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The iron of the Empire: the production of iron made military equipment in the province of Dacia (AD 106-AD 270)

Lorenzo Boragno

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Par

Lorenzo BORAGNO

« The Iron of the Empire »

**« The Production of Iron Made Military Equipment
in the province of Dacia (AD 106-AD 270) »**

Thèse présentée et soutenue à Le Mans, le 9 Avril 2021.

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Titre : Le Fer de l'Empire. La production des armes et des armures dans la Dacie Romaine.

Mots clés : Production d'armes ; Logistique ; Armée Romaine ; Dacie ; Culture stratégique ; Fer.

Résumé : L'armée romaine a eu une importance indéniable pour l'histoire de l'Empire Romain, les légions de Rome suscitent en effet des images puissantes et de grandes empreintes dans l'imaginaire collectif. Toutefois, de nombreux aspects de l'organisation des forces militaires sous le règne des empereurs sont encore obscurs : la production des armes et des armures pour les soldats fait partie de ces aspects. Cette thèse propose donc d'analyser la province romaine de la Dacie (106 ap. J.-C. – 270 ap. J.-C.) en tant qu'étude de cas, dans le but de développer un modèle théorique permettant d'appréhender cet aspect particulier de la logistique militaire.

Les concepts fondamentaux et le développement de la logistique militaire romaine sont étudiés au travers d'une approche multidisciplinaire qui privilégie l'emploi croisé des données archéologiques, des sources littéraires et des inscriptions. L'ensemble des sites militaires et de centres administratifs de l'ancienne province de Dacie est donc considéré comme la structure dans laquelle un système complexe pour la production et la distribution de l'équipement militaire a été réalisé et mit à profit.

Title : The Iron of the Empire. The Production of Iron Made Military Equipment in the Province of Dacia (AD 106- AD 270).

Keywords: Weapon Production; Military Logistics; Roman Army; Dacia; Strategic Culture; Iron.

Abstract : Despite the importance the army had throughout the history of the Roman Empire, and despite the vivid images that immediately come to mind when we think of the legions of Rome, many aspects related to the organizations of the armed forces under the rule of the emperors remain arguably obscure: the production of weapons and armours for Roman soldiers is among them. Aiming to develop a strong theoretical approach for the analysis of this particular aspect of ancient military logistics, this thesis analyses the situation in the Roman province of Dacia (AD 106-AD 270).

The conceptual basis and development of Roman military logistics is studied through the combined use of archaeological data, literary sources, and epigraphy. The pattern of military sites, mines, and administrative centres of the ancient province of Dacia is therefore interpreted as the framework in which a complex and multi-layered productive system was implemented and developed..

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The past does not reveal itself. Perhaps due to history's elusive nature, the study of the past is never a solitary task. This is probably the most important truth I have learned during the journey that has led to this work.

I am not the most communicative student; I tend to isolate myself among the library shelves and to lose myself between the pages of books. This is why I am deeply grateful to everyone who has taught me to explore the past together.

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*A Mamma e Papà, che hanno portato con me il peso di queste pagine.
A Loredana e a tutti quelli che c'erano prima e dopo la Kerkaporta,
perché possono capire questa dedica*

*Quis fuit, horrendos primus qui protulit enses?
Quam feros et vere ferreus ille fuit!
Tum caedes hominum generi, tum proelia nata,
Tum brevior dirae mortis aperta via est.
An nihil ille miser meruit, nos ad mala nostra
Vertimus, in saevas quod dedit ille feras?*

Tibullus, Elegiae 1.10.

Exploring a Gap – An introduction.

Describing the cruel nature of war, Tibullus asks in a famous passage “who was the first to have forged a sword”, turning what intellect had given to humankind as defence against the feral beast into an instrument of death and destruction. An interesting dichotomy can be appreciated. While war is something despicable but natural, and it is sometimes defined by ancient philosopher as man on man hunt, weapons are not. Weapons must be fabricated, by men or by supernatural entities. God-made weapons and armours are known in ancient myths and related literature, where this kind of supernatural equipment was brought into battle by the mightiest heroes of the past. In historical narrative, or in more realistic tales, the image of producing weapons and military equipment is an omen for impending and imminent disasters. The image of the world producing and amassing weapons in great numbers recurred relatively often when times of great perils were approaching, and in general it represents a powerful metaphor to describes the high social and economic costs of war.

It is known that Roman soldiers of the remote past had to buy their own weapons and armors, and they equipped themselves according to their economic possibility. This system proved however its limits when it failed to match the tireless expansion of the Republic: wars far from Italy became more frequent, and those prolonged conflicts stressed Roman society and economy to their breaking point. A series of much needed military reforms were implemented during the central and last centuries of the Republic, effectively increasing the ability of the Roman army to engage in remote theaters for a longer time.

Despite the obvious importance war had in Roman society and despite the powerful imagery that surrounded weapons, armors and soldiers, this topic has somehow passed un-noticed in many ancient and modern literature. It can be supposed the commanders of the Republic relied on artisans and small workshops in the major time to equip their soldiers. According to literary sources, Romans gathered weaponsmiths and specialized artisans in well defended cities and stronghold to supply the army of everything the soldiers needed in case of particularly long and difficult wars¹. Curiously, the situation is even less clear for the central centuries of the imperial age, when Rome reached the peak of its power and military might.

It is likely that Augustus and his successors implemented a new series of military reform to face the need of a newly established permanent and professionally army, but nature and

¹ Liv. 26, 47.

content of these improvements have been passed under silence by ancient authors. As Dio states in a passage of his work, while the Senate openly debated the most concerning matters of Roman policy, thus leaving an abundant dossier of public discussion, the imperial establishment was much more reluctant in sharing details of its activities².

Sources demonstrate that the *princeps* and his staff had at their own disposal archives containing letters, rescripts and reports from all over the empire. The increase in number of clerks and secretaries during times seems to indicate that those archives were at some point fairly extended.

The more the emperor succeeded in gaining control of the different aspects of the political and economic life of the empire, the more offices and secretaries were needed to fully exercised this control. However, nothing remains of this mass of documents but few allusions in the survived literary corpus.

Perhaps, those archives helped the emperor and his *consilium* to manage also military logistics, but it is also possible that logistics were not organized by the centre of the empire and that provincial governors had large margins of autonomy to fulfil their duties, jeopardizing in this way the systems into multiple solutions adopted and implemented.

The organization of military logistics was a very technical topic indeed, but it remains unclear why ancient authors did not offer details about it. March orders, strategies and tactics were often described with a certain precision, and more or less vague references to the preparation to against imminent attacks or siege appears in pages of historical works.

Perhaps, the topic failed to interest the vast public, or data were too specific and technical to be useful after decades and centuries of transformations in economy, statecraft and warfare and texts regarding this aspect of war were not copied nor transmitted across the ages.

The situation is somehow unusual: it is often possible to track where a soldier came from, from where it was supply and which region produced the oil or wine he consumed, but it can be extremely hard to understand where his weaponry was produced.

Even more curiously, the situation is somehow clearer for the late antiquity. The fortuitous survival of the *Notitia Dignitatum* has demonstrated the existence of a system of state run workshops (*fabricae*) for mass production of military equipment in late antiquity. Historical sources mention also the creation of such facilities in 4th and 5th century AD, generally in occasion of difficult military campaigns or as a measure to reinforce a region exposed to enemies' threat.

² Dio 53,19.

Evidently, imperial Rome had at the time developed a complex and layered logistic system that was able to provide armours and weapons to the large armies stationed along the frontiers by relying on few massive logistic hubs.

Exploring the gap existing between these two relatively well-known situations, the free-market based supply of the Republic and the centralized state-run logistics of late antiquity, has been the aim of the present work.

The available data are indeed scattered both from a chronological and geographical point of view and very heterogeneous in their nature.

Archaeological excavations provide an insight on structures, on spatial organization and productive facilities, while epigraphical and papyrological sources have transmitted various information concerning military ranks, civil entrepreneurs, and officers of the imperial administration involved in the organization of military logistics. But the resulting image is incomplete and unclear: it is not easy to give a meaning to this ensemble of data.

Ancient literature has on the contrary proved to be less concerned with the topic, and the hints offered are often “indirect” information, conclusions that can be deduced from brief notes or from their absence.

Despite the documentation is relatively abundant overall, the situation is so much jeopardized that it is very hard to appreciate differences from province to province and each information loses its meaning if considered as a monadic element of the analysis.

The present work proposes therefore two distinct but simultaneous and complementary approaches: the development of a theoretical model to frame the research and to account for the historical evolution of military logistics; and the development of a methodology to use case studies as feedbacks for the model.

According to the most widely accepted paradigm, as it will be detailed in forthcoming chapters, during the first centuries of the Empire each military unit was somehow capable of producing its own equipment, relying in the smallest way possible to external supply.

The so called “*fabricae* system” was based on a network of workshops that produced for local units, often employing soldiers as workforce. This peculiar organization could appear counterintuitive from a modern perspective, but it greatly simplified the administration of military supply. It is possible that the *fabricae* system was indeed preferred during the first stage of occupation of a province, when proper administrative infrastructures were still not implemented.

The first goal of the present research is therefore discussing the already existing models and potentially proposing an alternative paradigm to frame further researches.

The focus has put in particular on documented forms of state control over weapon production and on the known contents of military reforms to understand to which extent the imperial administration was effectively able to manage this important aspect of the economic and social life of the empire.

The application of the concept of strategic culture (the identification of cultural and behavioural patterns) has also been proposed as a useful instrument to understand the dynamic evolution of military logistics and to account its development as consequence.

To maintain a coherent structure in the exposition, the first part will focus more on theoretical aspects, detailing in particular the epistemological problems of the research and presenting the corpus of literary sources in its chronological framework.

The discussion of Dacia as a case study occupies instead the central part of the work. It is however important to stress that the “model” has been based on the analysis of the specific situation in the Transylvanian plateau and the feedbacks between the analysis of sources and the evidences of the terrain.

The province presents many interesting features that allow and facilitate the analysis of local evidences. Being occupied for less than two centuries (106-270 AD ca.), Dacia presents indeed a relatively clear archaeological situation. Provincial military network was organized in the aftermath of Trajan’s conquest, at the beginning of the 2nd century AD, and remained relatively stable during the next 150 years. The vast majority of bases had been however rebuilt in stone from the mid of the 2nd century AD to the beginning of the 3rd century AD, further reducing the chronological spread of traces and evidences.

