Civil settlements – *vici* and *canabae* – were found in the nearest surroundings of nearly all the auxiliary forts and legionary camps. Their role was subsidiary with regard to the army and they were inhabited by civilians, often with family or commercial ties to the soldiers (Roth 1999: 99; von Petrikovits 1991: 169). The army camp was not a place cut off from the world; it was frequented by civilians from these settlements and by travelers on business and out of need (Tomas 2011b: 148). With time the army camps and the surrounding settlements were transformed into single spatial and social units (Mrózewicz 2000 with further literature). The present article reviews the state of research on *canabae* in general and the current relevant fieldwork being carried out in the Lower Danubian provinces of Dacia and Moesia, before going on to discuss the said settlements in *Novae* (modern Stăklen near Svistov in Bulgaria) and the new research that is planned on it.

1. Administrative status of civil settlements

Land around a camp was in the hands of the army and was treated formally as public land (*ager publicus* owned by the imperial treasury (*fiscus*) (Vittinghoff 1974: 110; Mehl 1986). The limits of this land were determined by a radius of one *leuga*, an ancient measure corresponding to 2.22 km (Piso 1991), and it is within these limits that the *canabae* were contained. The civil settlement was most probably subordinated to the legate of the legion, but it was self-governing. The self-government included Roman citizens, who were referred to in inscriptions as *veterani et cives Romani consistentes ad legiorem/ad canabas*, represented by officials – *magistri*, less frequently *decuriones*, from (Vittinghoff 1971: 301). *Canabae* residents were restricted in their right to resettle and could not own land of their own, although they could rent it from the army (Piso 1991: 138). The army also supervised the land and installations essential to its proper functioning: pastures and meadows (*prata*), stone quarries (*lapicidinae*), brickmaking plants (*figulinæ*) and workshops (*fabricæ*). Settlements located beyond the boundaries set by the *leuga* were subject to provincial administration and were inhabited by people with the right to own land. The *vicus* could obtain municipal rank and have its own *territorium*. Studies in Britain have shown that the radius of small settlement territories was an average of one Roman mile, going up to one mile and a half in the case of bigger towns, in similarity to army camps (Rodwell 1975). *Municipia* had their own administration including *ordo decurionum* and *magistri*. The existence of two settlements in the neighborhood of legionary camps is referred to as settlement dualism (Möcsy 1954: 183; 1974: 139–140). It remains an object of debate whether and when Lower Danubian *canabae* received town rights (Gerov 1977; Doruţiu-Boilă 1978).

Settlement dualism characteristic of the 2nd c. AD has not been observed in the case of army camps established in the end of the 3rd c. AD (cf. Mason 1988: 178). Canabae municipal administration is also known exclusively from 2nd c. AD inscriptions, the 3rd c. not being in evidence despite the peaking prosperity of *canabae* in this period and despite the fact that some of them were even granted municipal rights, e.g. Brigetio and Apulum (Barkóczı 1964). Certain settlements, both *canabae* and *vicus/municipium*, became single organisms in terms of the population (Möcsy 1954: 195). This could have been effected by the growing situational risks in the 3rd c. AD and the simultaneous development of army settlements connected with a policy of granting soldiers permission to live together with their informal families (Tomas 2011b: 139–140). The end effect was migration of the population ever nearer to the camp walls. Yet the existence of a *vicus* by the camp in *Durostorum* was attested even in the beginning of the 3rd c. AD (Doruţiu-Boilă 1978: 246).

