

THE TROESMIS-PROJECT 2011-2015: RESEARCH QUESTIONS AND METHODOLOGY

Cristina-Georgeta Alexandrescu – Christian Gugl*

Abstract: Die römisch-byzantinische Siedlung *Troesmis* zählt zu den größten antiken Stätten Rumäniens bzw. der unteren Donau. Sie lag im Nordwesten der rumänischen Dobrudscha und nahm eine strategische Schlüsselposition am unteren römischen Donaulimes ein. Die Siedlung befand sich am rechten Steilufer der Donau, etwa 15 km südlich der heutigen Stadt Măcin, dem antiken *Arrubium*, und 4 km nördlich des Dorfes Turcoaia (jud. Tulcea), unweit einer im 19. Jh. bestehenden Lokalität namens Iglîța, die heute nicht mehr existiert. Das weitläufige Ruinengelände, das durch zwei heute noch gut sichtbare Befestigungsanlagen, der sogenannten Ost- und der Westbefestigung, beherrscht wird, erstreckt sich von der Donau ausgehend nach Osten bis zu den Ausläufern des Măcin-Gebirges. Diese archäologische Stätte ist als eines der wenigen unverbauten römisch-byzantinischen Großsiedlungen an der Rhein- und Donaugrenze ein archäologisches Denkmal von überregionaler Bedeutung.

Im Rahmen eines internationalen Projekts mit Partnern aus Bukarest, Tulcea, Wien und Innsbruck konnten durch geomagnetische Messungen das lange gesuchte Lager der *legio V Macedonica* sowie Teile der Lagervorstadt lokalisiert werden. Mithilfe von Oberflächensurveys, luftbildarchäologischen Kartierungen und Airborne-Laserscanning war es möglich, in den Jahren zwischen 2011 und 2014 die Ausdehnung der Siedlung sowie der Gräberfelder einzugrenzen. Aufgrund der epigraphischen Überlieferung können wir in *Troesmis* davon ausgehen, dass neben dem Legionslager und den *canabae* noch ein weiterer ziviler Siedlungsraum existierte, der über Selbstverwaltungsrechte verfügte. In dem zweiten Teil des Projektes, seit 2015, ist der Frage nachgegangen, inwieweit man diese in den Inschriften fassbaren Verwaltungsräume im archäologischen Befund wiederfinden kann.

Key words: *Troesmis*, *legio V Macedonica*, *castra*, *municipium*, necropolis, roads, survey, geomagnetic prospections.

Since 2011, Institutul de Arheologie ‘Vasile Pârvan’ in Bucharest together with the Institute for Studies of Ancient Cultures of the Austrian Academy of Sciences in Vienna and the Archaeological Institute of the University of Innsbruck in cooperation with Institutul de Cercetări Eco-Muzeale ‘Gavrilă Simion’ Tulcea, are working in *Troesmis*. Our interests in this region focus on the most significant settlement transformation processes, from the Roman imperial age to the late Antiquity and the Byzantine period¹. During the last decades scientific research in the Northern Dobruja mostly dealt with the history and archaeology of sites from the 4th to the 7th century AD².

Most of the Roman fortifications mentioned in the *Notitia Dignitatum* – if not to say all of these sites – should have predecessors going back to the Imperial age or even before. *Troesmis* is one of them being situated on the steep right bank of the Danube, some 15 km to the south of the modern city of Măcin (the ancient *Arrubium*) and 4 km to the north of the village of Turcoaia, both in Tulcea County (fig. 1). In front of *Troesmis* the meandering Danube forms a broad flooding zone. In this northernmost part of the Roman province of Lower Moesia there are only a few possibilities to cross the Danube: one is north of *Arrubium*, another at *Dinogetia*, at the bend of the Danube, and a third at *Noviodunum*. Several mountain ranges, especially the Măcin-mountains in the Northwest of the

¹ Alexandrescu *et alii* 2014; Alexandrescu, Gugl 2014a; Alexandrescu, Gugl 2014b; Alexandrescu, Gugl 2015.

² Zahariade 2006.

* Institute of Archaeology “Vasile Pârvan”, Bucharest, cgetalexandrescu@gmail.com; Austrian Academy, Institute for the Study of Ancient Culture, christian.gugl@oeaw.ac.at.

Dobruja, are forming a barrier between different parts of this landscape. The area of today's village Horia definitely marks a strategic keyhole position in the hinterland which gives easy access to all major frontier zones. It is interesting that *Troesmis* as the most important military stronghold in the 2nd century AD is not placed around Horia, but directly at the border in the Northwest.



Fig. 1: The northern Dobrudja in late Antiquity: topography and late-antique fortifications (© 2016 Gugl/ÖAW).

The area of *Troesmis* is archaeologically an almost untouched zone (**fig. 2**), extending from the Danube to the Western slopes of the Măcin-mountains. The main destructions were caused by an agro-industrial complex and the water pipe built in the 1970s. The so-called Eastern and the Western fortification are today the most prominent monuments at the site. The first is dated to the fourth century, the second is a Byzantine construction. Archaeological research started there as early as the 1860s by several French missions³.