Some cases of abandonment of military bases or of *castra* that changed purpose are known (like in the case of Potaissa, originally occupied by an auxiliary unit and later enlarged to garrison the *V Macedonica* legion, that arrived in the area under Marcus Aurelius), but few radical changes happened overall.

Dacia was also rich in natural resources and metal deposits. Even before the Roman conquest, Dacian kings and dynasts from Sarmizegetusa Regia apparently based their power on the exploitation of the famous gold mines in Ampelum and on the extraction of iron ores from south-west corner of the region. This solid tradition in ironworking was probably conserved and preserved under the rule of the emperors. Furthermore, the imperial province was surrounded from three sides by “barbarian” tribes and nations, and the formidable Carpathian

Mountains represented a difficult barrier to pass through. The province was not isolated, but connections with the rest of the empire were not easy at all.

Considering the specific situations (the relative isolations, the abundance of raw materials, and the possibility to organized *ex novo* the province without being entangled by a precedent imposing situation), military logistic in the area has to be analysed not simply by collecting traces and evidences, but studying how the system worked on an entire provincial level. Two chapters have been consequently dedicated to the presentation and discussion of metallurgic activities connected with military presence in the area, aiming to identify the military *fabricae* that supposedly characterized imperial military logistic between the 2nd and 3rd century AD and, at the same time, to investigate the existence of different patterns in the area, possibly connecting mining area to crafting centres and logistic hubs.

The peculiar *vicissitudes* of Dacian administrative organization are meaningful for the present research because the administrative super-structure could have influenced and shaped the organization of military logistics in the area. A distinction should be made between the area originally occupied by Moesia Inferior army during and after Trajan's Dacian Wars, and the part that was occupied by the "main" campaigning force at the beginning of the 2nd century AD. The eastern conquests were instead attached to Moesia Inferior in the aftermath of the Second Dacian Wars of Trajan, while the rest was organized in the newly created province of Dacia. This original arrangement seems to imply that this south-east area relied more on the southern provinces, both for military support and possibly supply, in comparison of the more isolated Transylvanian plateau in the north.

Hadrian implemented a radical reorganization of the whole sector, effectively abandoning the eastern plains and conserving only a small part of what originally was the part of Moesia Inferior north the Danube. This residual element was organized as the province of Dacia Inferior, entrusted to a equestrian procurator. Military network of the province was arranged along three main lines: the so called *Alutus limes* and the *Transalutus limes*, a sort of advanced line in the east, protected the inland route along the Olt, one of the most important of the region, and the eastern Carpathian slopes. Forts were generally smaller in this area, and the distribution of Dacia Inferior forces confirm that local military network was intended mainly to protect the access from east and to overlook the strategic road along the Olt. Due to this specific evolution of the administrative organization of Dacia, the forts of Dacia Inferiors could have relied more on Moesia Inferior for logistic needs and the supply of military equipment: it was indeed easier for soldiers in the area to have access to resources and supply from Moesia

Inferior, from where iron mining districts are known as well. The area has been therefore excluded from the present discussion and only some particularly interesting buildings, that could have functioned as military workshops, have been presented as terms of comparisons. The original "Trajanic Dacia" was also divided in two distinct entities, with Dacia Porolissensis in the north west corner of Transylvania and the rest, from the heart of the Transylvanian plateau to the Danube, re arranged as Dacia Superior, that conserved a *legatus* of praetorian rank as governor and the *XIII Gemina* legion among its garrisoning forces. It was only under Marcus Aurelius, as it will be detailed in the forthcoming chapters, that the three areas were reunited. The research has been therefore focused almost exclusively on "Dacia Porolissensis" and "Dacia Superior", being the military network in the area originally conceived and implemented as a unitary system to defend, occupy and control the rich Transylvanian plateau.

The third and last part discusses the available data from Dacia and the application of the theoretical model to the case study.

Part I. The Iron Heart.

1. Methodological Approaches to the Study of Military Logistics.

The term “logistics” covers a vast range of “background activities³” that aim to sustain and implement a complex organization. From a theoretical point of view, the term logistics can be applied both to a civil business or to a military organisation. In the present discussion, however, the term will be applied only to describe the whole array of services intended to sustain the armed forces. However, because there is no agreement on the definition of the term itself, the study of ancient military logistics⁴ has been approached in many ways in modern historiography. For the purpose of the present research, logistics will be considered as a necessary aspect of warfare, independently by its degree of complexity. Ferrill, who adopts a very general meaning of “logistics”, defines it as “organized supply⁵” but perhaps speaking of “system of supply” should be more correct: even in absence of any kind of organization, for example in the case of simple seasonal warfare in which warriors provide for their own equipment and provisions (recurring also to pillaging when necessary), it is possible to devise what can be actually called an economic, cultural and social system to sustain war activities⁶.

The case of the Roman Empire didn’t fail to attract the attention of modern researcher but, despite the significant role that the army played during the empire, military logistics remains poorly known in many of their aspects⁷.

In normal time, or in provinces far from the more turbulent frontiers, logistics could have been relatively easy to organize: provisions were gathered locally and then transported to military

³ Thorpe 1986 p. xii (in the introduction written by Stalk) and pp. 9-11.

⁴ Despite it is nowadays a very familiar term, *logistics* has only found a relatively recent application in military studies. In his contemporary meaning, the term appears for the first time in Jomini, in his “Summary of the Art of War” of 1838, with a rather wide meaning: being one of the base element of warfare, besides “strategy, grand tactics, minor tactics, and engineering (that is mostly the science of military fortification)”, logistics indicates “the practical art of moving armies” but it comprises also “the preparation of all materials” to implement tactics and strategy. Clausewitz’s conduct of war is credited by Thorpe (at p. 9 referring to Clausewitz 1832 pp. 74-76 (Book 2, chapter 1) in the recent Oxford edition of 2007 edited by B. Heuser) as a conceptualization of military logistics. As Stalk noted in his introduction of 1986, still at that time there were no unanimous definition for what military logistics is.

⁵ Ferrill 1985 p. 38.

⁶ Stalk mentions something similar to his concept in his introduction at Thorpe 1986 p. xii when he presents a simplified allegory of that: “since primitive man first gathered stones to hurl at his neighbour” and “In its earliest form, it (the logistics) was simply a matter of individual warriors carrying sufficient food and weapons to support a battle or a campaign”. See also Roth 1999 p. 157 “Every army, even a very primitive one, contains a train of some sort”.

⁷ As Goldsworthy noted, “The study of an army’s logistics requires reliable statistics. In the case of the Roman army, these are not available”. The absence complicates the research in this field, limiting the number of the available sources and their own value. Goldsworthy 1996 p. 268.

bases in a more or less regular schedule⁸. Extensive war campaigns, however, proved to be more challenging for the imperial establishment from an administrative point of view. Baggage trains followed armies' movements during a war campaign, assuring auto-sufficiency for a short period of time, but in case of prolonged warfare provisions needed to be shipped and transported, sometimes along great distances⁹.

Sustaining a prolonged state of warfare or supplying armies engaged far away from Rome were problems already been faced by the Republic. Large scale operations represented indeed a peculiar challenge for armies in the ancient world because gathering many troops in a single place could stress a region's capacity to provide provisions to the army beyond its limits¹⁰. Romans soon became able to organize long supply lines to sustain military activities for a prolonged time, a military technique employed during the Republic¹¹ and further developed under the rule of the emperors.

The very concept, design and implementation of supply lines denote quite a high degree of complexity in logistics organization and, especially when the army became a permanent institution, would have required a network of infrastructures. Since the 3rd century BC, when legions of the Republic were engaged for the first times in war theatres far from Italy and for many months in a year, Romans had started to develop a system of temporary bases to fulfil the logistical need of their armies¹². With the words *stativa*¹³ or *sedes belli*¹⁴ Romans referred to what it has been defined "operational bases". Operational bases were established in cities or military camps from time to time in relation to the area interested by the oncoming campaign. At a certain distance from the area of engagement, operational bases were near enough to

⁸ Millar 1993 pp. 48-52 about logistics based on the provincial system.

⁹ Logically, Roman armies did not have any possibility to produce new weapons during a campaign. Repairing the equipment, may be crafting arrows or recovering usable weapons from the field of a battle were surely possible activities, and it is likely that Roman soldiers did manage to contrast the slow friction of war, but no sources gave information about these aspects of war. The baggage train represented however a valuable asset for antiquity army. The problem of protecting the baggage train during marches was well known and had been the topic of an extended literature (Onasander 6,6; Arrian. *Contra Alanos* 1-10; Veg. *Ep.* 3,6 for instance). About composition and nature of Roman baggage train see Roth 1999 pp. 68-116; see also the discussion in Vishnia 2002 pp. 265-272 about literary references of the "*lixae*" who represented the servants of the army and in important part of the baggage train of a Roman contingent.

¹⁰ Kissel 1995 p. 134; Goldworthy 1998 p 291. See also Polyb. 1,16- 18: the Roman army sent against Agrigentum initially relied on pillaging and local foraging, but the difficulty in finding provisions, due also to the counter actions of the Carthaginians, forced the Romans to organized a logistical base at Herbesus.

¹¹ Roth 1999 pp. 164-165.

¹² Roth (Roth 1999 p. 158) has convincingly seen in the treaty of 279 BC among Rome and Carthage the very first reference of this practice: Carthage agreed to share transport ships for joint military operation against Pyrrhus according to Polyb. 3,25,4.

¹³ Liv. 31.22.6; 34.28.1; 37.37.5; 38.39.4; 42.56.8.

¹⁴ Tac. *Ann.* 14,33. The term appears less frequently than "*stativa*".

provide support for the engaged troops, amassing and securing provisions and equipment. When it was possible to establish connections using fleets, , operational bases were chosen among cities or camps provided harbour facilities on major rivers or on sea shores¹⁵.

Theoretically, operational bases remained in use a longer time, providing support to the campaigning army, while tactical bases followed armies' movements and sustained the troops more near the front¹⁶. The two types of campaign bases share however a very similar role: in both cases, military bases served as depots for provisions, materials and equipment needed by soldiers. Supply lines linked the operational bases with the tactical ones but, depending on the specific situation, distances from the *sedes belli* and the more advanced bridgeheads could have exposed the supply chain to the danger of over-stretching, increasing the difficulties of protecting transports and assuring a constant flow of supplies¹⁷. Smaller fortifications, like the *praesidia*, or garrisons placed in strategic crossroads helped Roman forces to control the supply systems¹⁸.