2. Topography and state of exploration of Lower Danubian settlements

Research on vici, that is, auxiliary fort settlements, is much better developed than that on *canabae*, which are legionary camp settlements (Hanel 2007: 413). Well investigated civil settlements next to legionary garrison sites are few and the list is dominated by sites from the western part of the Roman Empire: Deva/Chester, Isca/Caerleon, Noviomagus/Nijmegen, Bonna/Bonn, Carnuntum/Bad Deutsch-Altenburg; to this one can add the central European *Aquincum*/Budapest (Hanel 2007: 410–411; von Petrikovits 1991). Regular excavations have revealed the layout and sometimes also the architecture of these settlements. Buildings and public features typical of Roman towns can be found there: squares (*fœna*), amphitheatres, temples, baths, and also inns (*mansio*) taking on the form of large villas. Infrastructure in the form of water conduits, street and road networks, burial grounds and workshop centres, was an important element of the development of camp environs.
The Lower Danubian camp settlements (Fig. 1) are much less investigated than their counterparts in the western provinces of the Empire. Current, mainly ground survey and salvage work has resulted in determining the localization of such settlements and in some cases also their extent. In the last few years investigations have been undertaken again on a few of these sites, mostly in an effort to protect remains that are being devastated and plundered. The worst case of such intensive destruction has occurred in *Ratiaria*/*Arčar*, one of the hypothetical seats of the *iiii Flavia* legion (GIORGETTI 1983: 21). In other cases, the situation is made more difficult by the presence of late antique and medieval towns, which developed on the site of Roman legionary camps and which constitute today the old-town fabric of modern cities (*singidunum*/*Belgrad*, *apulum*/*Alba Iulia*, *durostorum*/*Silistra*).

*Apulum* merits special attention among recently explored Lower Danubian settlements associated with the Roman army (Fig. 2). The specific topography of this settlement complex is sometimes interpreted as the effect of legionary camps in two locations: the first on the site of the later colony (*castra legionis I Adiutricis*) and the second, permanent camp of the *XIII Gemina* legion at modern Alba Iulia (OPEANU 1998). Undeniably, *canabae* existed next to the latter camp and recent excavations have uncovered successive fragments of architecture to the south and southeast of it (TIMOFAN 2010). Non-invasive prospection has permitted some of the streets and architectural remains to be reconstructed (OLTEAN 2007: 170, fig. 5:36B), contributing to the known set of data limited so far to the *praetorium* and baths, which had been explored in the 19th c. by A. Cserni. An analysis of aerial photographs has also located the necropolises, one on the northwest (OLTEAN 2007: 190–191) and the other on the south (OTA 2009 with further literature).
The _canabae_ of the XI _Claudia_ legion in _Durostorum_ were situated to the north of the camp, covering an estimated area of 60 ha (Dönevski 2009: 108, figs. 1, 2). Salvage excavations in the town have recorded several dozen features, including three villae and a freestanding public bath. Many tombs from the early Imperial and late Antique periods have also been explored (Dönevski 2009). The _vicus_ settlement located in Ostrov, 4 km east of Silistra on the Rumanian side of the border, has also been excavated (Damian, Băltăc 2007), producing among others a reused inscription containing the word _municipium_ (Parvan 1924). This has given rise to speculations concerning the granting of town rights to this settlement (Boyanov 2010: 54–55). Its modest architecture and area covering 24 ha recalls an analogous settlement at _Novae_ (cf. Tomas 2006).

The localization of the first earth-and-timber fortifications on the site of the later _canabae_ at _Singidunum_ also merits attention (Crnoberija 2005: 118, fig. 1). The sole architectural remains known from this settlement are the baths discovered at Studencki Trg, which is identified with the _forum_ of _canabae_, and some buildings and other features cleared on the slope of Kalemegdan hill (Nikolić, 2009).
The impact of permanent army presence on the provincial settlement network is best observed in the immediate neighborhood of where the units were stationed. Civil settlements accompanying camps were temporary in nature and moved with the unit. The residents of the first canabae of the VIII Augusta legion left with the army in the second half of the 60s. A more permanent settlement developed in connection with the longer presence of the First Italian legion; residents were composed of mainly peregrines and veterans (Mrożewicz 1980: 351). A list of analogous sites from the European frontiers of the Empire
put together by I. Piso (1991) demonstrates that the area under army supervision was limited to a radius of the said leuga, that is, 2.22 km. A second civil settlement, the vicus, was established usually just beyond the sphere controlled by the legionary commanders (VITTINGHOFF 1974). This second settlement was under the supervision of the provincial administration. In Novae, the second settlement was located 2.5 km to the east of the camp (Figs. 3, 4), at the Ostrite Mogili site (TOMAS 2006).

The localization of the canabae and vicus of Novae was initially the subject of debate with localizations proposed either to the west or to the east of the fortress: among others, T. Sarnowski (1976: 62; 1990: 239), L. Mrozewicz (1981), S. Parnicki-Pudelko (1981) and B. Gerov (1977). Repeated ground surveys and longtime topographical observations have sustained the theory regarding the localization of the principal part of the civil settlement to the west of the army camp (Fig. 4).

