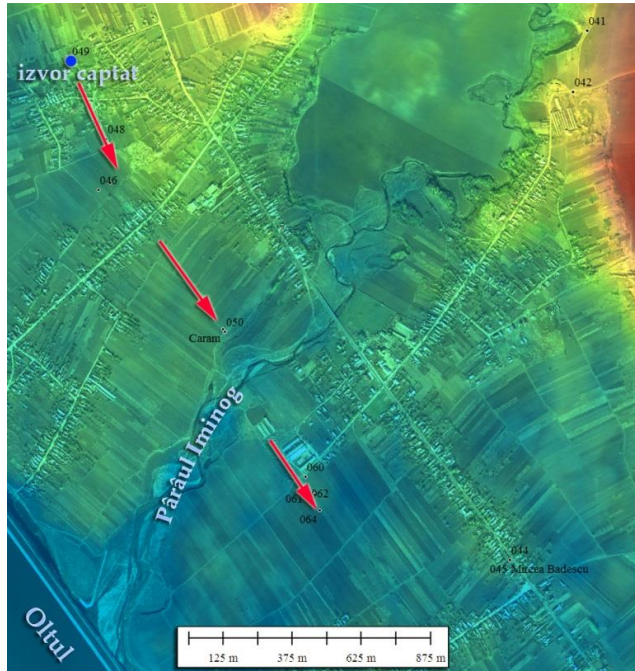


Figure 2.1.

Mărunței Village (Olt county) and the re-established layout of a Roman water aqueduct.

Orthophoto (2012) with terrain model (SRTM), levels between 75 and 125 m.

³ The cooperation protocols are almost compulsory for obtaining Evaluation Authorization from the Culture Minister. Such authorizations can also be obtained in the absence of protocols, but they take a lot more time (therefore risking to obtain the authorizations very late; they are released very hard anyway...). There are, nevertheless, many other reasons to try to establish a collaboration with the local authorities, such as exchanging information about the situation in the field, or the access to the archaeological materials from the deposits.

One of the members of the *Limes Transalutanius* team, Alexandru Bădescu, grew up in Mărunței, Olt County. Alexandru conjured memories from his youth, about the legends of a captured spring. Starting from the existing data, including memories about the area where the rivulet should have been, (north-western extremity of the village), we were able to find, in ploughland, the remains of a large sized water pipe (the diameter was estimated to 20 cm, and even better, guided by the locals, we discovered the captured spring. We went back on the track, towards south-east, which is the direction toward which the identified remains of the Roman pipe were heading; the track – incomplete in this moment – measures 1860 m (fig. 2.1.). Of course, if we consider the pipe's diameter and the length of the adduction, at the end of this track there should have been an important objective, like a *villa rustica*, for instance. South-east of the 64 GPS waypoint *tubuli* fragments were no longer found, but it is also true that we didn't had the necessary time to continue a thorough search.

Nevertheless, the most striking thing, at Mărunței, is the fact that the adduction line crosses the inferior flow of Iminog (including a 5-6 m level breaking), a fact which suggests clearly that during Antiquity Iminog was flowing somewhere towards east, and not within its present bed.

2.1.2. Drăgănești-Olt

In this locality we have visited the town museum, organized due to the enthusiasm of an amateur archaeologist, Traian Zorzolui, who, among others, was kind enough to show us, from his collection, Roman pottery fragments gathered from Săliște street area, at the northern edge of the town, where there is also the road that leads to the touristic replica of the Dacian fortress from Sprâncenata. The diversity of pottery typology and the quality of the archaeological material, gathered from a wide surface, have convinced us that north of Drăgănești once existed an important Roman settlement.

2.1.3. Zănoaga

Advised by the same Mr. Zorzolui we visited a position situated approx. 1 km NW of Zănoaga village (Olt County), north of the route heading to Turnu Măgurele. We have found a large Roman settlement, probably fortified, developed on a surface of over 57 hectares. According to the nature of the pottery scattered throughout ploughland, it is very likely that the settlement has functioned during the entire 3rd century, inclusively after the Roman administration retreated from the province; if most of the pottery is completely typical for the Roman sites of the 3rd century, a part of the pottery material – grey colour, with partially polished décor – suggests that the settlement continued (or was, in any case, reoccupied) until end 3rd or the beginning of 4th century.

2.1.4. Bârseștii de Sus - Cotu Morii (Sprâncenata Parish, Olt County)

We have searched, in Olt's grassland, the site which was classified as historical monument, from the List of Historical Monuments (2010 – OT-I-s-B-08534), but we haven't found it, despite our insistence and the locals' aid in finding the toponym. The Monument was documented before the large works for damming up Olt River, from the 70's, and it is probably covered by drift.

2.1.5. Brief conclusions concerning the field surveys on the Olt eastern terrace

The results of the documentation made in Olt County, on Olt's eastern bank, have brought important additional information for establishing the connection between the two fortified lines – *Limes Alutanius* and *Limes Transalutanius* (see fig. 2.2).

Mărunței village is exactly in front of the capital of Dacia Inferior (*Romula*). The documentation of an adduction over 2 km long, with such a large diameter (20 cm) suggests an important need for potable water. For now the position of the target objective is not known, being probably beneath the modern village. The most probable hypothesis is that indicating a *villa rustica*, first of all because of its relatively small dimensions (which, in a way, might explain why it is unknown).

Five kilometres downriver is located the Roman settlement from Drăgănești, discovered by Traian Zorzoliu, the recovered pottery demonstrating its functioning during the Roman province.

Considering that such rural objectives were on both sides of the military road, we may assume that the road started towards east from a position located somewhere facing the capital, thus crossing near *villa rustica* from Mărunței and the settlement from Drăgănești. The intermediary archaeological landmark of the road towards *Limes Transalutani* is to be found at Stoicănești (on Călmățui)⁴, suggesting that the final objective was somewhere in the area of Mândra village, on Vede. Within the area of this village were previously discovered (TEODOR 2013, 146-147) the remains of a watchtower, but the appearance of a much more important objective in the same area shouldn't be excluded.

Approximately 10 km to the south a second communication channel is possible between the *alutani* and *transalutani* lines. On Olt's first terrace (inferior) this is marked by the large settlement (possibly fortified) from Zănoaga, which is located right before the largest fort of Dacia Inferior – Slăveni. East of Zănoaga there are another two clear archaeological benchmarks – the Roman settlement from Radomirești⁵, and a *villa rustica* from Mihăești⁶. The direction along which this road developed has, at its eastern end, the position of the modern city Roșiori de Vede, on whose territory is assumed, for some time now, the existence of a fort. The strong suggestion proposed by this road does nothing more than to strengthen the hypothesis.