Around *Troesmis*, river and pluvial erosion certainly changed the landscape a lot. The anthropogenic activity was however the most intrusive, even if there is no modern settlement on the ancient site. Stone robbing started very early with the result that only the core of the walls remained on place. The relief of the terrain still shows the traces of these extensive stone quarrying activities, especially at the Eastern and the Western fortification.

The rise of air photo interpretation in the 1970s brought about new information concerning the area in between the two fortifications (**fig. 3**). On black and white orthophotos of the 1950s and 1960s one could recognize three ditches on the broad Loess plateau, already documented in the late 19th century by the topographer P. Polonic and by D. More. A.-S. Ștefan collected information derived from aerial photographs and compared them with the observations of Polonic and his own observations on the site⁴. By this way a section of the Roman aqueduct, called "Valul lui Traian", was precisely mapped. Ditch I and II (using Ștefan's designation of the features) are connected with the Western fortification, defining the outlines of the Byzantine city (**fig. 2-3**). The outermost ditch is number III. Its function remained an open question. The map of Ștefan⁵ was the starting point of our archaeological activities in *Troesmis*.

³ Alexandrescu 2013.

⁴ Ștefan 1971; Ștefan 1974, 98-100.

⁵ Ștefan 1971, fig. 10.

The two fortifications were an abundant source for imperial age inscriptions. Certainly there are a lot of epigraphic monuments related to the *legio V Macedonica* which established its fortress there in the Trajanic period, as attested also by Ptolemy (*Geogr.* 3.10.5). Several inscriptions mention the *canabae legionis* which were administered by *magistri* and *quinquennales*. This duty was performed by former legionaries who held a magistrature both in the *canabae* as well as in another local authority which had its own *ordo Troesmensium* consisting of *decuriones*. Concerning this third authority we know about Roman citizens living in this *vicus* or *civitas*. At the same time veterans and Roman citizens formed also part of the *Troesmis canabae*⁶.

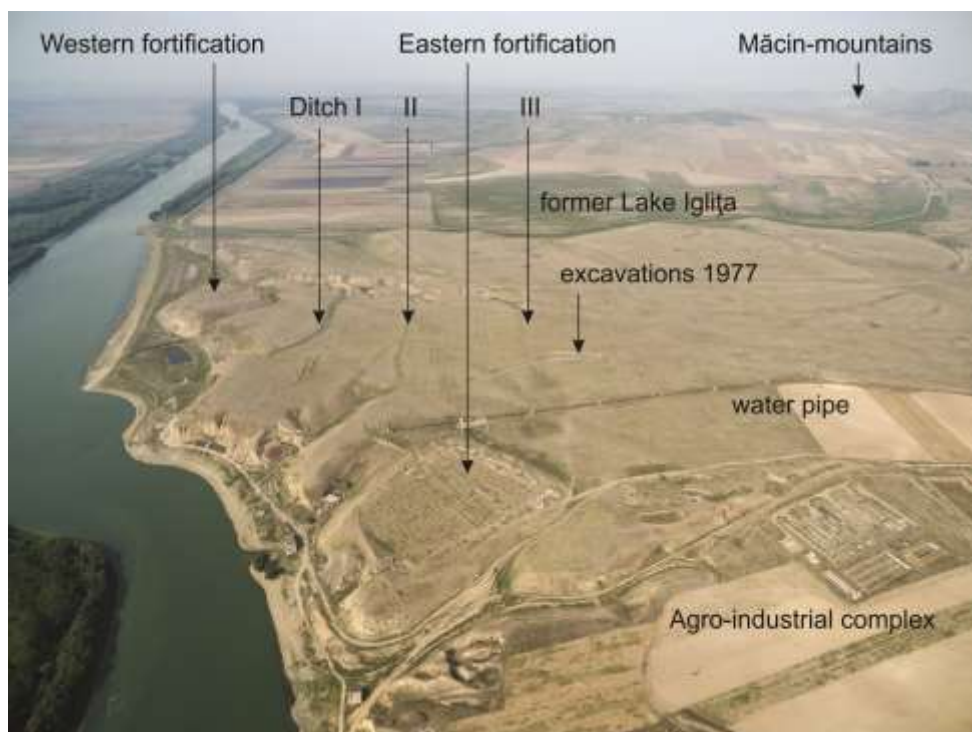


Fig. 2: Troesmis - air photograph of the site seen from the southeast (© 2015 Gugl/ÖAW).

This three communities, according to the epigraphic evidence, coexisted until the 160s when the *legio V Macedonica* left *Troesmis* to take part in the Parthian war of Lucius Verus. Some 15 years later, after the legion had established its permanent garrison at *Potaissa* in *Dacia*, a *municipium* was installed in *Troesmis*⁷. Therefore, during the 2nd and 3rd century we have to consider four administrative units in *Troesmis*.