Another issue debated by researchers working in Novae for the past few dozen years is the function of the so-called eastern extension. This is the said territory lying east of the camp and surrounded by a separate, additional circuit of defenses, built most probably in the end of the 3rd c. BC (PRESS, SARNOWSKI 1990: 240), similarly as at Oescus (ИВАНОВ, ИВАНОВ 1998: 203). Even so, excavations of the fortifications east of the fort revealed pre-Roman burials and finds dated to the 1st–2nd c. AD (ČICKOVA 1980: 62).

5. Administrative status of civil settlements in Novae

Extra leugam settlements advanced to municipal status usually reached a few dozen hectares in size. The settlement located at Ostrite Mogili, 2.5 km to the east of the camp of the First Italian legion, was approximately 15 ha, part of this being most likely a cemetery (see TOMAS 2006: fig. 9). Archaeological surveying and testing on the site have confirmed the presence of a multi-phase occupational unit starting in all likelihood in the Flavian period as indicated by identifiable sherds of imported pottery. Neither the size of the site nor the nature of the finds is impressive and an archaeological analysis suggests a reduction of ground area after the middle of the 3rd c. In the opinion of the present author, it is highly probable that the canabae received municipal status not earlier than at the beginning of the 3rd c. AD (cf. GEROV 1977: 300; TAYEBA 2004: 80; TOMAS 2009: 42; PISO 1991: 148). Growing disquiet and external menace in the later half of this century, which resulted in the decline of municipal institutions, must have caused the vicus residents to migrate nearer to the walls of Novae (similarly SARNOWSKI 1976: 62), which meant that these settlements were abandoned before the 4th c. At the same time, new regulations introduced by Septimius Severus, allowing soldiers to live with their families (TOMAS 2011b with literature), were instrumental in spatially integrating the camp and surrounding settlements into one civitas.
The shortness of the interval, during which canabae had the status of a municipium with separate social and functional structures, may be the reason why virtually no inscriptions have been preserved mentioning either the town’s legal status or magistrate officials. The sole evidence attesting the municipal status of novae is an inscription erected by a priest of the imperial cult (augustalis), in which a single letter refers to this status (KOLENDO 1970). The case of Durostorum may have been similar, in my opinion, with the canabae enjoying municipal status for a rather short period of time, while the other settlement, that is, the vicus at the site of Ostrov (most probably Gavidina), never received this status and was eventually abandoned in the 4th c. (BOYANOV 2010). The question when Durostorum (and indirectly also Novae) was granted municipal rights is linked to the question of the dating of inscriptions giving the title of imperator to either Marcus Aurelius or Caracalla (AE 1925, 110). Opting rather for the latter of the two emperors in this case, I would move to not earlier than AD 198 the date when the settlements were elevated in their status (cf. PARVAN 1924: 319; GEROV 1980; ДОНЕВСКИ 2006a; 2006b).

The nearest vicinity of the legionary camp at Novae has been investigated so far mainly by extensive field surveying. More extensive investigations were carried out in the canabae and neighboring sites by a Bulgarian-German expedition headed by S. Conrad and K. Stančev (2002). The canabae and vicus at Ostrite Mogili were explored by...
The sole features in the territory of the canabae, which have been investigated more fully, are the villa and late antique basilica with burial ground located about 150 m to the west of the camp (Čičikova 1997; Balaškova 2006). Salvage excavations have been conducted in the temple of Oriental divinities to the southwest of the camp (Najdenova 1999) and the sanctuary of Dionysus/Liber Pater to the south, beyond the leuga border (Đakonova 1961). Smaller settlement units were located, among others, to the south of Novae (Conrad, Stančev 2002: 676–677) and in the nearby town of Svitov, a little over 3 km to the west of the fort (Стефанов 1958: 341 ff.). A planigraphic analysis also included an alleged villa situated in Kălna češma, 2.5 km to the southeast of the camp (Sarnowski 1979). The water-supply system has been investigated extensively (Biernacka-Lubańska 1979; Tomas 2011a) and in the nearby town of Svištov, a little over 3 km to the west of the camp (Sarnowski 1979). The territory of the canabae has yet to be carried out.