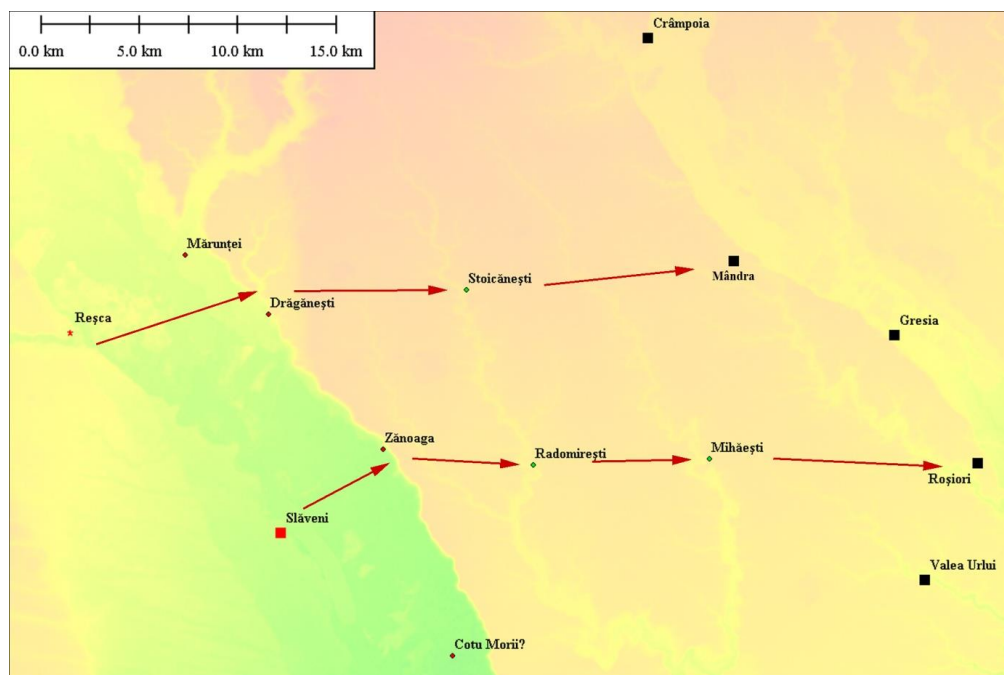


Figure 2.2. Map of the possible connections between the two frontiers, in the area of inferior Olt.

Legend: star – city (capital of Dacia Inferior, Romula); red square – main fort of Limes Alutani; black square – points of interest on Limes Transalutani; red point – sites where field surveys were made, on Olt's eastern side; green point – archaeological sites from the 3rd century, in pre-existent archaeological evidence.

⁴ From where, curiously, derive several isolated numismatic discoveries (associated to „Dacian and Roman pottery”) with a total of 7 coins from Vespasian to Severus Alexander and another 3 coins from Constantine the Great to Valentinian (BICHI 1984, 76, with references).

⁵ Preventive researches connected to the modernization of the road Alexandria-Caracal-Craiova, 2012, Mircea Negru (<http://cronica.cimec.ro/detail.asp?k=5034&d=Radomiresti-Olt-DN6/E70-Lot-2-Alexandria-Craiova-sectorul-Mihaiesti-Caracal-Draghiceni-2012>). The accurate orthography of the village is „Mihăești”.

⁶ LMI 2010, OT-I-s-A-08519.

2.2. Turnu Măgurele Mission

2.2.1. Danube meadow

The trip was made between 10-12 October, starting from the Danube bank and heading towards north.

The field survey begun in Poiana village, advancing towards the (great) fort from Flămânda⁷, on the dyke which has been built in the 70's, including over the northern precinct of the fortification.

The area of the fort seems completely compromised by the repeated workings for defence against Danube's flooding, as the older literature had also underlined. Unlike the 70's, when the last archaeological researches were made (Ioana Bogdan Cătănciu), throughout all the floodable land (south of the dyke) a forest was planted, still young, but thick enough to make the archaeological observation impossible. We were able to identify only two sections drawn by Bogdan Cătănciu, but nothing else, during the aforementioned workings the embankment and eastern precinct of the fort being destroyed. The fort's southern area was covered by water.

Today, the only apparent solution is a drone take off above the fortification, during a season with less leaves, namely in March, if the difficult field will allow the access; even so, the processing of the aerial data, in a thick forest full of branches, seems tricky.

An equally deplorable situation can be found along „Traian's Road” (as the ancient embankment heading north appears on maps) on its entire length while crossing the Danube grassland (ca 2 km). The path, which was once used only by carriages or small tractors, it is intensively used today by heavy farm equipment, including large trucks (for international services...). The actual field road is no longer straight (as it is represented on maps), but it is full of curves, probably determined by the need to avoid softer areas. The old track (*vallum*?) of the monument can no longer be distinguished on the field.

Unfortunately, the Roman limes in the grassland area seems completely lost for research. In the immediate proximity of the village there is a short length – of approx. 100 m – on which part of the elevation and of the embankment width are still profiled. It is the only place from *Limes Transalutanus* where the embankment is still preserved on a 1.4 height, but this was also rearranged (with a bulldozer!) with the purpose of receiving a road that leads to the field. Its western side seems to be preserved in a more or less unaltered form (fig. 2.3), on a length of almost 10 m, but its eastern side can no longer be measured, worked as it is with road-blading, while the dirt is pushed to the east.

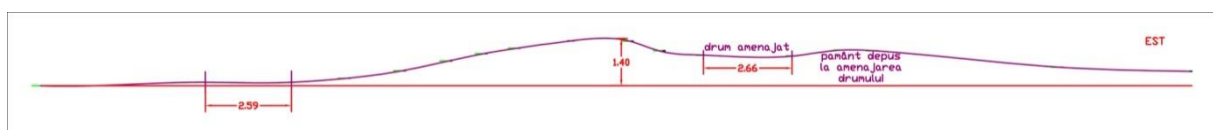


Figure 2.3. Topographic section through the embankment in Traian village, at ca 76 m south of the county road.

In spring we will nevertheless resume the activity in order to identify some additional elements, within the perimeter of the villages Poiana and Traian.

⁷ As it is known in literature, according to the late 19th century name of the actual village Poiana.

2.2.2. Crossing Burnasului Plain

Immediately north of the Traian village's hearth, the embankment climbs the high terrace of Danube, the difference of height between the grassland and the terrace being of 50 m. Unlike those observed in Danube's meadow, here the embankment is not completely destroyed, nor preserved at appreciable heights. The monument can be described as being very flattened, with a profiling of approx. 1% (0.5 m height on a dissipation of approx. 50 m), in other words being very discrete in the landscape, practically impossible to find without a GPS. From here, near Traian village, until the immediate closeness of the next locality to the north, Putineiu, the embankment is not only very flattened, but it doesn't even present visible traces of burning⁸, thus it is hard to find. The exceptions are represented by the views at distance occasioned by the crossings of some (torrent) valleys, as, for example, Valea Adâncă (Deep Valley, fig. 2.4). In this case, a striking detail is the colouring of the terrain, which falsely suggest that we have a ditch between two banks⁹; once arrived at the spot it becomes obvious that we are dealing with a bank (darker in colour!) between two lighter coloured areas. We will not attempt to explain the phenomenon here, just mentioning it for the time being.