Our first goal was to localize the legionary fortress which definitely is most important for the understanding of the settlement development. We detected significant parts of the fortress in 2011 using geomagnetic prospection⁸. Three sides of the fortress could be recognized by the measurements. The ditch in front of the rear side of the *castra* is identical with the ditch III of A.-S. Ștefan (**fig. 2-3**). Due to topographical considerations and in comparison to other contemporary fortresses the *Troesmis castra* should have been one of the smaller legionary bases known so far. On **fig. 4** the green line marks the most probable way of reconstructing the front side which faces the Danube, meaning that the most part of the plateau between the two later fortifications was covered by the legionary fortress.

⁶ Alexandrescu, Gugl 2015, 251 f.

⁷ See the contribution of W. Eck in this volume.

⁸ Alexandrescu *et alii* 2014; see the contribution of G. Grabherr and B. Kainrath in this volume.

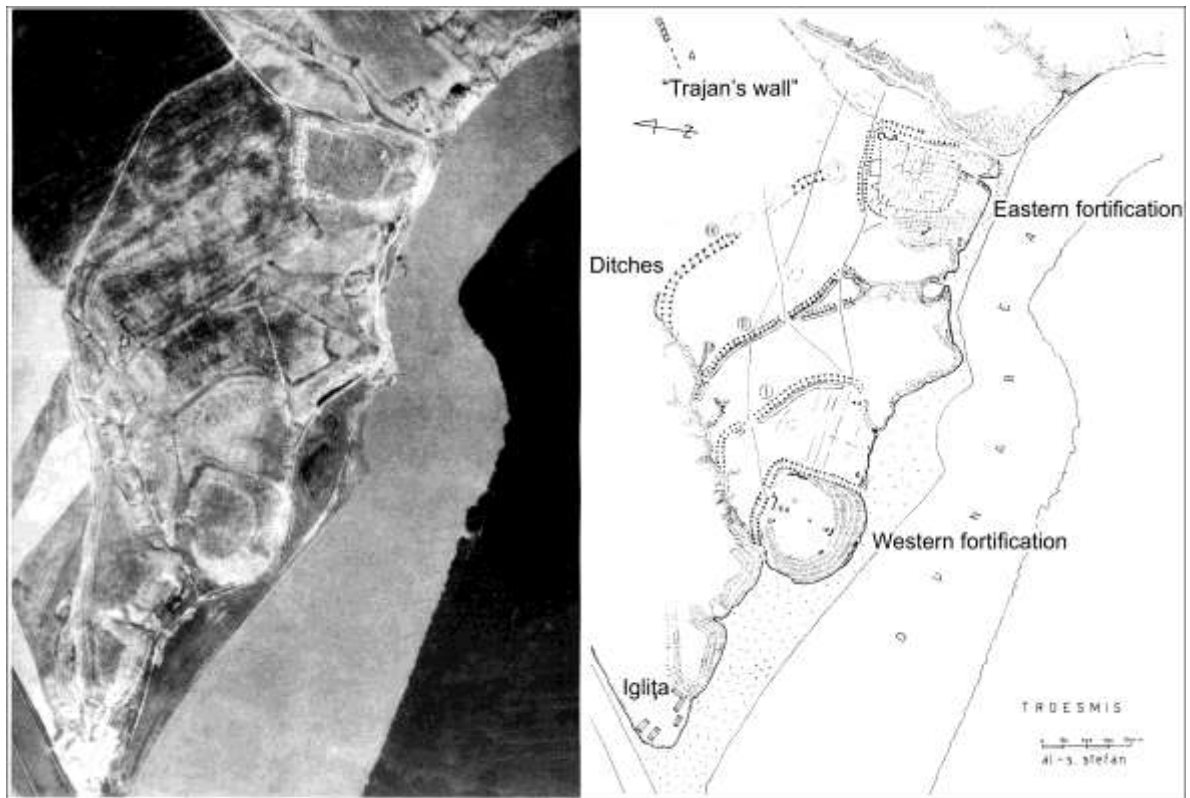


Fig. 3: Interpretation of an air photograph of 1969 by A.-S. Ștefan (Ștefan 1971, fig. 9-10).