Many of the essential aspects of Republican logistic system were kept in use in later centuries. However, under the Empire, Rome went through centuries of deep military, economic and political changing. In this respect, Augustus' reforms of the state represent a turning point in Roman history. Starting from the Principate, the armed forces were widely spread to assure Roman control all over the vast empire and therefore military logistics was deeply reformed according to the new role of the army¹⁹.

Legions and auxiliary units were deployed in every region of the empire to strength and assure emperor's power over the provinces²⁰. Military camps, that inherited the Republican military traditions, progressively evolved in more stable structures²¹. Sometimes, two or more units of *auxilia*, generally infantry troops or *cohortes equitatae*, shared the very same base, but, even if camp's dimensions were always proportional to the unit's strength, auxiliary troops' camps

¹⁵ Roth 1999 p. 173.

¹⁶ Roth 1999 p. 182.

¹⁷ Very long supply lines were managed and secured by military officers during the imperial time:

¹⁸ Corbulo organized a chain of *praesidia* to secure the supply lines that linked his army to Trapezus during the campaign in Armenia: Tac. *Ann.* 13,39 (cf. Bennet 2006 p. 84).

¹⁹ Kissel 1995 pp. 121 and ff.

²⁰ Tac. *Ann.* 4,3 about the distribution of legions in the 23 AD. See Keppie 1996 pp. 387-388 and ff. for an account. Lo Cascio has already pointed out how the scattered distribution of legions, a characteristic that particularly defines the imperial age, had a huge impact on defining the new military logistics of the Principate: Lo Cascio 2007 pp. 195-196.

²¹ According to Luttwak 1976 *passim*, the Flavian dynasty decisively pursued a policy of strengthening the borders with defences and infrastructures, ultimately contributing to the shifting of legionary bases from relatively extemporary bases to permanent structures. It could be noted however that the shape of *castra* started changing from the time of Claudius onwards: Thomas 2004 p. 440. See in general Johnson 1983.

were smaller than the large legionary bases²². A similar arrangement with multiple legions occupying the very same *castra* were adopted initially also for the élite core of the imperial army²³, but this solution was quickly abandoned: even with only one troop per *castra*, legionary camp remained the largest military bases in the empire.

From the Flavian dynasty onwards, armies increasingly started to be deployed mainly along the frontiers that, for centuries²⁴, were the areas of most intense warfare and the platforms from where imperial armies launched their offensives. Uprising and revolts, however, forced imperial armies to engage in Roman territories even during the first centuries of the current age, albeit those operations were still defined by “offensive” actions performed by the legions against internal enemies.

Legions’ camps naturally took the role of operational bases in both cases alongside the largest urban centres. Imperial high command seems to have maintained the basic logistic elements of past times, keep recurring to operational bases to store provisions and equipment in prevision of a campaign.

Tactical bases are more difficult to identify in Roman warfare, and the concept seems to have overall a narrower application in the field of ancient history. It is necessary, however, to highlight that the very idea of tactical base derives from modern experience of warfare, and it does not fit perfectly with the ancient art of war. Marching camps, still in use during the empire, maintained their role of advanced bridgehead during military operations, protecting provisions and soldiers in the very front line²⁵. Marching camps were temporary structures, generally built to support armies during an offensive operation, and were technically not intended to last for a long time, but they were frequently converted in stable bases when a region was reduced in a province²⁶.

From the mid-1st century AD, and increasingly from the start of the 2nd century AD, military camps were located mostly along the borders at least in the western part of the Empire. Auxiliary units were in particular deployed in frontier areas, with infantry troops in particular sent to garrison the most exposed frontier sectors and, sometimes, and to occupy the most

²² Many examples of this habit are known also in the case of Dacia: see Marcu 2009 *passim*.

²³ Practice had been abolished by Domitian: Suet. *Domit.* 7,3.

²⁴ As Whittaker has noted in different occasions, Flavian policy should be not interpreted as purely or mostly defensive: aggressive military campaign, as the one did by Domitian, continued during the Domitian. See Whittaker 2000 pp. 293-319. For more details: Whittaker 1989 *passim*. Cf. Luttwak 1976 *passim*.

²⁵ The careful reconstruction of Trajan’s Dacian War made by Stefan 2005 clearly shows the importance of march camp as instruments to secure the advance into enemy territories.

²⁶ Another known phenomenon in Dacia: Potaissa was probably occupied at the end of the Second Dacian War and it garrisoned an auxiliary unit until the reign of Marcus Aurelius, when the *V Macedonica* legion replaced the auxiliary unit and the fort was subsequently rebuilt. See Bărbulescu 1987.

advanced forts and outposts²⁷. For certain aspects, these camps functioned as tactical bases when the occasion required: troops engaged in repelling raiders or small-scale invasions exploited their camps to guard provisions and equipment, to provide a sort of head quarters for operations or, more simply, to gather the forces needed.

The terms of operational and tactical bases remain useful to describe how logistics worked during a campaign in imperial centuries, but they fail to describe exhaustively military logistics of the empire.

The requires of a professional armed force, that remained in a full-time service also in peacetime, were clearly very different than the need of an army gathered only to start a war or to face a specific threat²⁸. Roman soldiers were not only always ready to be deployed on the field, they were also engaged in the provinces with various tasks²⁹. Army's necessities were a problem that the imperial establishment needed to solve for its own survival. This truism necessarily means that a system, of any kind, was adopted by Roman society and by imperial government to assure the constant flow of provisions that the army needed.

In this respect, another couple of concepts can be introduced in the methodological horizon of the present research. Modern war analysts use to speak of "combat zone" and "support area" to describe the progress of military operation in a war theatre³⁰. Both the concepts are intuitive, and they merely describe a situation without implying any intention for the imperial establishment.

The combat zone is, trivially, the area where soldiers engage the enemy, it depends by circumstances from time to time and in base of the enemies Roman were facing, varying without any precise rule. Logistics in the combat zone followed the rule of the provisional system in war time, with supply lines and a chain of tactical bases to support the on-going operations.

The support zone has a wider meaning: the term indicates the area, or the areas, necessary to support the army and directly involved in their maintenance. The term is generally applied to describe a war-situation, but it can also be applied for peacetime logistics.

²⁷ Cheeseman 1914 pp. 102-124 in particular. Dacia provides once more a very good example: the two legions held the centre of the province, while auxiliary units, mostly infantry cohorts, were deployed at the edge of Roman territory. Gudea 1979 pp. 63-87.

²⁸ See for instance Kissel 1995 *passim*.

²⁹ It is probably impossible to enumerate the various and different tasks performed by Roman soldiers: foraging, patrolling the land, building activities. Documents on this topic have been collected and presented by Campbell 1994 (for a general discussion of the topic).

³⁰ Apparently, the two terms started appearing only recently and, as far as I know, no sources has been quoted for a theoretical insight of the concepts. The war against the Islamic State in Syria and Iraq has been systematically explain as a dynamic evolution of support zones and combat zones in the analysis made by the Institute for the Study of War directed by Dr. Kimberly Kagan Ph.D. who has a Classical background and published some studies on Roman strategy. See Kagan 2006 pp. 333-362.

How much the support zone is extended depends on the complexity and the efficiency of the logistic system and, of course, it depends on the capacity of an enemy to attack and disable the system. Available sources suggest that Roman Empire exploited resources of every province to sustain the army³¹. Depending on what soldiers needed, the support zone could have been more or less extended.

Tacitus states that Augustus' campaigns in Germany exhausted Gaul, that provided horses, Spain, that provided grain, and Italy, that paid for the war: clearly, Italy and the provinces were called to participate to the war effort in the way they could³². Civil strife that followed the death of Nero show a very similar pattern: contenders tried to exploit provinces which had governors of the same faction to supply their own armies. Situation was not different in peacetime, when supply could have been moved or shipped from far distances to support provincial army in case of need. Despite the empire had the possibility to do it, moving goods from great distances were expensive and for sure not always convenient. When possible, imperial establishment tried to rely on local resources and tried not to burden provinces beyond their own capacity³³. Literary sources confirm that a good governor should distribute the troops in his own province according to available resources, without oppressing local population with taxes and without exhausting the land.

Very similar considerations can be advance about recruitment. The Empire could again rely on every region to recruit soldiers, exploiting a very large support zone for man-power. Cost-benefits analysis probably showed the local recruitment was less expensive and equally efficient: from the 2nd century AD onwards, recruitment operation had mainly a local dimension and soldiers were mostly recruited among the population of heavily militarized provinces or in the civil settlements near military bases (*canabae* and *vici*)³⁴. Local recruitment never replaced entirely the wider organization: Roman recognized the value of some regional and cultural combat styles and employed, when possible, specialized soldiers from specific populations. Clearly, the provincial system provided the base for the logistical network: provinces represented the potential support zone of every military actions. Governors and their staff had

³¹ See in particular the studies of R. Rodriguez who has supposed that the imperial establishment centrally managed military logistics as part of the *annona*, subsequently developed in the *annona militaris*. Provincial *procuratores augusti* held therefore a central role in the organization. See Remesal Rodriguez 1986, pp. 104 and followings in particular. About his opinion on the *procuratores augusti* and their role in military logistics see Remesal Rodriguez 1990 pp. 55-65; Remesal Rodriguez 2012 pp. 179-189.

³² Tac. *Ann.* 1,71,2-3.

³³ Mann 1977 pp. 175-183. Debating Luttwak's hypothesis, Mann proposes to adopt the idea of economical sustainability, instead of military considerations, to understand the historical development of the frontiers in the Roman world.

³⁴ Forni 1953 *passim*.

power on every military aspects of the province put under their authority: the burden of military administration was shared by *legati*, commanders in chief of provincial army, and by *procurators*, officers entrusted with fiscal duties³⁵. Under the administration of the governor³⁶ or of the procurator³⁷, villages and cities provided animals and carts for the use of imperial administration and army. Clearly, each settlement was in charge for the surrounding area, and the whole organization, as far as we know it, was conceived as a sort of cluster-network. Military infrastructures, in place also during peacetime, represented the anchorage of this network. As in during a campaign, the largest military bases, *castra* that host a legion or more than one auxiliary units, probably worked as a sort of hub or, in Labisch's terminology, operative bases³⁸. Road-network, whose origins were predominantly military, was the obvious backbone of the transport system. Land routes, and especially the roads that ran along the most exposed frontiers, were guarded with small military installations, watchtower and stations garrisoned with *beneficarii*³⁹ and *stationarii* with patrol duties⁴⁰. Imperial army was forced to spread widely the soldiers in every province, but it secured in this way a deep control on logistics activity with a chain of depots, warehouses and road stations. River valleys represented natural land-routes⁴¹, especially when a region's morphology limited movement possibilities, and navigable river constituted particularly important assets and were fully integrated into Roman transport system⁴². Because of the necessity to control those communication-channels, military camps were often placed on river-banks or immediately nearby and in many cases, they were provided with harbour facilities and docks. Provincial fleets operated alongside troops to provide transport and logistical not only during a campaign, but also on daily basis, assuring a constant flow of supply and patrolling river banks⁴³. Major rivers appeared to be fully organized with military infrastructures as other routes, replicating the same model articulated with major bases and complementary smaller installations⁴⁴.