Another characteristic of this *vallum* is the presence of some mounds (as they are marked on the military maps, older or more recent) right behind the embankment (some 15-20 m west of the embankment's axis); their positioning, always towards west, and the regular distance to the embankment's axis, allowed their interpretation as ruins of some watchtowers (TEODOR 2013, 22-24). Unlike those observed on other areas of the frontier embankment (like Scrioaştea or Urlueni), these watchtowers no longer survive, nor yet as profile¹⁰, or as possible archaeological materials gathered from ploughland. At least for now, these differences might be interpreted as a distinct history of those embankment segments: some were burnt (at least their watchtowers), some weren't. To the latter category seems to belong a good part of the track from Danube to Vedeia.

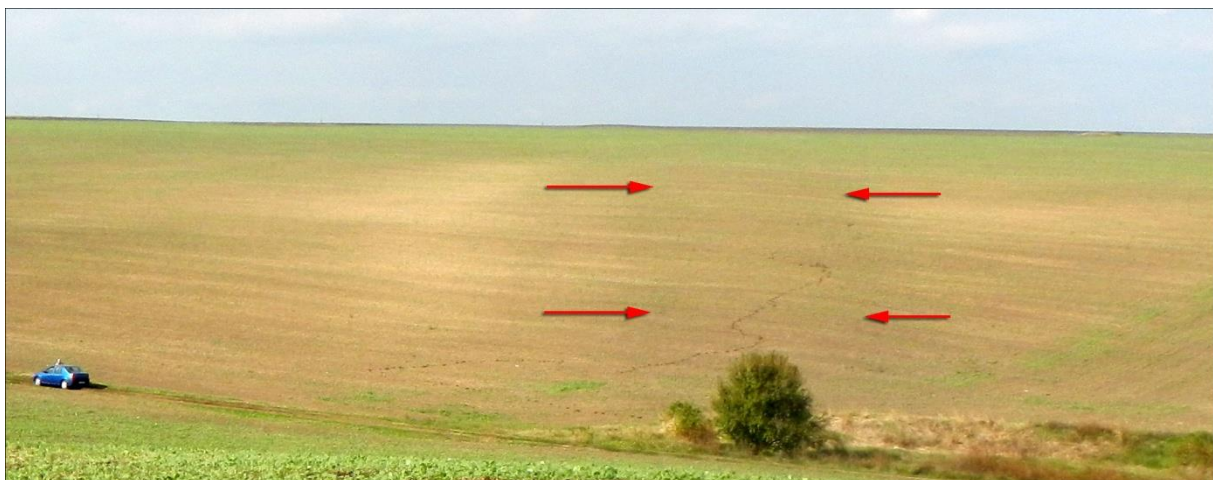


Figure 2.4. „Traian's Road” north of the Deep Valley.

The arrows represent an approximation of the dispersion, in ploughland, of the ancient embankment.

⁸ „Burned embankment” is the most striking defining feature of this *vallum* of *Limes Transalutanus*, or at least this is how it is known from the literature; still, this thing is not holding everywhere. Traces of burned adobe can be found, here and there, practically everywhere, but the density of the phenomenon has very wide limits, from very discrete, to extremely obvious (reddish coloured land). South of the Putineiu village, the embankment is very discrete.

⁹ According to the usual practices of interpreting the aerial imagery, in other words the lighter coloured terrain is interpreted as being higher, because it is the first to lose humidity.

¹⁰ Obviously, because the mass of collapsed materials from the watchtower was a lot smaller than that of the embankment.

The only exception to this general rule is the mound Traian Nord, situated at the very edge of Danube's high terrace, above Traian village. It doesn't have burning traces, but it still keeps some of the profile (approx. 0.5 m). The centre of the mound was not tilled, and the reason for this was right at our foot: a parallelepipedic limestone rock, of 130 x 60 x 54 cm, carved but apparently anepigraphic¹¹. The dimensions are typical for a military milestone, but the section of the stone – isn't (it should have been ellipsoidal). Anyway, its positioning, right behind the embankment, indicates a deliberate action, a significant gesture, because this type of rock is lacking completely in the area and it was probably brought from across Danube.

There are no significant variations to the descriptions above. A new topographic section was made over the embankment, in a position situated 2 km north of DN 52, exactly because it seemed to us that the monument was better preserved. The measurements have confirmed this feeling, the embankment having another 60 cm in height, at a dispersion of 40 m, representing a 1.5% profiling.

At figure 2.5 it is described, with discontinuous lines, the track followed for two days, in plain field, with a city car on tractor roads. This thing was possible up to the close proximity of the fort from Putineiu, where we stopped at Valea Totița, which is not crossed by any road (the valley is flooded, boggy).

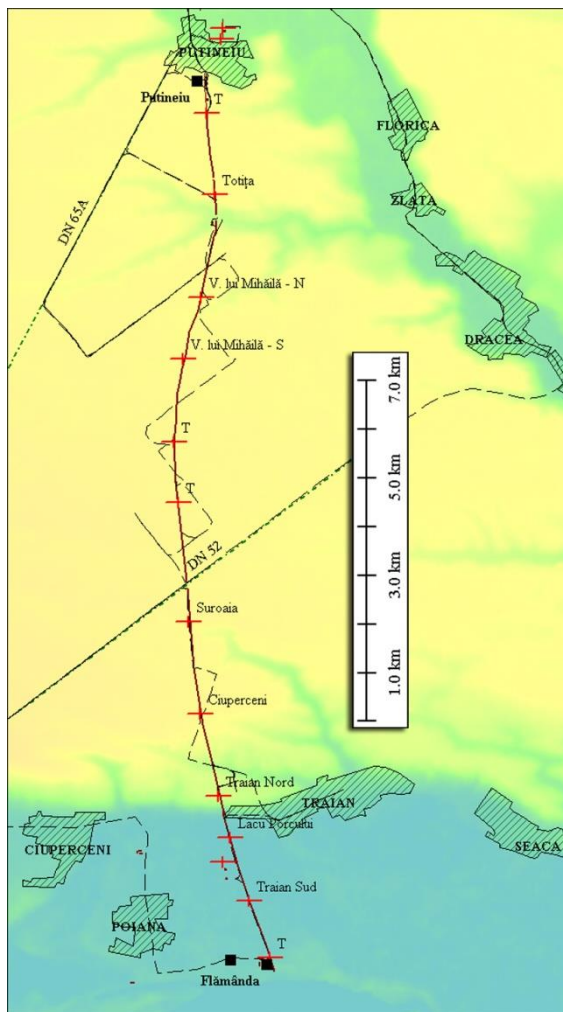


Figure 2.5. The track of the embankment from Danube to Călmățui.

Legend: dark red line – bank; light red – localization of the „mounds” positioned behind the embankment; dotted line – Tracklog file (GPS); line and dot – important roads; hachure – actual localities. EU-DEM (levels between 20 and 120 m).

¹¹ We managed to free almost completely two sides of the stone, in order to make the measurements. We didn't try to turn it over, because this would have implied a deeper digging and, anyway, we couldn't have lift it (the weight estimation is of 570 kg).

We reached the northern bank of Totița valley after a long detour to DN 65A. Here, in the position specified on maps as having a mound behind the embankment, but also around (especially towards the valley), we have found a significant quantity of pottery (but also construction materials), enough to suggest a permanent position of the Roman army, probably as a picket of a very likely bridge over the boggy valley.