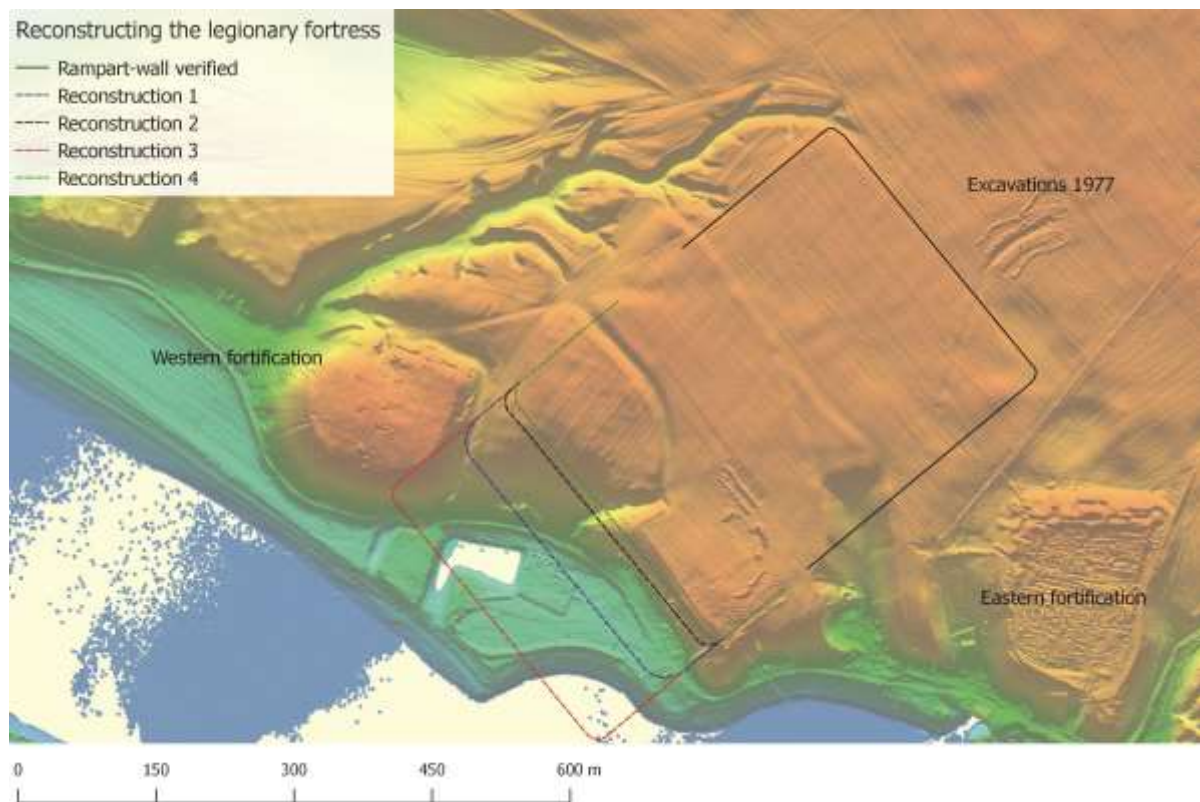


Fig. 4: Reconstruction possibilities of the front side of the *Troesmis castra*. The terrain map is based on Airborne Laser Scanning data from 2013 (© 2015 Gugl / Kainrath / Grabherr).

After the discovery of the *castra* our interest focused on possible settlement areas around the legionary base (fig. 5). Between 2011 and 2015 different prospection methods were used to get more information on the topography and archaeology of the *Troesmis* area. To get an overview we started with remote sensing data. In 2013 we initiated LiDAR measurements done by Airborne Technologies from Wiener Neustadt which delivered a very precise digital terrain model, with an extent of approximately 28 km². In the meantime the ongoing archaeological field surveys, both line walking and raster survey, cover an area of about 600 ha (fig. 6).



Fig. 5: Simplified map of the geophysical survey in Troesmis. Highlighted are the legionary fortress, the civilian settlement and the graveyards (© 2015 Gugl / Kainrath / Grabherr).

With the help of the geomagnetic survey a first reconstruction of the settlement around the fortress is possible. We identified built-up zones in the North, the Northeast and East of the *castra*. Extended graveyards were situated further to the Northeast and the Southeast. For the first time ever we could reconstruct the internal structure and the topographic context of a graveyard characterized by enormous burial mounds. Today we can say that most of *Troesmis* has been archaeologically prospected. We have very precise expectations about the area of the legionary fortress, about the extents of the settlement in front of the *castra* and the location of the graveyards.

In the assumption that the Roman *municipium* took over the location of the former *castra*, we can consider that the borders of the city could be very well defined. To reach this goal it is necessary to combine different prospection techniques. In the core zone of *Troesmis* we are able to compare data sets which offer different kinds of information. The distribution of artefacts collected by a line-walking survey turned out to be very useful to get a first impression of the varying settlement activity. On fig. 7 the relation between tiles and bricks (in red) versus ceramic vessels (in green) is mapped. Moving out from the legionary fortress to the Northeast the density of sherds diminishes after some 500 m. This is the area where the built-up zone ends and the graveyards begin as shown by the geomagnetic results. Furthermore, the collected assemblages could provide basic dating evidence, illustrating at least general trends of settlement chronology (fig. 8).