³⁵ The two roles were purposely complementary: control over the army guaranteed the power of provincial governors, but the fiscal authority of *procuratores*, who were *equites* and not men of senatorial rank, counterbalanced the authority of the *legatus*, assuring a certain degree of imperial control on the distant provinces.

³⁶ Dio states that Varus was in charge of organizing and protecting the provision trains within his province: Dio 56,19,1.

³⁷ Strabo 3,2,40.

³⁸ Labisch 1975 *passim*.

³⁹ See Ott 1995 pp. 142-149 about the role of the *beneficarii* in the *Annona militaris*. See also Roth 1999 p. 274.

⁴⁰ About *stationarii* see Petracchia 2001. More in general, for an account of military personnel involved in logistics see Monfort 2002 pp. 70-89.

⁴¹ Strabo 4,12; 4,1,11. Cf. Arr. *Peripl.* 8,1 and 10,1

⁴² Middleton 1979 p. 82; Schlippschuh 1987 p. 87; Millar 1993 p. 297; Kissel 1995 p. 204 and ff.

⁴³ Tac. *Ann.* 1,70; *Hist.* 4,26-27; 5,23.

⁴⁴ For an account of the military and logistical organization along the Upper Moesia Danube sector: Ilić, Gulobović, Mrdić 2010 pp. 61-76

1.1 - A Neglected Subject?

Logistics organization in peacetime and in wartime shared many elements, a fact that demonstrates a common ground of concepts and principles that guided the logistics organization. Even if it is true that provisions for the army in ancient times were represented for the largest part by the formula “food, fodder and fuel⁴⁵”, soldiers also needed clothing, offensive and defensive weapons, and working tools. Production, purchase, distribution and transport of military equipment, primarily of defensive and offensive weaponry, were necessarily part of ancient logistics but, despite the obvious importance of this topic, those are generally neglected aspects of the wider military organization⁴⁶.

Modern inquiries on ancient logistics seems to have followed a trend already present in ancient authors and therefore have limited the analysis mainly to food and fodder supply during a war⁴⁷. In its most common usage, the word “logistics” has been used by historians to refer mostly to the organization of supply during war-campaign or the provision system for *castra* and other military installations⁴⁸.

From a modern perspective, providing reliable equipment to the soldiers is for sure part of military logistics: soldiers need to be equipped before the opening of hostilities, and armies are in a permanent need for mechanical parts, fuel, ammunition and backup weaponry to replace what it has been lost or destroyed on the field. Transporting equipment alongside other provisions is a normal practice in modern warfarermsies, but we have comparatively less information for the ancient armies and in many cases weaponry and equipment are not cited in an explicit way.

The Roman art of warfare apparently did not have a word to express the complexity of logistics as moderns conceive it. Latin vocabulary tends to focus more on food and fodder supply then to other aspects of logistics, whose wider meaning do not find a perfect translation in Latin. *Commeatus*⁴⁹ is probably the most common term in literary sources. Paired with verbs like *veho* and *porto*, *commeatus* indicates food supplies in general⁵⁰. Vegetius presented at least two synonyms, *pabulum* and *frumentum*, that still indicated food supply for the army rather then having a more general meaning⁵¹.

⁴⁵ Van Creveld 1977 p. 24.

⁴⁶ Cosme 2007 p. 239.

⁴⁷ Shean 1996 pp. 159-187; Roth 1999 pp. and ff.

⁴⁸ Logistics is intended as simply “provisions” by Engels 1978 *passim*, it covers food and medical supply and its administration in Kissel 1995 *passim* and Junkelmann 1997 *passim*.

⁴⁹ Sallust. *Bell. lug.* 100,1; *Hist.* 2,47,7; Liv. 40,41,2; Tac. *Ann.* 13,39; *Hist.* 3,52; 5,23.

⁵⁰ Tac. *Ann.* 2,6; 12,43; 12,50; 13,39; 14,38; 15,12; *Hist.* 1,22; 1,64; 3,13; Front. *Strat.* 2,6,1; 3,5,2.

⁵¹ Veg. *Epit.* 3,3.

The only account for other kinds of provisions, and notably for spare equipment and weaponry, in the *Epitoma Rei Militaris* is addressed in the occasion of siege warfare. The debt paid by Vegetius to older sources is evident: a siege represented a prolonged and complex operation, whose success also depended on resources available for the attackers and for the defenders. In this case, Vegetius highlighted the importance of having stored large quantities of provisions and equipment to face the enemy and hold the walls as long as possible ⁵². In a more general sense, Vegetius appears to be the heir of a long and prestigious war tradition rooted in the past. As many other authors before, he also stressed the importance to face a war after a careful preparation.

This aspect of warfare, that we can define as properly logistic, has been echoed during the middle age by western scholars, who inherited, sometimes under the direct influence of Vegetius, the ancient care for war preparation. Vegetius' influence on the art of warfare cannot be underestimated and medieval and modern theorizations of war proceeded along the way indicated by the *Epitoma Rei Militaris*⁵³. Noteworthy, despite Vegetius addressed the famine as the *unum et maximum telum* to win over an enemy, when he defined the art of warfare he did not mention logistics as a part of it: *haec in tres diuiditur partes, equites pedites classem*⁵⁴. It can be interesting to compare the "triangle" identified by Vegetius to the more famous, and theoretically deep, one of Clausewitz or to contemporary definition of warfare, in which logistics is one of three complementary aspects alongside strategy and tactics⁵⁵.

The apparent inconsistency of Vegetius theory and definition of warfare is intriguing: logistics in Roman conceptualization of warfare appears to be not a distinct branch of war but a peculiar aspect of tactics and strategy and, instead of being the element that can sustain and implement the other two, it was considered an asset that can be exploited to defeat the enemy out of the battlefield.

A different tradition probably existed in the Hellenic and Hellenistic world. The word "logistics" itself derives from the ancient Greek but it recurs for the first time, at least in preserved literature, in Leo VI the Wise's *Taktika*, a 7th century AD Byzantine treaty on warfare, where it is used to mean various aspects of tactics that deal with calculation.

⁵² Veg. *Epit.* 4, 7-11. See also Veg. *Epit.* 3,3, 26 and 3,9.

⁵³ Allmand 2011 *passim* explore the influence of Vegetius in on the subsequent (medieval and early modern) literature. About logistics, Allmand 2011 pp. 307-310 in particular.

⁵⁴ Veg. *Epit.* 2,1,2.

⁵⁵ As already seen before, logistics appears as one of the three basic elements of warfare in Jomini. See note n. 2.

According to this later formulation of the concept, the “art of logistics” covers not only general army administration, such as subdivision in smaller units⁵⁶ and monetary management⁵⁷, or supply organization, it is extended also to include the purchase and maintenance of weapons, working tools and other pieces of equipment needed by the army⁵⁸. In this case, logistics is therefore completely integrated into the idea of warfare and is one of the aspects that a commander should master to succeed in a campaign.

Leo’s *Taktika* highlights two aspects of vital importance for the purpose of the present inquiry. The Byzantine treaty clearly puts the purchase, distribution and quality control of weaponry under the supervision of a proper administrative department, stating that, at least from a certain moment of the imperial history, this particular logistics problem has been seriously faced by imperial administration. The development of such a system implies that the Empire decided to take charge directly of this aspect of warfare in a certain moment of its long history, controlling the weaponry used by the soldiers and imposing a certain type of equipment to its troops. The Emperor Leo VI was known for his own erudition, gaining the epithet of philosopher, and he largely used previous literature for his treatise, in Asclepiodotus and Onasander in particular are among the recognisable sources⁵⁹. It is highly probable that the Emperor derived the word from a tradition lost for the modern scholarship.

It seems probable that Byzantines derived the notion of logistics from ancient sciences: the word itself knows an use in classical times, meaning “the art of calculation” or the “art of accounting”⁶⁰. The figure of the *logistes* who appears in some inscriptions was a sort of account manager for estates and other kind of enterprises and did not have any military assignment⁶¹. The semantic shifting from the civil sphere to the military one is noteworthy, and it could indicate that the increasing complexity of warfare forced the imperial administration to apply management solutions derived from or inspired by economic enterprises.

⁵⁶ Leo the Wise *Taktikà* Ep. 57 cf. *Taktikà* Strat. 5.

⁵⁷ Leo the Wise *Taktikà* Ep. 64. Cf. *logistos* in IGRom 3, 39 (Bithynia) as greek translation for the latin *curator rei publicae* with probably fiscal duties.

⁵⁸ Leo the Wise *Taktikà* Ep. 56 e Ep. 64.

⁵⁹ Dain 1967 pp. 327-329 and 353-358 in particular.

⁶⁰ See v. λογιστ-εία in Liddell- Scott (*Lexicon*) p. 1058.

⁶¹ For instance, in IGRom 3,39 (from Bythinia) the term has a Latin correspondence in *curator rei publicae* (an imperial commissioner and inspector of accounts).

1.2 - Models and Theoretical Approaches.