The next stop was at the fort which is south of Putineiu village, near the cemetery. The area of the fort has not been tilled until our trip, so the actual fort couldn't be inspected in a useful manner, despite the fact we had the exact coordinates in GPS. Other useful observations, of high interest, were nevertheless made; two areas with indubitable traces of human activity were observed, one at approx. 180-190 m WNW of the fort, and a second one, isolated, (the intermediary area does not present consistent traces), 50 m west of the fort, expanding over approx. 100 meters, along a north-south axis. In both areas was acknowledged not only the frequency of pottery, but also of the building materials, the most remarkable being the rolling stone (which completely lacks in the area!), a clear sign of a road construction. Dealing with two distinctive areas, they cannot be but a small civilian settlement and a necropolis. The dimensions of the extra-muros objectives are symmetrical with the fort, which is one of the smallest from the frontier (a square with a side of approx. 37 meters, according to BOGDAN CĂTĂNICIU 1997, fig. 76).

The field survey at Putineiu brings a long expected element: the civilian settlement pendant to the fort. As we know, the previous archaeological research hasn't reveal any kind of record of this type, settling down the idea that these settlements were absent (which is slightly absurd). We came back to the place of the fort from Putineiu during our next mission (see further below).

From the position of the fort the embankment is practically invisible; it is like that ever since Pamfil Polonic's time, a consequence of the old and repeated ploughing around the village, but also of the fact that it doesn't contain burned materials, which are easier to see. Still, we re-identified the embankment (positioned 125 m east of the fort), in a position ca 200 m south. Its profiling, in this place, near the village, is practically null.

With the same occasion we tried to find, north of the village, the position of a watchtower, observed on the most recent orthophotos at the edge of Călmățui grassland. Despite our perseverance, we didn't managed to reach the location we wanted on the wet field.

2.2.3. Observations north of Călmățui River

North of Călmățui River, the research of the embankment line had a less systematic character. This fact is owed to the fact that for 11 km the embankment is superposed by modern roads and field roads.



Figure 2.6. View from the Great Mound from Băneasa, towards east.

We made a first stop on Movila Mare (Great Mound) from Băneasa, impressed as we were by its size (a circumference of approx. 45 m and a height of 6 m), which transforms it in a „natural” (although anthropic!) observation post, surely observed (and used) by the Romans. Even if, without any doubt, the mound should have belonged to some Prehistoric cultures (Bronze Age?), the mound is an excellent opportunity of observation at distance. Our suspicions were confirmed by another stone with rectangular section, a little smaller than the one from Mound Traian North, namely 90 x 28 x 28 cm, also anepigraphic. This too is a shaped stone, with regular form, brought from across Danube (it is the closest source of stone!), and which, without any doubt, was used by the Romans. Its positioning on the western side of the mound (beneath the top level) also indicates the direction in which the Roman road should be looked for.

A last action, during this mission (conventionally named “Turnu Măgurele”), was the visit in the area of the fort from Urlui Valley. The Urlui Rivulet is the most important water source between Călmățui and Vedea, forming today a chain of artificial lakes¹². The fort is on the valley’s southern side, on a dominant height, quite well protected naturally, and at a distance of over 300 m of the embankment, from which is separated by two valleys. Although systematically tilled, the fort seems relatively well preserved, being quite visible on the field, first of all because at the construction of its paraments a lot of burned adobe was used. The archaeological material can be found in quite large quantities, especially throughout the surface of the fort, but also on the slopes east of the fort, namely on the direction of the water, but it is not clear whether they indicate a civilian settlement, or they are artefacts that rolled on the slope (a little too far, thou, 91 meters to be exact, for the most remote position).

We have to underline here that the fort from Urlui Valley is the only one which didn’t benefit, until today, of any archaeological investigation.



Figure 2.7. Detail of the embankment from Urlui Valley, illustrating the size of the fragments of burned adobe, but also the composition, with clear traces of chalk.

¹² Checking rapidly other data, like the number of localities spread along the water course, and the fact that at the end of the 18th century (according to Specht map) there were such fillings, as for instance at Belitori (today Troianul), suggest a valley with resources that were sufficient also in the past, despite the climate and the steppe aspect.

It is no surprise that the embankment before the fort (a second *vallum*?) is built of burned adobe, in significant quantities (fig. 2.7). The aspect of burning does not indicate a “fire”, but rather a deliberate burning of the construction material, in a different place than the construction site itself. We have to mention that embankments of this type were studied only for the first and second Iron Ages, without further analogies in the Roman world¹³.

We also researched in detail a frontier embankment segment of 240 m, placed right above Urlui Valley. The width of the burned field (and slightly more elevated) is of 4-5 m. There were also observed two positions where the burning extended even more, in the area behind the embankment, being – possibly – the remains of two watchtowers (the distance between them being smaller than we expected)¹⁴.



Figure 2.8.

Surface research in the area of Urlui Valley.

Legend: dark red line – embankment track; interrupted blue – identified segment of a road (very likely Roman); interrupted black – followed track.

As before, we identified the tracks of chalk in the burned mixture; they are interesting, having as replica only the Dacian embankment from Ponorici („Orăștiei” Mountains, near Cioclovina village)¹⁵. The studies made on the field at the last location have concluded (Teodor, Pețan, Berzovan, 2013) that the mixture of burned adobe, which contains a lot of calcium, is very hard, similar to a brick, despite the fact that it is lighter and more porous; the mixture is the result of the local conditions,

¹³ As a preliminary hypothesis, this „innovation” of the Romans owed to the lack of other building materials. The Romans are famous not only for their building standards, but also for their practical spirit and the capacity to adapt to local resources. The sedimentology samplings (see Section 8 of the report) gave interesting suggestions including about the building of these banks.

¹⁴ The usual distance, from previous researches, should not be smaller than half a mile. In this case we are only 300 meters of the fort, and the guard might have been more rigorous.

¹⁵ See TEODOR et al. 2013, (ample) report of the field survey in the area Ponorici, with elements of archeometric analysis of the burned materials.

the chalkstone being almost omnipresent in the area. The appearance of the same aspect – burned adobe with clear traces of a whitish material (see fig. 2.7) – had the sure gift of intriguing us; our attempt of breaking the burned clay boulder from the image, with two boot hits, failed, thus demonstrating a considerable hardness. To our great surprise, we found at the base of the slope chalkstone basins, at less than 20 m from the embankment's inferior end, clearly visible in ploughland, and a second one further on, at 127 m WNW from the same landmark, revealed by small unauthorized diggings (probably by users of detectors), at the foot of the slope. Back then we didn't understand why both were in the valley, but now we got it: there was the resource, calcareous concretions that appear at a certain depth, therefore easier to be found in the valley, where the water had carved in the superior geologic layers. Clarifications of this aspect were made later, in two distinct missions, labelled as "Putineiu mission" and "Coring mission".