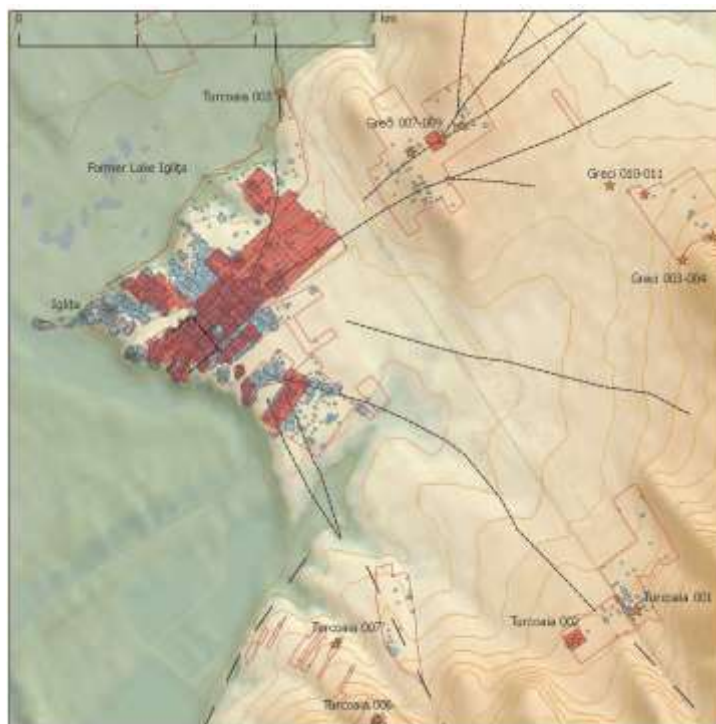


Fig. 6: Artefact distribution (in blue) and areas surveyed by geomagnetic prospections (in red) around Troesmis. The ancient road network is represented by dashed black lines. The orange asterisks mark possible archaeological sites (© 2016 Gugl / Mandl / Waldner).

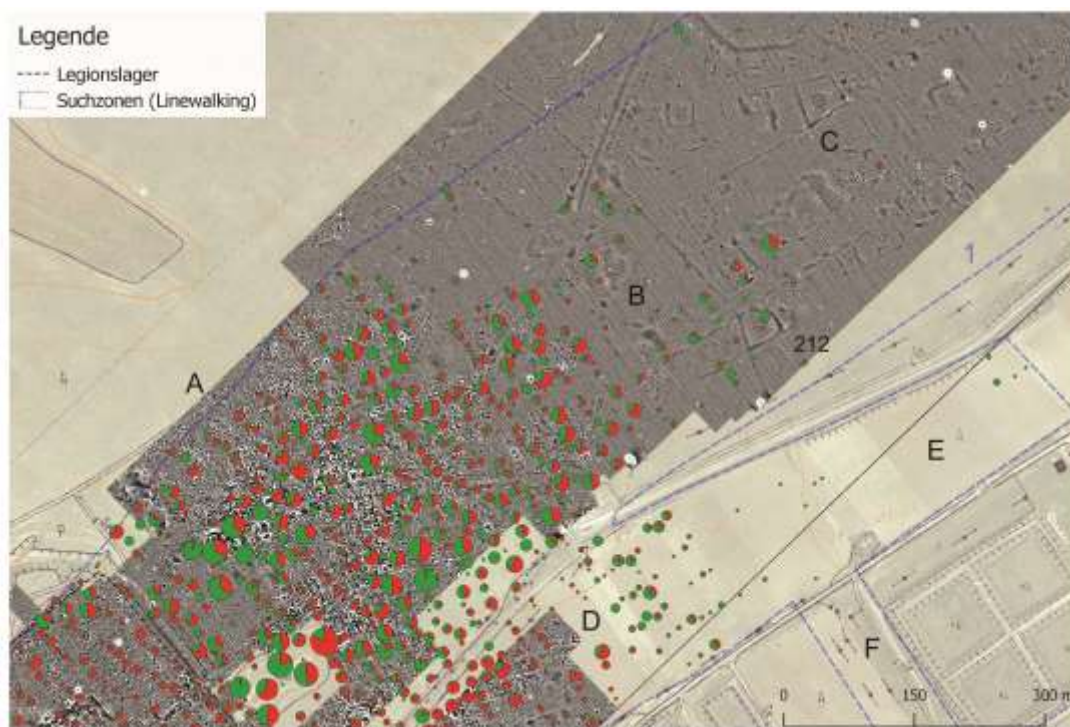


Fig. 7: The results of the geomagnetic survey and the line walking survey between the legionary fortress and the areas to the northeast. In green: distribution of ceramic vessels, in red: bricks. A, D: civilian settlement ("canabae"), C: graveyards with tumuli, E-F: possible graveyards, 212: ditch separating the graveyard from the inhabited area (© 2013 Gugl / Kainrath / Waldner).