6. New research and selected methodology

The extensive and complex units constituted by army camps and associated civil settlements with their infrastructure require more comprehensive and interdisciplinary methods than the traditional broad-scale excavations, which are extended in time and produce an incomplete view of the cultural space that is being reconstructed and evaluated. Testing and regular excavations usually give an incomplete view of the cultural space that is being reconstructed and evaluated. Testing and regular excavations usually give an idea of individual buildings, which has no anchoring in reality without knowledge of general site topography, ancient landscape, hydrological network, street grid and aqueduct connections, for example.

In the case of settlements of the canabae type, which were turned into towns in late antiquity, the choice of research methodology requires extensive preparatory study. The multiphase aspect of the occupation of Novae constitutes an additional difficulty. Increasingly active and well organized treasure hunting carried out on modern land plots existing in this area presents an even greater problem, discouraging researchers from investigations and leading to the destruction of many features under our very eyes. In this situation it is necessary to choose methods that will produce results as quickly as possible and as extensive as possible, while focusing attention on the destruction of antiquities in the region, which is an ongoing process done with impunity. Non-invasive methods are an obvious choice in this situation.

A grant from the National Centre of Science has opened the way to the exploration of the territory of the canabae. The project aims at conducting extensive laboratory analyses of organic microremains sampled during excavations in 2009, when a full stratigraphic cross-section through the remains of the Roman army camp and the late antique town was opened. The first season in March 2012 was also dedicated to a search query in local museums, financed from a grant from the Foundation for Polish Science. This project will document finds, which are now in contexts outside the army camp, but which can be connected with the civil settlers.

Natural site conditions will be reconstructed based on precise ground mapping. A digital elevation model will be generated based on extensive ground measurement, enabling a visualization of army camp topography and the progressive erosion of the river escarpment at the north, which constituted a continuous threat for architectural structures built in this part of the site (Sarnowski, Kovaljovskaja, Tomas 2012: fig. 1). The territory of the canabae will be covered by GPS RTK measurements, producing a full model of the ground of both the camp and the associated settlement. Further data on the flora will be obtained from laboratory analyses of organic micro-remains.

A significant research issue is aerial photography, which started already in 2011. The objective is to identify sites for exploration and, in specific cases, to discover features which can be seen only from the air. A ground survey using metal detectors will be carried out in the field, the goal being to establish limits of the site marked by the presence of archaeological material, as well as to identify the nature and chronology of this material. A planigraphy of finds made by metal detector should help in creating maps of chronological distribution and perhaps even to establish the position of metal-production sites, indicated already by local residents or deduced from indirect premises. The most important element of the planned ground prospection are geophysical surveys using the magnetic and electrical-resistivity methods.

Conclusions

Modern archaeological research should encompass a broad range of methods exceeding the traditional frame of broad-scale excavations. It is particularly so in the case of settlement studies, the aim of which is a reconstruction of...
landscape and environment in the past. Any investigation of Roman army camps and forts “from wall to wall,” so to speak, produces a defective and perhaps even false picture, if the surroundings are not known. After all, context is all-important in archaeology.

Translated by Iwona Zych

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Abbreviations

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>P.s.-Hyg.</td>
<td>Pseudo-Hyginus, <em>De munitionibus castrorum</em> (see: Richardson 2004)</td>
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<tr>
<td>ИМСЗБ</td>
<td>Известия на Музеите от Северо-Западна България</td>
</tr>
<tr>
<td>ИРИМВТ</td>
<td>Известия на Регионален Исторически Музей Велико Търново</td>
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<td>AAhung</td>
<td>Acta Archaeologica Academiae Scientiarum Hungaricae</td>
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<tr>
<td>AE</td>
<td>L’Année épigraphique</td>
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<td>ANRW</td>
<td>Aufstieg und Niedergang der römischen Welt</td>
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Bibliography

Владкова П.

Ълков В.
1965  Атинни некрополи в Свищовско, “Археология” (София) VII/1, 27–34.

Генчева Е.
2002  Първият военен лагер в *Novae* провинция Мизия (Северна България), София – Варшава.
Димитров Д.П. ЭТ АЛ.
1967 Д.П. Димитров, М. Чичикова, А. Димитрова, В. Найденова. Археологические раскопки в Восточном Секторе Нове в 1965 г., "Известия на Археологически Институт" XXX, 75–100.