A last episode, "Turnu Măgurele mission" consisted in searching a previously drone revealed Roman road, north of Urlui Valley. The track was long and unusually hard (especially for the car, see fig. 2.8). We failed in the attempt of finding the southern segment of the road, near Urlui rivulet; still the road was identified on the field, quite difficult, on the northern half of the investigated segment, as a very discrete shrivelling of the earth, sporadically accompanied by supposedly Roman building materials (including a brick fragment).

The research from Urlui Valley ended in a point east of Mocanului Valley, which is very important because it is the only one for which we know two Roman roads, plus the embankment, in a relatively restrained perimeter. In this point was made a new topographic section across the embankment, our desire being especially to describe the relationship between the embankment and the terrain around it (fig. 2.9); as we can easily see, despite the fact that the field is slightly sloped¹⁶, no ditches can be observed, on neither side of the embankment. The preserved height is, depending on the calculus method, between 0.86 and 0.75 m, at a dissipation of only 28.5 m; here, the profiling is a lot bigger than in other known parts, namely 2.8%. On short – this segment of embankment is relatively easy to observe, even from some distance.

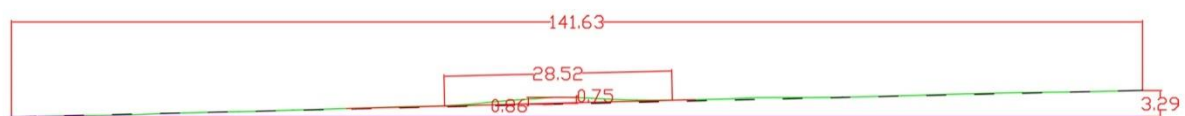


Figure 2.9. Topographic axis (NW-SE) across the Roman embankment in the point Mocanului Valley.

2.3. Putineiu Mission

2.3.1. Activities in the area of Putineiu village

The field activity developed on 16-17 October, with the purpose of completing the previous mission, including getting back to some points and gathering some details. The first objectives were connected to Putineiu village, hence the (conventional) name of the mission

¹⁶ At the axis' superior part the difference of level is 3.29 m, on a slope of 2.32%.



Figure 2.10. Field survey on the fortlet from Putineiu.

We came back on the place of the fort, south of the village. The surface of interest was partially freshly tilled (fig. 2.10). The fort's position in the field was for the first time established accurately¹⁷, the place being almost one meter higher than the surrounding surfaces. The density of archaeological materials is normal for a Roman fort (although inferior, for instance, than those found at Urlui Valley). The most important observation is that the fortification's paraments were raised in a similar manner with those from Urlui Valley, using burned adobe; here also there is a quantitative difference, in the sense that at Putineiu these traces are somehow more discrete. Worthy of signalling, the frontier embankment nearby (135 m east of the fort) doesn't have in its composition burned adobe, keeping the characteristics observed along the track from Danube until up here. The embankment is practically invisible in the proximity of the village, on the fort line¹⁸. It was observed in a position located 700 m SSE of the fort, as an extremely discrete shrivelling of the plain, accompanied by very few artefacts.

The second objective followed at Putineiu was Călmățui River grassland, seeking the military facilities which controlled the crossing of the most important water course between Danube and Vedeia. The previous literature never expressed its point about the subject, except for Pamfil Polonic¹⁹, who only said that the embankment could be seen in Călmățui grassland, without offering a description or topographic landmarks. An important suggestion concerning the place where this thing could happen is offered by Planurile Director de Tragerie (sheet 3637 from 1930), indicating the embankment alignment north of the rivulet; the most probable continuation would be, of course, in a face-to-face position. On the strength of these clues, taking profit – starting with April 2014 – of a better orthophotoplan²⁰ than the previous editions, we were able to sketch a more exact hypothesis concerning the layout of the embankment in the grassland (see fig. 2.11).

¹⁷ Although we have four sets of orthophotos, at which we can add those accessible on Google Earth or Bing, until now we were not able to locate the fort „beyond any doubt”. In our previous documentation (which derives from TEODOR 2013) the fort was located approx. correctly (with an error of approx. 15 m, considering the fort centre), but this fact was rather the result of luck than of a certitude.

¹⁸ He had disappeared from the landscape since Pamfil Polonic's times, who explicitly mentioned this thing. Not completely though, as long as it still appeared on Planurile Director de Tragerie (sheet 3637 from 1930). Anyway, today this segment of 600 meters is not visible on any of the accessible orthophotos.

¹⁹ We refer to the notebooks of the topographer of Grigore Tocilescu (the manager of the National Museum of Antiquities, at the end of the 19th century), remained unpublished until recently (TEODOR 2013, Appendix 1, for the passages referring to *Limes Transalutitanus*).

²⁰ We refer to the military orthophotos (2012), from which the National Museum of History benefits due to a protocol between the Defence and Culture Ministries.



Figure 2.11.

Situation in the grassland of Călmățui Rivulet, north of Putineiu village.

Legend: pink arrow – hypothesis of a watchtower; alignment of greenish arrows – „the brick road”. Line with squares – the supposed alignment of the vallum.

This was actually the second attempt of reaching to the supposed position of a watchtower (it has typical dimensions and a perfect localization reported to the – again supposed – alignment of the grassland embankment), using a new route. We failed the second time, half way, the field being extremely boggy.

In this situation, we appealed to a local, asking for help in order to attain our objective. Thus we met a pensioner, Sultan Gheorghe, who offered us very interesting information. We found out that the humidity level of the flood land is unusually high, our informer attributing this situation to the constant rains from spring and summer, the numerous springs that flow from the village to the grassland doing the rest of the job²¹. We cannot reach the position of the watchtower because it is in a less accessible area, thus inaccessible in a rainy year. Towards the grassland, on the direction of the river, there is still some kind of a path, a little higher, which our informer knew from his childhood, and which leads to the river; in the 50's the bridge didn't exist anymore, but in the water the pillars of an old wooden bridge could still be seen. The most interesting part of the information we received

²¹ Springs which explain thou the position of the village in a relatively high spot, at the edge of the terrace, but also relatively far from Călmățui.

concerned the composition of that „path”, which would have been „brick made”; questioned about the exact significance of the word „brick”, our man answered „burned adobe”, which is an extremely strong clue that we were dealing with a Roman road.²² We even walked about 200 meters on that higher path, but our guide assured us that we won’t get too far, given the humidity conditions, so we delayed, again, our attempt to reach to the river.

2.3.2. Activities in the area of Băneasa village

After Putineiu we have visited the neighbouring position from the north, in other words the embankment alignment north of Călmățui Valley, with access from the modern road to the village Băduleasa. We detailed the observations in a position placed approximately at midway between the aforementioned road and Călmățui Valley, where a tumulus is located in a position behind the embankment. As such the tumulus, which is quite flattened, doesn’t show traces of activities from the Roman times and is relatively afar of the embankment’s alignment (today superposed by a field road), namely at 50 meters. Traces of adobe and small materials appear as we get closer to the embankment, from a distance of 35 m of the embankment axis, their density increasing with the embankment’s proximity. We do not exclude the possibility that in that position there might have existed facilities connected with the watch over the frontier line. As for the embankment (more precisely the embankment’s sides, not superposed by the road), it already presents traces of burned adobe²³. It becomes more and more obvious that there are not two classes of constructions of clay, one „with burned adobe” and one „without burned adobe”, but only quantitative differences. We will return to these differences.