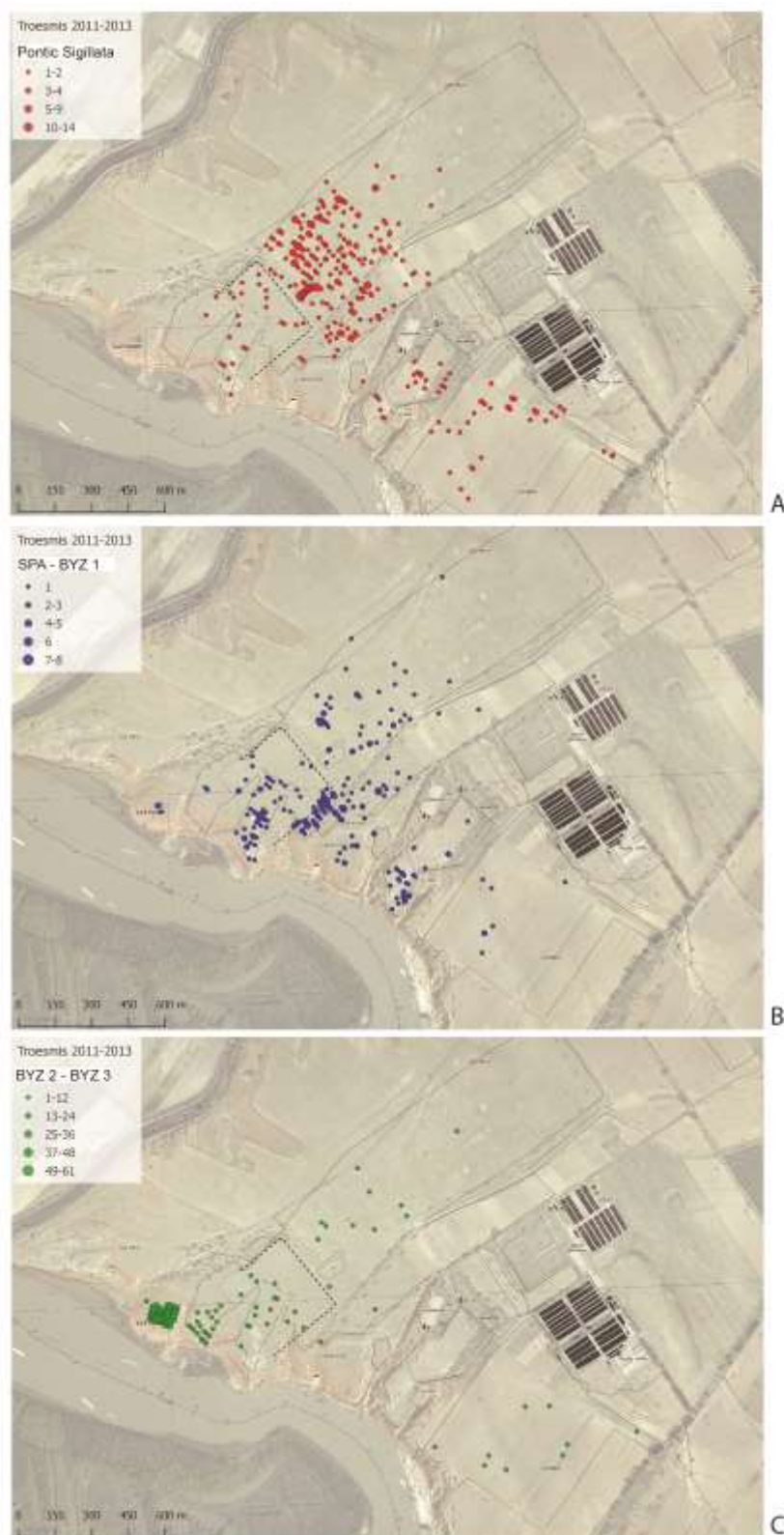


Fig. 8: Artefact distribution from the survey campaigns 2011-2013. *A* - Pontic Sigillata of the 2nd and 3rd century AD; *B* - artefacts of the 4th to the 6/7th century AD; *C* - artefacts of the 10th to the 12/13th century AD. The orthophotos and topographic maps are provided by ANCPI (© 2015 Gugl / Waldner).

At this point it might be useful to turn to a more theoretical approach by putting *Troesmis* into context with other legionary bases in the Northern provinces. During the first and the early second century AD one could observe a specific settlement pattern at legionary garrisons which is called settlement duality⁹. This means that next to the fortress and the *canabae* another settlement existed which was clearly separated from the military zone. At many legionary bases until the age of Trajan this could be archaeologically observed. Some sites start with a separate civil settlement ("*vicus*") which then becomes a *municipium* and later on a *colonia*, like *Carnuntum* in *Pannonia superior* (fig. 9).



Fig. 9: Virtual model of *Carnuntum* based on excavation and air photo interpretation data (© 7reasons).

In contrast to this line of development we know about legionary garrisons without a separated civilian settlement. Archaeologically there is no *vicus* detectable within a distance of about 2-4 km from the fortress. This should be the case at places like *Eburacum* and *Lauriacum*¹⁰. This settlement model describes the fact that especially at fortresses from the Antonine period onwards a second civilian center apparently is missing. H. Ubl proposed for *Lauriacum* in *Noricum* that the civilian zone around the legionary fortress was divided into two administrative units: into the *canabae* and the *municipium*, separated by a topographic feature like a creek. For archaeologist it's very hard if not impossible to distinguish these differently administered settlement areas unless there is a very complete map available, on which are to be identified distinct building types like *fora* or territorial markers like boundary ditches.