Recent theorization of warfare and of war studies has taken in consideration mostly modern or contemporary warfare, often confining the ancient times to the subsidiary role of prologue for the modern revolution of warfare. However, the study of ancient logistics bears many different theoretical and methodological problems that should be taken into account. In studying every aspect of ancient warfare, the historian is exposed to the danger of applying modern categories to past realities, bending therefore the reconstruction of the past in an anachronistic way. The problem is indeed well known to historians, but, as far as I know, it has been never presented in a coherent theoretical paradigm. In the field of ancient military studies, the problem has been at the core of the debate inflamed by the publication of "The Grand Strategy of the Roman Empire" by Luttwak. Since the monograph has had not only a wide impact on the present field but it also bears notable implications on the topic of the present work. Luttwak, whose background is not that of a pure historian⁶², advanced a very innovative interpretation for the general development of imperial military across the centuries. The core of his work rests on the individuation of three phases of the imperial history, each one defined by a specific use of available resources to maximise the political effort of the military system. During the first period, that lasted until the end of the Julio-Claudian dynasty, the armed forces were not only deployed along the frontiers, but troops were also deployed in the most internal region of the Empire, thus assuring the Roman control all over the provincial world and strengthening the imperial leadership. Vassal kingdoms and allies not only spare Rome the occupation of problematic lands, where the imperial administrative system could struggle in dealing with brigandage and un-urbanized population, but they also helped the Empire in securing the border, facing low-intensity threats such as seasonal raiders, and providing buffer-areas between Rome and other powers⁶³. Starting from the Flavian dynasty, legions started to be amassed on the borders with a consistent amount of supporting auxiliary units, creating heavily militarized frontier regions as a direct consequence of this massive re-deployment. Luttwak defined the system as a preclusive defence, put in place to deal in a more direct way with the constant pressure along the frontier⁶⁴.

⁶² Many reviewers of Luttwak's work pointed out, often at the very beginning of the review, the unorthodox background of Luttwak, highlighting in particular his career as military consultant for the US government: Birley 1979 p. 181; Wells 1978 pp. 527-529; Wightman 1978 pp. 174-179; Gruen 1978 pp. 563-566. However, Luttwak pointed out, in the occasion of the publication of his "The Grand Strategy of the Byzantine Empire", that his book was mostly derived from his doctoral dissertation. See the interview of the series "Conversation with History" held in Berkley in the 2010.

⁶³ Luttwak 1976 pp. 19-74.

⁶⁴ Luttwak 1976 pp. 75-170.

The last period is instead defined by a more systematic adoption of the so called “defence in depth” by Roman forces: the imperial troops were still deployed mostly along the frontiers but in multiple lines to deal better with the increasing pressure on the border areas. The depth of the imperial deployment was intended to slow enemies’ advance and to provide a full support to the intercepting imperial armies with a network of road, strongholds and fortified supply depots⁶⁵.

Luttwak introduces and debates some Clausewitzian concepts in his treatise, implying the validity of their application to the analysis of the Roman times⁶⁶. At the very heart of his theoretical approach lies the definition of war as an aspect of politics: every decision taken by the imperial leadership in the matter of military expenditure and security was *de facto* a political action. Every system identified by Luttwak was intended to maximize the cost-effectiveness of the armed forces and of their deployment. Luttwak presumes that the imperial leadership was able from time to time to gather detailed information regarding available resources, and to use that information to evaluate, more or less correctly, the overall strategic situation. The Grand Strategy was therefore decided at the imperial court and applied homogeneously and systematically in every province. Luttwak was not clear about how the shifting from one system to another has been accomplished by the Roman establishment, but the changing apparently occurred very fast.

Luttwak’s reconstruction represents the first attempts to propose a systematic interpretation of the Roman military history but the depiction of the imperial history in the “Grand Strategy of the Roman Empire” appears to be somehow simplified and the approach chosen by Luttwak can not appreciate the differences existing between the various provinces of the empire. Beside some “technical” issues, primarily regarding a scarce use of primary sources in favour of modern historiography⁶⁷, several theoretical and methodological aspects underlined have been exposed to severe criticisms and possibly represent the most crucial aspect of his work. The excessively homogeneous application of the same defensive paradigm to the whole imperial space implied by the imposition of a Grand Strategy does not respect the deep differences existing between the western and the eastern part of the empire, nor it can appreciate the variation between provinces⁶⁸. This rigid approach to warfare does not find any confirmation in the existing sources: on the contrary, imperial armed forces were able to adapt

⁶⁵ Luttwak 1976 pp. 171-253.

⁶⁶ As highlighted in particular by Wightman 1978 pp. 174-179.

⁶⁷ Mac Mullen 1977 pp. 930-931; Gruen 1978 pp. 563-566; Wells 1978 pp. 527-529.

⁶⁸ Gruen 1978 pp. 563-566.

to many situations, adopting sometimes ad hoc solutions, and Roman commanders tried to exploit enemies' weaknesses to gain substantial advantages on the battlefield⁶⁹. Nor political approach was less flexible and, as highlighted by Millar, the Romans did behave differently to various vassal kingdoms, the *socii* and *amici* that held the power thanks to the emperors and that boosted significantly Rome's frontier policy, and this gave a certain degree of flexibility to empire's political action⁷⁰.

Furthermore, Luttwak seems to consider only the military aspects of the Roman history, bending in this way the general reconstruction. Since the frontiers and the boundaries of the empire are the geographical and human space in where Roman military action has taken place, the overall approach to these historical realities is meaningful for the study of Roman logistics. Luttwak argued that Rome tried wherever was possible to hold "scientific frontiers". The concept itself knows a peculiar history, being used for the first time as a guide-concept for the establishment of the border between Afghanistan and the British Raj of India (modern Pakistan) in 1893. Planned by sir Mortimer Durand, a diplomat working for the British Raj, the border was intended to exploit natural barriers, like rivers, and to maximise the use of railways for logistics purpose, thus limiting the length itself of the frontier to shorten the chain of supply⁷¹. The desire, or the perceived necessity, to hold scientific frontiers has defined the limits of the Empire in Luttwak's work: any aggression and any attempt to expand further was decided accordingly to this spatial, and somehow geometrical, approach to foreign policy. If the logistics was forced to adapt to a dynamic situation while the Empire was pursuing a very aggressive policy of expansion, the whole situation started to change when the expansion was halted and Rome attested himself to a much more stable frontier. The defence in dept, as proposed in his mainlines by Luttwak, should have imposed a deep re-organisation of military logistics: Luttwak's scheme for the defence in dept, if accepted, could provide a useful horizon for the study of military logistics.

⁶⁹ Herodian suggests, for instance, to bring javelins and archers to deal with Germanic tribes, since their warriors lack any kind of protection: Herod. 7,2,2. the general development of military equipment during centuries, the changing in the distribution of forces and some attempts of reforms clearly show that the Roman approach to warfare knew a certain degree of complexity and it looks like the imperial establishment See also the conclusion in Le Bohec 1989 p. 271 and Gilliver 2007 pp. 183-200. However, tactical and strategical flexibility, as well as ad hoc solutions in particular campaigns or geographical conditions, does not preclude a more or less homogeneous application of the same administrative structures. In reason of the comparatively scarce amount of information regarding the military organisation in every province, contemporary historiography does not have produce a rich literature for this kind of comparison.

⁷⁰ Millar 1977 *passim*.

⁷¹ How and why the "scientific frontier" has been implemented by the British government has been explained originally in the monography of Andrew 1880 pp. 67-76 in particular. Cf. Bryce 1914 p. 8 and Davies 1974 pp. 16-1 about application of the concept of "scientific frontier" in Roman frontier studies.

However, it has been the very nature of imperial frontiers to be harshly debated by scholarship after the publication of Luttwak's Grand Strategy. The purely military nature of the borders has been subsequently challenged by various scholars.

Adopting a difference, already proposed by Lattimore⁷², between a border, intended as a fixed line of demarcation, and a frontier, a blurred peripheral area of a community, Whittaker has in particular highlighted the social dimension of the frontier⁷³. Instead of presenting the peripheral areas of the empire exclusively as heavily militarised regions, wherein Rome faced external threats in a sort of attempt to secure its sphere of influence, Whittaker defines the frontier as a liminal space of contact between different cultures⁷⁴. A dynamic area, then, in which cultural instances from different communities merged in a very experimental society. What Whittaker criticized the most were the idea of a frontier as a barrier intended to block and prevent any contacts and movement: frontiers were always relatively open space, areas of interaction in which cultural and economical exchange remained possible.

If the frontier can be defined as a blurred area that escapes any precise delimitation, nevertheless some kind of well-marked border existed and its importance lied in being known by the people. Fixed lines had an obvious administrative value, being essential elements to define the limits of *portuaria* and to precise the land under the jurisdiction of the different communities existing in the empire⁷⁵, but they generated even more value in perceptions: as symbolic lines, they define imperial power in a visual way, giving a more precise meaning in trespassing actions or in defining "neutral zones" in which meeting foreign powers or in which market exchanges were allowed.⁷⁶

The army was just one of the elements of this frontier world: its infrastructure, its soldiers and also its economy was embedded in the social reality of the border. In other words, the army fully participated in the cultural, economic and social life of the peripheral provinces of the empire.

Particularly radical have been the criticisms advanced by Isaac, who argued that a "grand strategy" never really existed in the empire⁷⁷. Proceeding from an in-depth analysis of the situation in eastern provinces of the empire⁷⁸, Isaac concluded that imperial foreign policy was

⁷² Lattimore 1962.

⁷³ Whittaker 1994 and Whittaker 2004 *passim*.

⁷⁴ Whittaker 2000 s.v. Frontiers in CAH² pp. 311-319.

⁷⁵ Potter 2004 pp. 226 – 227.

⁷⁶ Potter 1992 pp. 269-274.

⁷⁷ Isaac 1990 pp. 387-388.

⁷⁸ Wheeler 1993a p. 13 has argued that Isaac's approach has been heavily influenced by the reductionist school, leading him to a biased reading of ancient sources (Wheeler 1993a p. 18).

mostly determined by the will of the emperor and by his need to be supported by the army: in this sense, offensive wars were not planned strategically but they were propagandistic and political tools⁷⁹. The lack of a professional military class at least as intended nowadays⁸⁰, and of properly spatial image of the world, that was mostly understood according to people and kingdoms rather in a fully geographical way⁸¹, prevented the empire to develop a proper strategic approach to warfare. From Isaac's point of view, the army could have had mainly two roles: as an occupation force, the army assured the imperial control over the provinces; the army was at the same time a pillar for the imperial government, a necessary tool for its own survival. It is however not clear how the army was distributed over the land, at least in the eastern part of the empire, since no immediate threat nor strategic calculation have been advocated by Isaac⁸². Furthermore, the very concept of *limes* never had the meaning of fortified border that it has been usually attributed to the word. Interestingly, Isaac developed his own hypothesis in the same time of Forni and with very similar outputs, albeit the two scholars never worked together. Also Forni, in the *Dizionario Epigrafico*, separated the concept of fortified border from the word *limes* to stress its original meaning of "road", more precisely the word originally meant the path stretched between two fields⁸³. *Limes* maintained its original meaning during the imperial age, when it was used at the beginning in referring to military roads that penetrate into enemy's territory, allowing the imperial legions to move swiftly against every foe, or that was built in frontier areas. Road stretched along the borders were generally provided with military infrastructures, such as watchtowers and depots, and connected many camps of legions or auxiliary troops but they were not intended as a combat platform nor as a preclusive defence: the land-route network, even in such peripheral areas, granted a superior mobility to Roman armies, allowing the soldiers not only to patrol even the most impervious regions in a relatively safe conditions, but also to march swiftly to face a potential threat⁸⁴.