We made the next stop 2.3 km to the north, where is located the great fort from Băneasa (fig. 2.12). The archaeological materials scattered in the ploughland have been noticed 70 m before we reached the fortification, coming from the east. Considering the distance and the configuration of the terrain – completely flat – but also the high density of inhabiting traces, we are sure that outside the fortification there are also other kinds of facilities. We walked all along the southern side of the fort, observing two things worthy to remember: first the high density of pottery and building materials (including broken bricks and tiles); second – the high frequency of burned adobe, which accompanies the contour of the place, right at the paraments. It is the first place, coming from the Danube, where the frequency of the burned adobe – used as building material – is very high, being a striking thing, visible from the distance. Not just the frequency, but the size of the fragments of burned adobe is significant here, all the more so as the place is ploughland.

The southern side of the fort stands on a „ruscă”²⁴ (Rusca Fundaților), indicating a possible place of passage over Călmățui rivulet. We suppose that the civilian settlement should be as close as possible to the terrace – as the fort is – and eventually as close as possible to this crossing through the “ruscă”. A good place for a settlement would be on the southern side of the slope which is Rusca Fundaților; in exchange, it would be a position less protected militarily. This is why we tried our luck

²² Now, at the end of the first execution stage of the research project, we benefit of other information also, like those offered by the sedimentological probing (see Section 8 of the report), which confers the quality of quasi-certainty to the hypothesis formulated while on the field.

²³ We avoid the notion of „burned loam brick”, sometimes used indiscriminately in the usual archaeological language; loam is a construction material in which, along with clays, straw and animal excrements are added, as a binding matter. There is not a clue of such a burned material (discovered here with fine granulation, of the size of a lentil).

²⁴ Regionalism denominating a passage (natural or partially arranged) between a grassland and a high terrace. The name also appears in toponymy from Olt’s eastern bank (which is higher). In the places where the terrace is high, they are indispensable crossing points, in other words passages of strategic interest. The fort’s positioning, with one side supported by the *ruscă*, is significant for the effort of blocking the natural fords of Călmățui Valley, the only significant water course between the *limes* and the line of Olt.

in the opposite direction, north of the fort. Walking on a distance of 100 m north of the fort²⁵, we headed along the direction of a mound situated at 200 m NNE of the fortification; on the same track we have found various material traces of inhabiting, but not at the level we would expect for some *canabae*.

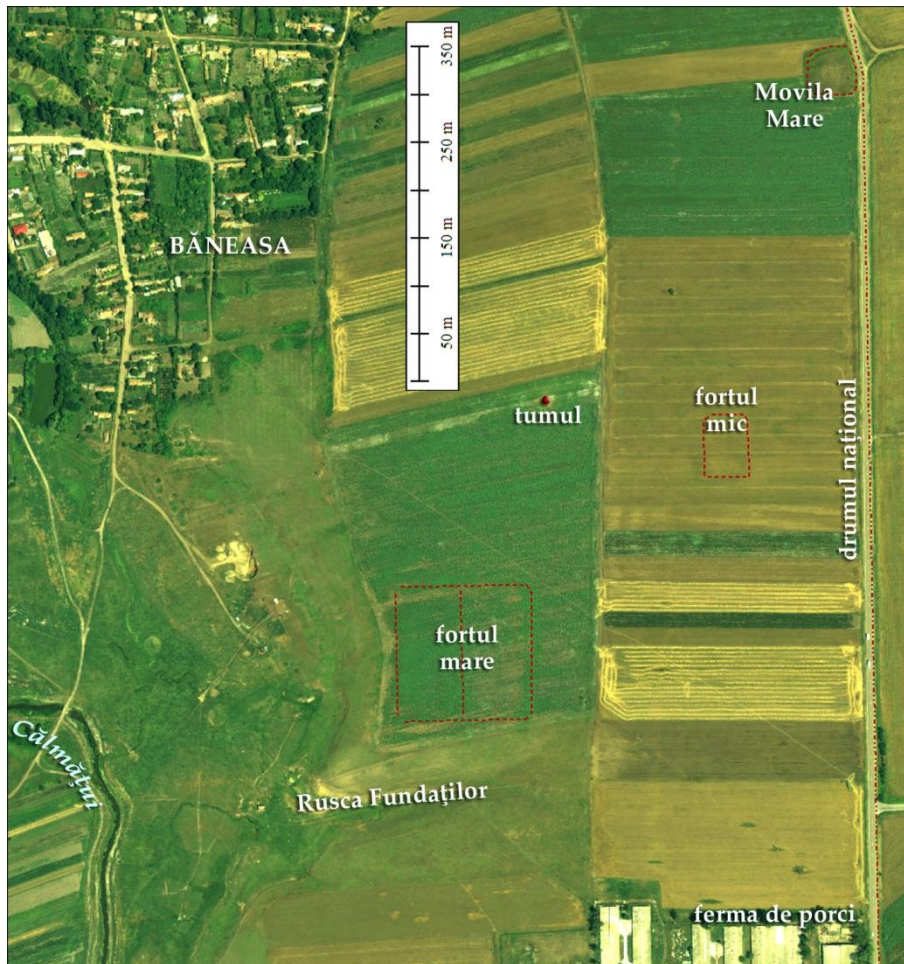


Figure 2.12.

Plan of the monuments from Băneasa.

From the tumulus we headed towards the fortlet from Băneasa, situated 220 m NE of the large fort. The surface was recently tilled and perfectly visible, the high surface being visible from afar. Unlike at the big fort, here we haven't seen any burned adobe at all, and the archaeological remains are very rare, which led us to the idea that the precinct was used for a limited period of time²⁶.

2.3.3. Field survey west of Roșiorii de Vede.

The main objective of these linear field surveys was to cover areas that escaped the first quests in the area, those from autumn 2012. We envisaged the "double embankment" situated west of the industrial area of the city, after which were made several verifications of "Polonic's hypothesis".

²⁵ The western side of the fort, positioned right on the edge of the terrace, has the same construction features as that on the south, previously described.

²⁶ The theory supported by Ioana BOGDAN CĂTĂNICIU (1997) asserts that the fortlets from the pairs of forts (Băneasa, Urlueni, Săpata) are earlier.

We will begin by presenting briefly the visit to the so-called “double embankment”, situated north of Oltului Street (with its prolongation towards west – Uzinei Electric Str., see fig. 2.13). The name was given due to its appearance on the orthophoto, which suggests the presence of a ditch between two embankments. It is hard to get to this area – although very close to the city – because of the roads’ bad condition, but it is also difficult to see anything useful due of the unharvest corn and of the wild fallows. We managed yet to establish, on a couple of field stripes with better visibility, that there was only one embankment, flattened (with a profile smaller than 0.5 m), without visible traces of a ditch on one side or the other. The situation from Roşiori, north of Oltului Street, resembles quite well with the one observed north of the Deep Valley (between the mounds Traian Nord and Ciuperceni), described in a previous sub-section (2.2.2).