For instance, at the four legionary bases in *Pannonia* (*Vindobona*, *Carnuntum*, *Brigetio*, *Aquincum*) there is a clear separation between the civilian and the military zone. In *Aquincum* a legionary garrison was established under Domitian. In the area of the later Hadrianic *municipium* pit houses were recently discovered indicating an earlier settlement probably inhabited by indigenous people¹¹. Naturally there were close interactions between the *canabae* and the *municipium* which became a *colonia* under Septimius Severus. Inscriptions even mention magistrates who held a public office in both administrative authorities¹².

We meet a similar situation in *Carnuntum*. The *Carnuntum* legionary fortress was built under the reign of Claudius at latest. Besides the *canabae* a separated *vicus* existed being covered by the later

⁹ Mócsy 1953, 184-186; Petrikovits 1960, 63; Vittinghoff [1971] 1994, 142; Piso 1991; Gugl 2013, 173-178. - New evidence for the discussion of administrative boundaries at Carnuntum cf. Gugl *et alii* 2016, 37-40 fig. 10.

¹⁰ Gugl 2013, 175-178 fig. 109 (*Eburacum*); 186-192 fig. 118 (*Lauriacum*).

¹¹ Groh *et alii* 2014, 384-386 fig. 13; Láng 2015.

¹² Gugl 2013, 175-178 fig. 102 (*Carnuntum*); fig. 103 (*Aquincum*); fig. 104 (*Vindobona*); 186.

Hadrianic *municipium*. A representative forum was placed in the city center, like in *Aquincum* the *colonia Septimia* of *Carnuntum* had a town wall, too¹³.



Fig. 10: Tumuli and ancient roads network around *Troesmis*: roads S01-S11, tumulus T62 and dominant hilltops in the vicinity of *Troesmis* (A-D). The terrain map is based on Airborne Laser Scanning data from 2013. The orthophotos are provided by ANCPI (© 2015 Gugl/ÖAW).

In *Troesmis* epigraphic sources mention not only the legionary fortress but also the *canabae*, a *vicus* or *civitas* and the *municipium*. As archaeologists we could try to find settlement areas dating to the imperial age which are important to discuss such issues. It is impossible to extent geophysical prospection beyond certain limits, so other prospection methods like field walking and remote sensing become most relevant. On this basis, we could reconstruct the historical road network including graveyards or burial mounds which could be situated some 3-4 km away from the legionary fortress (fig. 10-11). In the research area, we haven't discovered so far an archaeological site which might represent an administratively independent *vicus* of the 2nd century. Although, during the last two years intensified field walking brought first results. Several new Roman sites were discovered which could be classified in a preliminary way according to the collected artefacts and the varying topographic contexts (fig. 11). Two sites are definitely linked to the Roman water supply. They can be found on the Western slopes of the Măcin-mountains or close to the bottom of the mountain (fig. 11: 1-2). Three sites stay in close contact with the main roads. Concerning topography they may be rural estates (fig. 11: 3-5). On the contrary, there are another three to four sites which share a rather remote location. Most of them aren't in line of sight with the fortress or the city. Instead, they were part of a tributary or a separated basin, mostly all of them being situated on the bottom of a slope (fig. 11: 6-9). One newly discovered site lays on a hilltop, some 3 km away from *Troesmis*, approximately 80 m above the surrounding area. This particular area might have been severely affected during the last 100 years by different works related to the granite quarries nearby (fig. 11: 10).

¹³ Humer, Kandler 2003, 8 f. Abb. 4; Kandler 2004, 36-40; Maschek 2012.