Far from being a static concept, the Roman *limes* was a highly dynamical reality and a true backbone of the frontier world. As both Isaac's and Forni's studies demonstrate, Romans

⁷⁹ Isaac pp. 386 and followings. In particular, a victorious war assured a profitable boot for the soldiers, assuring their loyalty to the ruling establishment. In this respect, Millar have reached strikingly similar conclusions: Millar 1982 pp. 4-7.

⁸⁰ Isaac 1990 pp. 383-384.

⁸¹ Isaac 1990 pp. 394-395.

⁸² Isaac 1990 pp. 30 and followings.

⁸³ Isaac 1988 pp. 161-179 has reached the same conclusions of Forni in merit of the meaning of the term *limes*, albeit he seemed to not have used Forni's studies in his own researches.

⁸⁴ Forni 1959 pp. 1074 – 1380.

did not see the frontiers of their empire as a barrier against the outside world, but on the contrary this liminal space was constantly projected, sometimes peacefully and sometimes more aggressively, to the regions and the peoples that lied beyond the empire. Albeit undeniably relevant from an economic point of view, the road network was originally put in place for military purposes and it was intended to boost military movements. The frontier *limes*, as we know it today, maintained and developed further the original role, becoming the infrastructural platform for launching operation: Corbulo's advance in Armenia provides, in this case, a significative example. Renown commander of his time and skilled strategist, Corbulo carefully planned his campaign in order to secure his vital logistics chain, therefore he decided to left some of his troops slightly far from the main engagement to defend the back of his army: a series of small fortlets, *praesidia*, were therefore organized to overwatch the important road that connected Trapezus, on the Black Sea shore, with the southern legionary bases of Syria⁸⁵. In a short-term view, this system of small strongholds was intended to protect the main line of supply of Corbulo's army, but at the same time the value of this land route was fully recognized by the imperial establishment. Civil war at the end of Nero's reign forced the last of the Julio-Claudian emperor to drop off his plans of conquest in the area, but Corbulo's experience was somehow re-evaluated by later emperors. Flavian dynasty, who inaugurated a completely new policy in the region, organized the province of Cappadocia, destined to become a vital cornerstone for the defence of the whole Roman east, exploiting the route that connected Trapezus, via Zigana Pass, with Satala and Melitane, respectively camp of the *XV Apollinaris* and of the *XII Fulminata*, and further south until reaching Samosata, camp of the *XVI Flavia Firma*, in the Syrian Commagene⁸⁶. The strong provincial army was deployed along this line, not forming a sort of preclusive barrier but securing the vital road network that, implementing an efficient logistics and assuring fast movements for the troops, was necessary to rule over the area. Noteworthy, this true *limes* remained in used until the late antiquity despite the administrative changes occurred to the Cappadocian province, transformed once under Trajan and subsequently re-organized by Hadrian⁸⁷.

⁸⁵ Tac. *Ann.* 13,39 See also Wheeler 1997 pp. 383-397.

⁸⁶ Corbulo had probably already occupied Melitene (Tac. *Ann.* 13,4) and Satala (Tac. *Ann.* 12,45 and 13,39): both sites had garrisoned a legion and later became permanent *castra* of the XII Fulminata and of the XV Apollinaris, who substituted the XVI Flavia Firma moved to Samosata.

⁸⁷ Bosworth 1976 pp. 64-65; Bennet 2006 p. 84

1.3 Strategic Culture.

If the *limes* system was at the core of imperial frontier policy, what could remain of a grand strategy?

Mann, in the review of Luttwak's work, have raised for the first time, at least as far as I know, the question of economical sustainability as the crucial factor for the establishment of imperial frontiers. Mann argued that Rome confined his territorial expansion in regions and lands suited for their agricultural economy. Where harsh conditions forbade Roman traditional crops or where the occupation would have been not be cost-effective, due to the warlike nature of the inhabitants or to a morphology that made harder any attempt to control the land, the empire established its own frontiers⁸⁸.

Geographical ignorance has been already pointed out by Whittaker⁸⁹ and Isaac⁹⁰ as one of the reasons that prevented the development of a true grand strategy, but if the African and oriental deserts represented obvious barriers, being lands unsuited for agriculture, it appears less clear how Rome calculated so precisely the economic value of many European regions. Direct experience of places and lands through explorations or information gathering could have provided some valuable information to Rome, but hardly this was enough to appreciate the deepest differences existing among the regions of central Europe.

Roman geographical ignorance hardly can be denied: some depiction of imperial provinces and coast are relatively accurate, but the geographical knowledge apparently faded beyond the limits of the empire⁹¹. Planning a grand strategy with so many obscure areas seems therefore to have been impossible for the Romans. Different explanations for imperial aggressive or defensive stance have been since then proposed researching in the field of cultural sociology and mass psychology.

Power-ideology in particular has been re-valuated as a crucial factor to determine the imperial behave in frontier policy. The prestige was a particularly strong motivation: the prince was ideologically obliged to avenge injustices or aggressions suffered by the Romans, but an emperor needed also to reinforce his position with victories over imperial foes to demonstrate his power and the strength of his will.

⁸⁸ Mann 1977 pp. 175-183.

⁸⁹ Whittaker 1989 pp. 66-67.

⁹⁰ Isaac 1990 pp. 404-406.

⁹¹ Whittaker 1989 63-87.

Mattern⁹² has pushed this interpretation even further, arguing that cultural aspects, such as the ideology of power is, guided the imperial establishment in his political choices. Simple elements of shared psychology represented the guidelines for military actions and frontier policy: Romans knew the concept of military deterrence, even if probably they never theorized it, and constantly applied it to secure the frontiers of the empire⁹³. Under the constant threat of Roman army, threat sometimes put into effect with brutally swift aggressive operations, the “barbarians” were constantly took under control⁹⁴. Or at least, Romans tried to project their power beyond the actual limits of their empire.

Due to the flaws and weaknesses in Luttwak’s work, it has been often denied that a Roman, or more correctly, an imperial grand strategy ever existed. Luttwak never defined what he meant with grand strategy, arising therefore many doubts and misunderstandings about the semantic value of the term. Paradoxically, sceptics of Roman Grand Strategy simply assumed that any kind of political or military strategy should be equally homogenous, successive and, somehow, perfect⁹⁵. On the opposite, a grand strategy is theoretically and technically possible even with many numerous regional variations, adaptative solutions and flaws⁹⁶. The concept itself proves however to be flexible enough to be applied in different contexts, being not really bound to an excessively modernist view of warfare.

Possibly the best definition of Grand Strategy has been offered by Kagan: the term implies “the setting of a state’s objectives and of priorities among those objectives, allocating resources among them, and choosing the best policy instrument to pursue them⁹⁷”. It follows that every community can develop a Grand Strategy accordingly to its culture, its way to understand the political reality, and its social structures. The final output could be illogical to modern standards, or inhomogeneous or even temporary but it should be considered as a collective political effort. As was already pointed out by Brodie, a “good strategy presumes good anthropology and good sociology⁹⁸”. The cultural dimension pointed out by Brodie subsequently became central in the debate started by a group of American scholars that

⁹² Mattern 1999 *passim*.

⁹³ Mattern 1999 pp. 10-11 and 21.

⁹⁴ Themistius *Or.* 10,138; Mattern 1999 pp. 109; 115-116 and note n. 159 in particular: Mattern admit that both Luttwak and Wheeler had recognized the importance of psychological deterrence in Roman policy, but they failed to recognize it as a central element of the Imperial strategic culture. Cf. Wheeler 1993a pp. 35-36.

⁹⁵ See for instance Whittaker 1996 pp. 29-31. See also Wheeler’s opinion, according to which the scientific community has largely misunderstood Luttwak’s work: Wheeler pp. 1993a pp. 7-41.

⁹⁶ As convincingly argued by Wheeler 1993a pp. 7-41 and 1993b pp. 215-240.

⁹⁷ Kagan 2006 p. 348.

⁹⁸ Brodie 1973 p. 332.

collectively developed the concept of strategic culture. Since a well-known paper of Johnston⁹⁹, three “generations” of scholars have been identified on the base of their theoretical and methodological approach to the strategic culture. Each generation is defined by the relation established between the strategic culture and the strategic behaviour. This relation is founding for the definition itself of the concept and outlines each “generation”.

The very first occurrence of the term “strategic culture” can be found in a RAND - memorandum written by Snyder in which the author debated US strategy in face of its Soviet counterpart¹⁰⁰. Noteworthy, the author felt the need to present the problem in term of rationality¹⁰¹: assuming that rational men necessarily develop a rational strategy, Snyder’s problem concerned the way to study a strategy that looked founded on a different sense of rationality or even on a non-rational thinking. Snyder did not really define the strategic culture in a proper way, providing only a more general definition of culture as it has been proposed by Kroeber and Kluckhohn¹⁰².

The inspired insight was subsequently resumed by Gray among the others, who was probably the predominant figure of the first generation. Gray partially reshaped the original problem, leaving beside the whole problem of rationality and adopting the dichotomy between “understanding” and “explaining”¹⁰³. This difference has been originally proposed by Hollis and Smith¹⁰⁴ and subsequently, despite the existing of a certain debate on the topic, widely accepted in sociology and in many other social sciences. “Explaining” refers to the identification of logical, and thus objective, chain of causes and consequences that should make intelligible a social phenomenon or, in this case, a decision. The objectiveness is searched outside the object of study in a system of logic assumptions that should be valid independently by the context¹⁰⁵. Understanding, however, refers to a different kind of knowledge in which a social phenomenon is studied from an internal point of view, thus considering the cultural context, the social structure and the peculiar way of approaching the reality that defines a community¹⁰⁶.

⁹⁹ Johnston 1995b pp. 36-43.

¹⁰⁰ Snyder 1977 *passim*.

¹⁰¹ Snyder 1977 p. 4.