Джонова Д.
1961 Светилище на Диновис края Свищов, "Археология" (София) III/2, 21–24.

Доневски П.

Иванов Т., Иванов Р.

Кабакчиева Г.

Степанов С.

Тачева М.

Апарашчеви, Д.

Баркоччи Л.

Бернацка-Лубаньска М.
1979 Water-supply System of Novae, "Archeologia" (Warsaw) XXX, 57–68.

Бондон Д.

Бойанов И.

Конрад С., Станчев Д.

Срнобрина А.

Циккова М.
DAMIAN P., BALTAC A.

DONEVSKI P.

DORUȚIU-BOILĂ E.

GEROV B.

GIORETTI D.

GUEDE N.

HANEL N.

KOLENDO J.

KOLKÓWNA S.

MĂNUCU-ADAMEȘTEANU GH.

MASON D.J.P.

MEHL A.

MIKIĆ M., STOJANOVIĆ V., MRĐIĆ N.

MOCSY A.

MROZEWICZ L.
Najdenova V.

Nikolić S., Pop-Lazić S.

Nowicka M.

Oletean I.

Oprenau C.

Ota R.

Parnicki-Pudelko S.

Parvan V.

von Petrikovits H.

Piso I.

Pop-Lazić S.
2002 Nekropole rimskog Singidunuma, "Singidunum" 3, 7–100.

Press L., Sarnowski T.

Richardson A.

Roadwell W.

Roth J.

Sarnowski T.
Sarnowski T., Kovalevskaia L.A., Tomas A.

Spasić-Djurić D.

Syme R.

Timofan A.

Tomas A.

Tudor D.
1978 Otenia Romana, București.

Vittinghoff F.

Vulpe R.

Vulpe R., Barnea I.

Zotović L., Jorđović Č.

Internet resources

Reports on Apulum project (4.05.2011):
http://apulumarchaeology.wordpress.com/

http://cclbsebes.ro/

Photos of the buildings near 7, Miron Costin Str. (15.05.2011):
http://www2.cimec.ro/Arheologie/cronicCA2010/ albume/preventive/097/album/index.html

Description of the research of the buildings near 7, Miron Costin Str. (15.05.2011):

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Obozy wojskowe wraz z otaczającymi je osiedlami i infrastrukturą stanowiły jeden organizm, zarówno pod względem przestrzennym, jak i społecznym (Tomas 2011b: 148), dlatego nie należy traktować ich jako osobnych struktur osadniczych. Przedmiotem niniejszego artykułu jest przedstawienie aktualnego stanu wiedzy o osiedlach przyobozowych, ze szczególnym uwzględnieniem prowincji naddunajskich: Dacji i Mezji, oraz bardziej szczegółowe zaprezentowanie canabae w Novae (Bułgaria) i planowanych tam badań.


Dotychczasowe badania, prowadzone na stanowiskach dolnodunajskich, pozwoliły przede wszystkim określić ich lokalizację i zasięg. Problemy związane z przeprowadzeniem badań wynikają m.in. z ich intensywnego niszczenia, istnienia wielofazowego osadnictwa, czy obecności terenówÒ obozowych, ze szczególnym uwzględnieniem prowincji naddunajskich: Dacji i Mezji, oraz bardziej szczegółowe zaprezentowanie canabae w Novae (Bułgaria) i planowanych tam badań.

Stan badań nie jest zadowalający, przy czym o wiele więcej wiemy na temat tego rodzaju osadnictwa w regionach zachodnioeuropejskich (HANEL 2007: 413). Na planie takich osiedli oznakujemy budowle i obiekty publiczne typowe dla rzymskich miast.

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Celem badań osadniczych jest odtworzenie środowiska i otoczenia, w którym żyli ludzie w przeszłości. Badania rzymskich obozów legionowych prowadzone jedynie w obrębie ich murów dają obraz ułomny, pozbawiony istotnego kontekstu, jaki stanowią dla nich otaczające je osiedla przyobozowe. Szeroka paleta metod badawczych, wychodząca poza ramy tradycyjnych badań wykopaliskowych, jest do tego celu narzędziem najodpowiedniejszym.