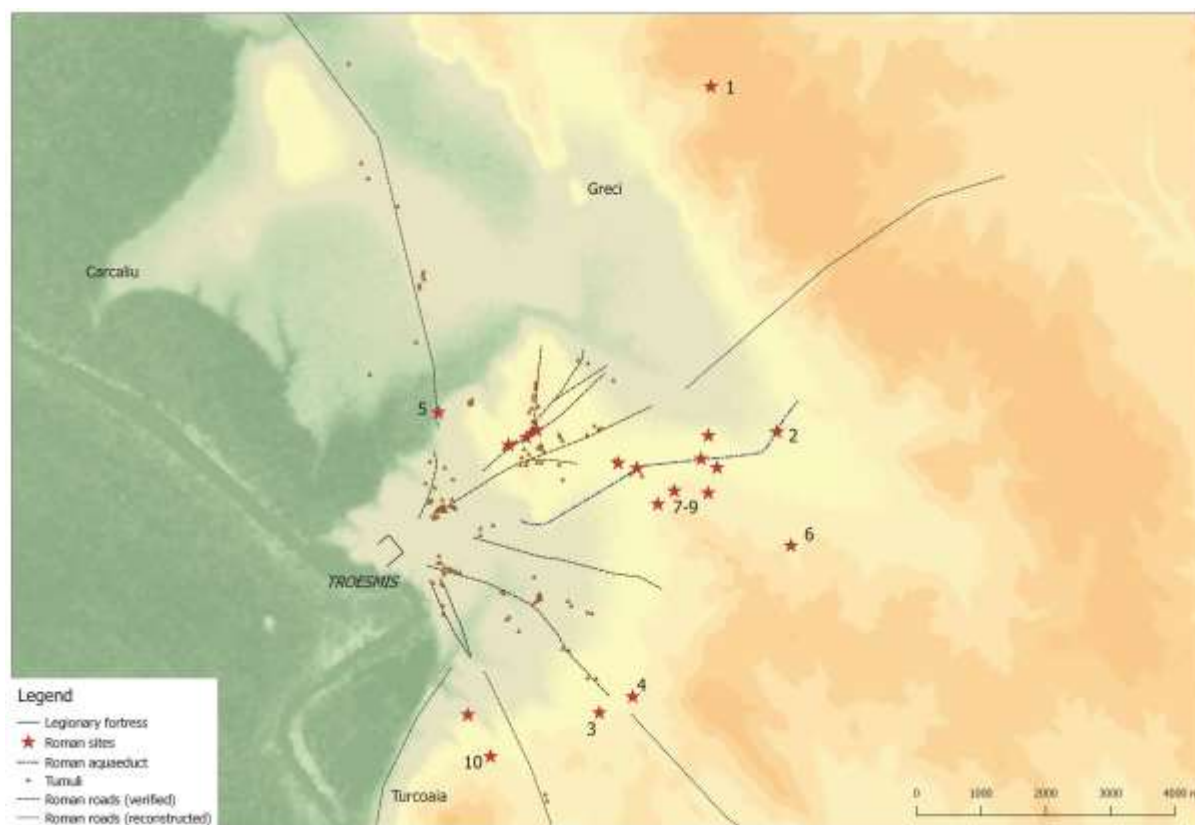


Fig. 11: Tumuli, line of the Roman aqueduct and ancient road network in the hinterland of *Troesmis*. The terrain map is based on SRTM data (© 2015 Gugl/ÖAW).

However, it remains unclear where we should locate the site of *Troesmis* first mentioned in the Augustan age¹⁴. An early settlement in the area of the modern hamlet Iglîța or the village Turcoaia has not been discovered yet, although there are a few archaeological artefacts of early date from the area, including the Western fortification (fig. 12)¹⁵. So, if there is no separated *vicus* as we might expect, we should consider the second possibility that it formed part of the civilian settlement around the fortress. Relating to the actual state of research this administrative unit would not be archaeologically identifiable.

The same problems of identification occur for the time after the legion left and the *municipium* was established. The legionary fortress was still there with all its working infrastructure. We think that it's very unlikely that the military garrison remained in use for several decades, abandoned by *legio V Macedonica* but managed by detachments of *legio I Italica* operating out from *Novae*¹⁶. At latest, with the foundation of the *municipium* between 177 and 180 AD a municipal infrastructure including a *forum*, a *curia*, a *basilica* and other secular and sacral buildings was necessary. There are places in the Roman world where we encounter the same transformation from a legionary base to a civilian settlement. In *Moesia* these are *Ratiaria* and *Oescus*, in *Pannonia* this happened at *Poetovio*. All of them

¹⁴ Ovidius, *ex Ponto* IV, 9, 78-79.

¹⁵ Waldner, Gugl 2016, 434-436 fig. 1-3: Handmade pottery and grey wheel thrown ware concentrate in the area of the Western fortification. Apart from Hellenistic amphora finds and a fragment of an early Hellenistic fine ware bowl, there are fragments of Eastern Sigillata A, Italic Sigillata, Eastern Sigillata C and early-imperial amphora finds date to the 1st century AD.

¹⁶ For the opposite view: Doruțiu-Boilă 1972, 143 f. After the transfer of *legio V Macedonica* to *Potaissa*, *legio I Italica* took over its duties on the lower Danube: Suceveanu, Barnea 1991, 50. 60.

became colonies under Trajan after the legion left the site. Continuous archaeological research has been done at sites developing from legionary fortresses into *coloniae* especially in *Britannia*. *Burnum* in *Dalmatia* is a special case which has some similarities with *Troesmis*. In the 80s *legio IV Flavia* was moved to *Ratiaria* which brought an end to the military occupation in *Burnum*. From Hadrian onwards a *municipium* is epigraphically attested. The Austrian excavations of the 1970s not only revealed parts of the Claudio-Flavian *principia* of the legionary fortress, but also of the later civilian *forum* which was built in the early 2nd century replacing the military *principia*¹⁷. Presumably, this model also fits to *Troesmis*, although the time span between the transformation is much shorter. Archaeological excavations are necessary to clarify this point as well as related problems, like the involved intra-regional and intra-site migration processes which should be reflected in architectural remains and settlement patterns.



Fig. 12: Distribution of artefacts predating the foundation of the legionary fortress (© 2015 Gugl / Waldner. The orthophotos and topographic maps are provided by ANCPI).

Acknowledgment

The authors wish to express their thanks to the Austrian National Bank (Österreichische Nationalbank), who financed the field campaigns of 2015 by its fund "Jubiläumsfonds" (project nr. 16365).

¹⁷ Zabehlicky-Scheffenegger, Kandler 1979, 9-15; Giorgi 2009, 589-591 fig.15-24. - Cf. Wilkes 1969, 98 f. 217 f.

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