¹⁰² Kroeber and Kluckhohn 1952 discuss several possible definition of culture, presenting and revisiting all the definitions proposed until the 1950s. They consequently isolate the most frequent terms of definition, that appear to have been tied to communities’ social behaviour, language and historical development. The concepts most frequently applied to the definition of “culture” appears to have bene group-referenced (pp. 291-292 in particular for a brief summary).

¹⁰³ Gray 1999 pp. 50 and followings.

¹⁰⁴ Hollis and Smith 1991 pp. 196-216 in particular.

¹⁰⁵ Hollis and Smith 1991 pp. 45-67.

¹⁰⁶ Hollis and Smith 1991 pp. 68-91.

Gray explicitly aims to understand the strategy of a community, not to explain its strategic choices. It follows that foreign policy, military system and strategical assets of a community are culturally determined¹⁰⁷.

The holistic approach adopted by the scholars of the first generation establish the strongest connection possible between the strategic culture, the way a community conceptualizes warfare, and the strategic behaviour, the way a community acts during a war. Culture itself, as Gray has argued, is the product of a very specific context but as the culture influences social structures (the organization of military forces in the present case) and the mass behaviour (the conduct during a war), it is at the same time influenced by the context¹⁰⁸. Johnston approached the question to a more positivist point of view, aiming to develop a falsifiable approach to the study of the strategic culture. Maintaining a deep difference between the culture and the behaviour, with the latter influenced by the first one, Johnston argued that a strategic culture can be reconstructed on the base of available historical information¹⁰⁹. Knowing a strategic culture should allow the analyst to predict the behaviour of a community: the prediction can be disproved by the behave of the community under analysis, consequentially falsifying the hypothesis regarding the strategic culture. Noteworthy, Johnston has been, as far as I know, the only scholar to have applied the concept of strategic culture to the study of an ancient reality, dedicating a monography to the studies of ancient Chinese strategic culture¹¹⁰.

However, the approaches proposed both by the first and the third-generation scholars proved to be too much deterministic in many respects, particularly for the purposes of the study of ancient history. While contemporary analysts can work with huge quantity of information scattered in a relatively short period of time, historians who work on ancient history have at their disposal a comparatively smaller number of sources, many of which fail in providing technical data and details, distributed across a much longer period. Furthermore, historians cannot closely follow the development a military situation, due to the loss of the vast part of ancient archives or even their non existing in the past, thus they have no need of predict a behavioural output and it is impossible to approach this topic from a positivist point of view, being hard impossible to falsify a hypothesis in the vast majority of cases.

Considered the peculiar research context of the ancient history, it should be concluded also that Gray's holistic approach appears to be somehow too vague to prove useful in its

¹⁰⁷ Gray 1999 pp. 57-60.

¹⁰⁸ Gray 1981 pp. 22-23; Gray 1999 pp. 52-53.

¹⁰⁹ Johnston 1995a pp. 36-38.

¹¹⁰ Johnston 1995b. Se also Johnston 1995a in particular pp. 53 and followings.

application: everything can be defined culturally, thus everything ultimately defined the strategic culture of a community¹¹¹. Being impossible to define what contributes to the strategic culture and what does not, a research based on the postulates of the first generation necessarily will conclude in pointing out that everything did by an ancient community respected its strategic culture, ending in a sort tautology.

The methodology offered by the third generation suffers of a very similar flaw, being over deterministic in its approach: if strategic culture rigidly determines the behaviour, it follows that a community will react every time in very similar way to the same class of problems¹¹². The behaviour itself can however progressively shape the strategic culture since decisions, actions and reactions to events can be collected and transmitted as a useful form of historical knowledge. While modern societies rely on the exploitation of huge amount of information, collected and stored as written documents, memories and oral culture was more important for traditional societies. Even in the case of Romans, who massively use writing as a cultural tool, memories of decisions and acts became part of that literary culture that ultimately shaped their strategic culture. As noticed by Campbell in a now famous paper, even highest military officers of the empire were “amateurs” if compared to modern standards: the Republic nor the Empire never developed proper military academies, relying on prominent families or veterans that passed through army ranks to form the officer corp. However, a class of professional officers was recognised¹¹³. The *virī militares* lacked the theoretical formation addressed to officers in modern armies, but they were nevertheless renowned for their skills and for their competences in matter of war. The formation of *virī militares* passed through practical experiences and what could be defined as a sort of apprenticeship, in which the younger officer served under a more experienced commander. Such a structure relied on knowledge transmission inside the army, a system in which the trainee officers learnt by observing and practicing. Furthermore, deeds of famous *virī militares* were collected and presented under the form of *exempla*, anecdotes intended to bear some kind of teaching. Together with memoirs and historical narratives, *exempla* were part of the technical literature of the time and they were used to teach notions of tactics, strategy and the art of command¹¹⁴

¹¹¹ As highlighted by Lock in his defence of the “second generation”: Lock 2010 p. 690; see also Johnston 1995a pp. 36-39.

¹¹² Lock 2010 p. 695.

¹¹³ Campbell 1987 pp. 13-29

¹¹⁴ I have found particularly interesting the interpretation given by Wheeler of the ancient collections of stratagems: far from being simply an archive of memories and anecdotes, the formula shows not only a true understanding of warfare but it could more or less effectively teach notions of strategy and tactics. See Wheeler 1988.

through the cultural interpretation of past events. The clear distinction issued by Johnston between strategic culture and strategic behaviour seems to fade for the ancient history and should be therefore discarded in favour of an approach that evaluates more the role of behaviour in strategic culture generative process.

The generative process is considered the main object of study by scholars of the second generation. Although the theoretical frame of the second generation is apparently more nuanced and less harsh, it suits better the peculiar need of ancient history research. Accepting the mutual influence between culture and behaviour, in which the latter participates in the generative process of the former, second generation scholars refuse the deterministic mechanics that characterize the first and the third generation to argue in favour of a more diachronic approach to the topic: instead of studying a strategic culture in a certain moment of time, as a self-evident object of inquiry or as a deciding factor in decision making, second generation methodology points to understand it as a perpetual and dynamic process.

Cultural determinism and holistic approach are replaced by the systematic application of the constitutive theory of language, according to which the reality it is determined by language and culture. What warfare in all of his aspects was for the Romans can be therefore deduced by the Latin and Greek semantic of warfare, by the war narratives and, more generally, by ancient literature on the topic.

Far from being a simple accumulation of information and postulates, Roman strategic culture developed from its older root with its own inner logic, shaping the Roman way to conceptualize, plan or react to political events.

Albeit developed for the study of modern and contemporary realities, second generation methodology fits surprisingly well in the field of ancient history, meeting at the same time the research attitude towards literary sources that define historian's approach.

Since the *virī militares* of the highest levels, who lead Roman policy and were an active part of the imperial establishment in their role of commanders and advisors, participated to the cultural life of the time, their decisions were necessarily conditioned by the culturally conceptualized information available at their time¹¹⁵. Furthermore, since a text does not simply describe reality but contributes to its own definition, literary works of men like Frontinus, Frontus or Arrianus did not merely account the state of affairs but, giving importance to some events or to some ideas instead of other ones, fully participated to the generative process of the

¹¹⁵ See Campbell 1975 pp. 11-31; Millar 1982 pp. 4-7 for the implications of this topic over foreign policy and strategy.

Roman Imperial strategic culture: what they wrote was acknowledged, implemented and transmitted until ultimately becoming part a strategic culture.

Furthermore, text analysis is not necessarily confined to technical works. Historical narratives, poetry and fiction literature are useful to understand how warfare was perceived not only by war professionals but by the society as a whole, by the civil community that bear the economic burden of wars. Instead of being a weak-point in this topic, the presence of a rich non-technical literature in the Roman world and the diachronical distribution of figurative and literary sources allow the historian to profitably apply these techniques¹¹⁶.

Avoiding any generalization or general law, since this approach is based on the very commendable idea that every community acts in its own cultural way and that its behaviour ultimately influence its culture, the “second generation of strategic culture” eliminates the risk of indulging in anachronistic reconstructions, such as the ones based on modern strategic notions, thus allowing the analysis of ancient warfare, or of an aspect of it as in this case, in a theoretically coherent frame¹¹⁷. However, the case for a not solely military nature of warfare nor of any of its aspects can be advocated. Grand strategy is determined, as in the already presented Kagan’s definition, by the way a community allocates resources to achieve some results. Logistics can be considered therefore the way a community redistributes part of available resources to its armed forces.

As already pointed out by Hopkins, Romans slowly developed a complex economical system in which “tax producer areas” produced enough wealth to sustain huge cities and frontier provinces, wherein large number of soldiers were deployed¹¹⁸. The existence of Rome itself and other immensely populous urban centres within the Empire was possible only thanks to this system of redistributing resources since large cities were not autonomous under many respects. Long distance trade played a relevant role alongside tax collection, often in nature, and redistribution¹¹⁹, but the system was somehow naturally balanced to exploit richer regions to sustain the consumer areas that, for being intensely populated or because of the massive military presence, consumed more than local production. Surprisingly, Hopkin’s distinction

¹¹⁶ The topic can be stylised as a study of social memory: “experience is translated by processes of collective recollection in to a set of understandings not only of the particular experiences lived through but of the varied participants in war and of warfare itself” (Kestnbaum 2009 p. 247). Ancient historiography and the sub-category of *stratagemata* literature shaped the way to imagine, understand and approach war, allowing the application of “second generation” theoretical framework.

¹¹⁷ Lock 2010 pp. 701-707.

¹¹⁸ Hopkins 1980 pp. 101-125.

¹¹⁹ Hopkins 1980 pp. 105-106 and 112-116; see also Breeze 2000 pp. 59-64 about the role of market forces in supplying the army; Verboven 2007 pp. 295-314 on the emergency, linked to the army, of a business class in the western provinces.

between “tax producer provinces” and “tax consumer provinces”, albeit expressively intended to guide the analysis of Roma military history, closely resembles the contrast between “support zones” and “combat zones” that has been previously introduced: the support zone, intended as the sum of “tax producer provinces” was potentially immense and virtually limited only by the cost and the technological limits of the transport system available at the time. Despite the evident economical nature of warfare and logistics, a Marxist approach to this topic has never been attempted.

Saint Croix¹²⁰ has shown little or few concerns for Roman ideology of power, seeing the army only as an element in the class struggle among Roman society: join the army was an easy way for the poorest class to reach an economic stability. Surprisingly, the whole aspect of production and distribution of strategic goods (food and fodder supply, equipment and weaponry) has not been investigated by the point of view of the ownership of the means of production. One way to approach the topic from a Marxist point of view could be considering that if foreign and military policy was decided by the owners of the means of production, the decisional process could have been influenced by cost-efficiency considerations. The cost of the army was a political concern for the imperial establishment, but identifying groups of power in the Empire it is not always possible nor it is beyond any doubt that cost-efficiency was the solo or the main deciding factor.