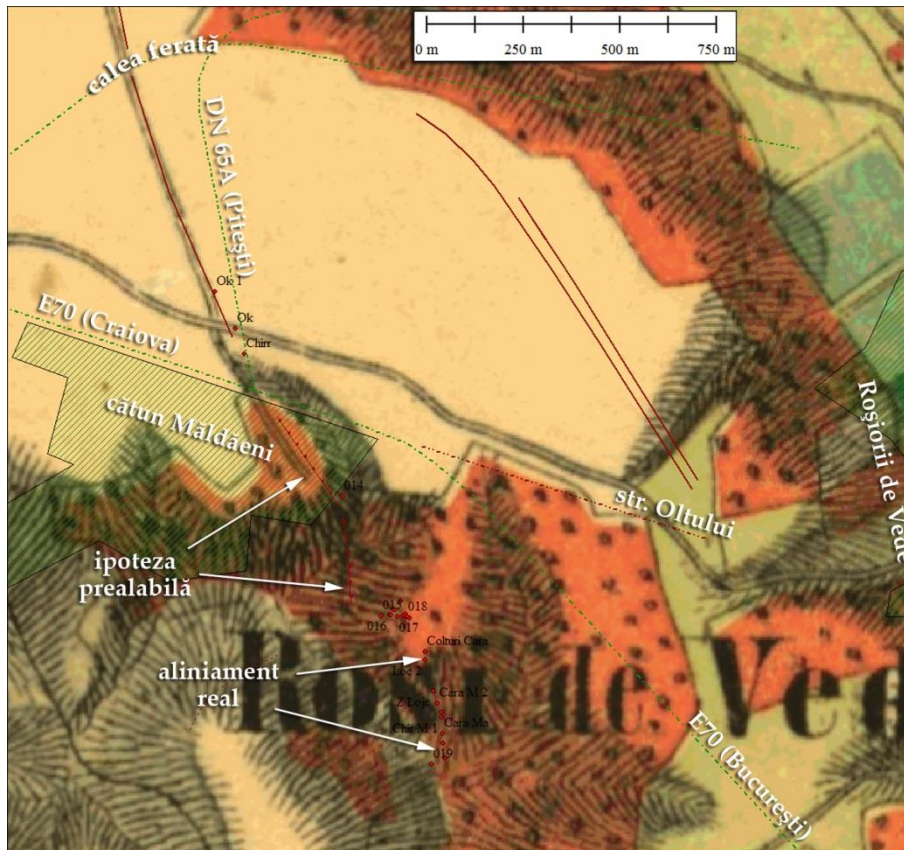


Figure 2.13.

Situation west of Roşiori de Vede.

Map support – Szathmári Map (data gathered at 1857); with red – the vineyards of the city.

Legend:

- dark red lines: observable traces on orthophotoplan, confirmed as Roman linear works;
- interrupted green lines: present communication lines;
- red dots – GPS waypoints;
- hachures: actual localities.

The most important objective in the area was the so-called “Polonic hypothesis”²⁷. Briefly, between the notes left by Polonic, at the end of the 19th century, and what we can observe on the available orthophotos, there is considerable difference: while Polonic asserts that the embankment passes relatively far from the city, crossing Bratcovului valley at 2 km west of Roşiori, the traces which today are visible on aerial imagery show an embankment which goes perpendicularly to the city and which can be traced all the way to the city cemetery. The hypothesis we have worked with, ever since the book from 2013, is that what we see today on the monitors and the layout described by Polonic, might be in fact two different things.

In order to clarify this working hypothesis, an important step was to study Szathmári map, which has become a public resource (<http://www.charta1864.ro/charta.html>) during the winter 2013-2014, and which presented, west of the city, an interesting situation, to say the least: right to the north of

²⁷ For more detailed comments see TEODOR 2013, 158-160.

Bratcov valley, where today there is a hamlet²⁸, but at mid-19th century there were only some vineyards (invoked by Polonic also), starts a road (which appears from nowhere!), heading north; beyond the railway we see today (see fig. 2.13) this road superposes the trace of the Roman embankment on orthophotos. South of the railway, the trace from the orthophoto is a little doubtful²⁹, so the existence of the embankment had to be confirmed on the field.

The ancient embankment appears in opened field right on the north of the crossroad of E 70 (Craiova) and DN 65A (Pitești), being verified exactly in the area of that crossroad, on a length of approx. 200 m. The GPS landmarks were confirmed in the field, observing a small bump, having the already known amplitude. Just very discrete fragments of burned adobe were observed along the objective (a common note at all the embankments near Roșiori, but also from Dealul Scrioaștei, according to the observations made during the field survey from 2012).



Figure 2.14. Landscape south of Măldăeni hamlet, view heading south.

The arrows mark the track of the Trojan beyond Bratcov Valley. On the background – Pneumophthysiology Hospital.

Once this incertitude clarified, we had only to elucidate the track towards Bratcov valley, in order to check the “Polonic hypothesis”. The research moved south to the Măldăeni hamlet. There were wide crops of unharvest corn, making observation impossible. We looked for the exit towards Bratcov rivulet, hoping for better conditions. Heading towards east, along the field road which goes parallel with the river, but approximately 200 m north of it, we found what we were looking: traces of burned adobe, pottery and construction materials. These traces were distributed rather radially, on a diameter of approx. 40 meters, representing the distribution model of the remains of a watchtower. From this point we headed straight to the course of the river, hoping we will benefit of an „aerial effect” (visibility from the distance), due to the contraposition of the slopes of the valley’s two sides; this thing actually happened (see fig. 2.14).

²⁸ Depending on the consulted source of information, the group of houses (in rapid increase) belong either to Măldăeni village (situated approx. 2 km west), either to Roșiori city (which is 2 km east), but which is nevertheless separated by the industrial platform.

²⁹ Equally true is the fact that this segment of embankment, although hard to see on orthophotos, is documented by PDT (Planurile Director de Tragere).

Crossing Bratcov rivulet is difficult (although the water flow is low), so we stopped the research on the river's north bank. Returning to the hamlet, using the fact that we knew the end of the Trojan on the valley's southern bank, we managed to find its continuation toward north, thus closing the observations before the burned tower, previously discovered. The track of the ancient construction is quite well profiled, but only on the first hundred of meters north as the water flows, but the rest of the track towards the village is marked with various construction materials, including Roman brick and pottery.

We had to clarify the track of this construction between the known segment from Bratcovului Valley and the known track – for some time now – south of the Hospital. In this last area the Roman roads split, one heading towards the city and the other coming towards Măldăeni hamlet; the first is the one we have noticed, years ago, on orthophotos, while the other is attested by Polonic, but unfound on the field until now.

We also had to clarify, in terms of geographic coordinates, the track of the monument in the area north of the hospital (because it doesn't result with accuracy from the photo from fig. 2.14).

Another unclear aspect was the nature of the construction which connects the hospital area to Măldăeni hamlet. Where it could be observed outstandingly (on both sides of Bratcov rivulet) it is well profiled (it has approx. 0.7 m height), but with a very modest width, of approx. 4-5 m, a fact which is unusual. At this moment, our working hypothesis is that we are dealing with a road, not a frontier embankment. Indeed, for the troops who moved along the frontier, the passage through Măldăeni is considerably shorter than the one through Roșiori, being therefore preferable. Thus this is not a road that served to the defence of the frontier (this should be right near the embankment), but a strategic road, for the troops heading to great distances.

The planimetric correlation between the track west of the hospital and the track near the hamlet was partially accomplished afterwards, during a drone mission.

2.3.4. Drone mission west of the Pneumo-physiology Hospital

During Coring Mission (6-9 November 2014, see Section 8) it happened to have a sunny day. We called the "drone" team from Bucharest, exactly for the purpose of accomplishing the second mission of the Experiment within the perimeter Mocanului Valley, the forecasts for the rest of the month being pessimistic³⁰. After its execution, as the equipment was already here, we asked for a flight west of the Hospital, in order to make the connection between what we observed in Măldăeni hamlet (see previous sub-section) and the area of the experiment.

Due to the dimmed luminosity, the orthophoto was less expressive than we hoped, but the terrain model obtained in photogrammetry (fig. 2.15) gave us satisfaction, revealing the track of the Roman objective on the field (it is not clear now whether it is a road or an embankment). We have to mention that at that moment the drone was the only possible mean we could use, the field being soaked by the thick fog from the previous days³¹.

This last drone mission, for 2014, allowed the confirmation of the "Polonic hypothesis"³² (fig. 1.16), having now a clear track of the western branch of the Roman facilities. After identifying, on the field, the two variants, lots will remain to be done in order to define each of these tracks. The field survey

³⁰ And we are not referring only to the meteorologists' (be they Romanian or foreign) forecasts, which changed their minds several times during the month, but to a local's warning (the archaeologist Pavel Mirea from Alexandria), who said that „if the fog comes down, it will remain as such for the rest of the month”. Unfortunately, he was right.

³¹ We made a test while lifting the targets associated to the flight; one person who stood in one place more than three seconds could sink up to the ankles!

³² More details about this in the previous sub-section of the report.

made south of Măldăeni hamlet (sub-section 2.3.3) allowed the sketching of the hypothesis that this western branch of the facility might be a road, if we consider the small apparent width.



Figure 2.15. Terrain model (DEM) obtained through photogrammetry, via UAV, west of the Pneumo-phtysiology Hospital Roșiorii de Vede.

The differences of level between the high plain and Bratcovului Valley (partially represented in green) – approx. 20 m (here, in image, under 10 m).

The objects which are darker in colour represent high bushes or piers. The length of the model – cca 800 m.

Unclear things will also remain in the area between the two orthophotos from fig. 2.16; the military orthophoto (2012) is not, in this case, very happy, and the Google Earth image suggest that the two lines (embankment in the east and the road in the west) intersect, which is absurd, but this things require new analysis, including geophysics in the area.

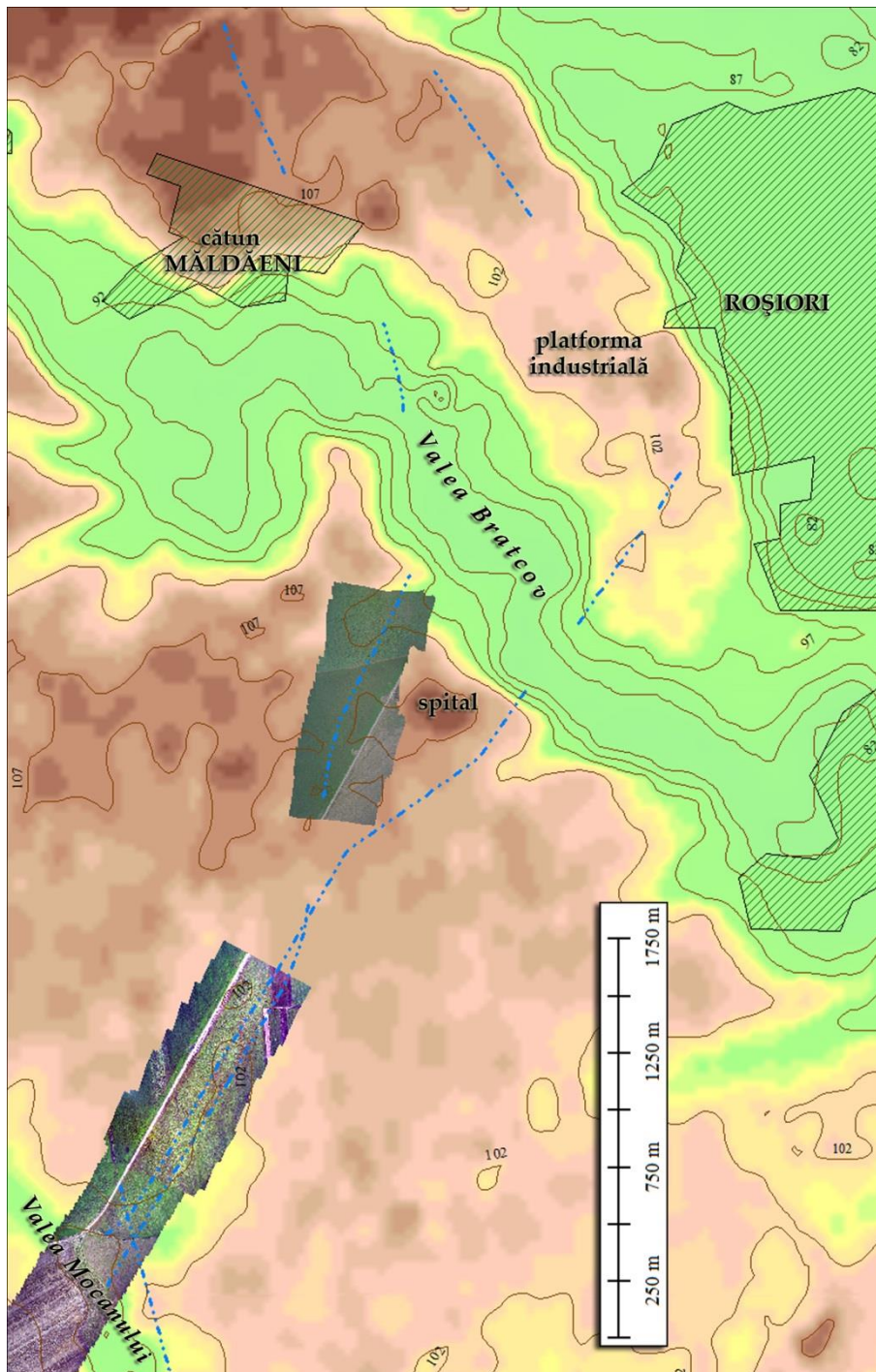


Figure 2.16.

Terrain model west of Roșiori. Fragments of linear constructions.

EU-DEM (29 m) with contours at 5 m.

Orthophotos made by drone (November) in the areas Valea Mocanului and Hospital-west.