Weber’s sociological analysis, albeit only partially influenced by Marxism, represents however an interesting and powerful theoretical frame that deserves to be taken into consideration. Weber argued in favour of a progressive rationalization in almost every aspect of society and in particular of community organization¹²¹. In the slow development from ancient political entities to modern states, warfare progress from being centred on charismatic figure to a module-figured system¹²². In Weber’s sociology, this process is simultaneous with development of civil and political rights: generation process of modern armies is thus linked with a progressive democratization of society, or at least with the emergence of political forms that involve a more people¹²³.

¹²⁰ Saint Croix 1981 see in particular pp. 409-452: soldiers were exploited in the system as workers were, imperial ideology had relatively few importance for the history of the Roman Empire.

¹²¹ Weber 1978.

¹²² Weber 1978 pp. 1149 and followings. *Contra* Janowitz 1959 pp.36- 43.

¹²³ The point has been highlighted in particular by Foucault, who analysed from a sociological point of view the relations among citizens and legionaries in Rome: Foucault 1979 p. 168 and followings.

However, the idea that the evolution of combat from duels between champions to forms of massive engagement determined a substantial changing in the status of warriors is fascinating and finds some confirmation in ancient sources. Modern nations required more sophisticate and complex types of warfare: warriors progressively lost their individualities to become cellular units of wider organizations¹²⁴. As cellular units, soldiers can be variously arranged, forming ranks and formations that ideologically became the basic elements of tactics and strategy, but they are also replaceable: because their value is no more in skills and personalities but in their participation to the system as a whole, every soldier can be replaced by a companion who takes his place and his role among the army¹²⁵.

Ancient sources partially support this view. Formations represented the most basic tactical unit in Greek and Roman warfare, and technical literature reflected this approach: letters represent soldiers, who are apparently considered all equals and equally equipped in relation of their specific role, in describing the arrangement of troops on the battlefield¹²⁶.

The image of battles changed accordingly: while Greek authors imagined and explained battles in a geometrical way, Latin authors apparently followed Julius Caesar in conceptualizing battles in what can be defined as a vectoral way, as forces that push, clash and oppose resistance in a highly dynamic way¹²⁷.

It can be logically deduced that a modern army should show a certain degree of standardization: to be completely replaceable, every soldier should be trained in a same way and with the same equipment of his troop companions to form a cohesive military unit.

While we have some hints regarding this standardization in Roman imperial army, albeit it is hard to understand how much homogenous the equipment in use was, it is still not clear if the organization necessary to maintain this regulated system was actually put in place and how. Weber's sociological approach represent therefore a promising theoretical horizon for the study of many aspects of imperial army organization, including logistics, but it cannot be simply accepted as an a priori assumption.

¹²⁴ See in particular the analysis made by Foucault 1979 and the idea of the *automata* (p. 164 and followings) and cellular arrangement (pp. 143 and followings): soldiers are standardized and replaceable elements of a greater organization.

¹²⁵ Martin 2005 pp. 229-275 in particular a Weberian reading of infantry tactics.

¹²⁶ Unfortunately, drawings that eventually completed ancient manuals of tactics and strategy did not survive until present, but late examples of this practice are preserved in byzantines military treaty as the one of Mauritius (VII century AD) or the *Syntaxis armatorum quadrata*; Parisinus Graecus 2442, folio 23v: the use of symbols to indicate soldiers on the base of their own equipment seems to confirm that soldiers were considered as replaceable elements of a whole.

¹²⁷ Lendon 1999 pp. 273-329.

Theoretical and methodological aspects have been many times underrated in studying military logistics, but overall historical and sociological theories have nevertheless influenced the way that historical problems have been posed and understood. However, adopting a strong theoretical approach can heavily influence the analysis, bending the reconstruction in many ways. Particularly critical appears to be the “attempt to fix a synoptic diagram of a doxastic system”, as warfare is, that can lead to an objectivist fallacy¹²⁸.

1.4 - Models, Paradigms and Dacia as Case Study.

Every model presented can be summarized in a coherent system of assumptions and work hypothesis to understand and explain warfare as an historical phenomenon and, because logistics was an essential part of it, these paradigms provide also a theoretical horizon to frame the analysis of Roman military supply system.

Theoretically, the study of any aspect of military logistics can be framed in a wider paradigm but, even if a deductive approach is tempting¹²⁹, the lack of a systematic database does not allow to take account of every changing in Roman military across time and space, thus no existing model are reliable for the analysis of a specific provincial reality.

Furthermore, the specific aspect of production and distribution of military equipment, and notably weaponry, during the central centuries of the imperial age, for which we dispose of much less information in comparison of Republican times or Late Antiquity, poses specific challenges to contemporary researchers.

A testing ground was needed for the development of a proper methodological approach for this kind of analysis, which is one of the main purposes of the present work, and Dacia has proven to be a very good case study.

The province has been occupied for less than two centuries: the whole area was conquered by Trajan at the end of the second Dacian war and subsequently abandoned at the end of the period known as “military anarchy”, allegedly by Aurelian. Therefore, Dacia was not involved in the radical military reforms that the Empire underwent during the Late Antiquity: the conspicuous archaeological heritage that has been studied in the territory of present days Romania refers uniquely to II and III centuries, providing a clear and non-contaminated context for the analysis.

¹²⁸ Bourdieau 1990 pp. 7-11.

¹²⁹ The logical necessity of general laws at the base of the historical explanation as been strongly advocated by Hempel 1942 pp. 35-48 but it has been also fiercely debated in more recent years.

Furthermore, Dacia occupied a peculiar position that found no comparison among the other imperial provinces. The area was almost completely surrounded by peoples and tribes that were not directly subjected to the Roman power. The province was directly connected to the other Danubian provinces only because of a narrow strip of land: the bridges ad Drobeta and Laederata represented the inland access point to the province.

Relatively isolated, Dacia was nevertheless rich of natural resources. Beside the well known gold mines in the Carpathian mountains, fertile lands and pasturages, dense forests and iron exploitation in the mountains made the modern Transylvania, that formed the heart of the Roman province, a desirable province for the empire.

Considering logistics as a system that was active and worked on a provincial level, albeit not uniquely since it was technically possible to import goods from other provinces, is the methodological starting point of this study: any kind of military organization should have been planned on provincial bases, potentially with a central coordination.

As a province, Dacia presented both the possibilities and necessities that could have influenced the local organization of production and distribution of military equipment: local resources allowed local production and the conspicuous strength of the provincial army, that at this peak comprised two legions and numerous auxiliary units, represented an important and stimulating market.

Whatever organization was adopted in Dacia, it was the outcome of a prolonged evolution, being the result of centuries of continuous improvements and experimentations, and possibly influenced later developments, because it is likely that what Romans learnt in Dacia was tentatively applied elsewhere.

2. The Fangs of the She-Wolf.

2.1 - Evolutive Lines of the Roman Army until the Imperial Age.

In the previous chapter, the concept of strategic culture has been briefly introduced as a key theoretical tool for the analysis and for the understanding the way Romans approached and conceptualized warfare. In the present work, Roman culture is considered as the outcome of a slow development that lasted centuries, a long generative process that can be better understood by adopting an internal point of view as far as possible. War mentality emerges therefore also through the process of collecting and transmitting memories of the past: what Romans knew about their own history was not a mere accumulation of information, it was instead a conceptualized narrative in which importance was given to certain information. It must be accepted that the necessary selection of historical facts indicates a way of prioritizing memories, and this hierarchy reflects the very Roman culture. Ultimately, decisions taken by emperors and by their advisers were influenced somehow by their past, the history itself or Rome shaped the way the army was organized, and the way problems were recognized and tentatively solved.

Beginning the present research with the most remote past of Roman military history could appear as redundant, but several archetypal figures that maintained a capital importance throughout all the imperial times are deeply rooted not only in the Republic, but in the age of kings as well.

The etymologies proposed by Varro for words and terms related to the army point indeed to the most archaic age of the born of the *Urbs*, and several are referred by Varro to Romulus and to the very first organization of the city. *Milites, quod trium milium primo legio fiebat ac singulae tribus Titiensium, Ramnium, Lucerum milia militum mittebant*¹³⁰: the army was formed by a thousand warriors from the original each of the three original tribes of Rome. The three thousand soldiers formed the bulk of the army and fought on foot, but the cavalry was recruited with the same system from the tribes: *Turma terima (E in U abiit), quod ter deni equites ex tribus tribubus Titiensium, Ramnium, Lucerum fiebant. Itaque primi singularum decuriarum decuriones dicti, qui ab eo in singulis turmis sunt etiam nunc terni*¹³¹.

¹³⁰ Varro *De Lingua Lat.* 5, 89.

¹³¹ Varro *De Lingua Lat.* 5,91.

Varro is very vague on soldiers' equipment, enlisting for the infantry the first-line the *hastati* with spears, the *pilani* with javelins and the *principes qui a principio gladiis*¹³². Etymology proposed are not only wrong but, especially the one for "*principes*", also strangely complicated, and therefore it can be assumed that the Varro describe the equipment making a mix with intuitively etymologies and information from more recent centuries.

The organization of the Roman army under the rule of the kings is nowadays shadowed by myths, legends and by the attempts of Roman antiquarians to present an account for the past. A tripartite scheme is recurrent (3000 warriors and 300 *celeres*, cavalrymen, recruited from the 30 curiae and 3 tribes of the citizens) in ancient sources¹³³, but the precise nature of those archaic divisions is often unclear.

For the purpose of the present work, it is necessary to stress the resilience of figures and numbers and the attempt of the Romans themselves to project more historical realities in a semi-mythological time. The tripartite organization of Romulean cavalry appears indeed as prototype for the legionary cavalry contingent of the Republic¹³⁴ as described by Polybius: each legion had 300 cavalrymen, divided in 10 *turmae* and each *turma* was formed by 3 *decuriae*, lead by *decuriones* and by their adjutants (*optiones*)¹³⁵.

The first king Romulus appeared the most natural candidate for the earliest organization of the Roman army, but a deep and radical reform of the legions has been credited to Servius Tullius, who, according to ancient historiographers, had imposed the structure based on census that defined the Roman army until the last century of the Republic.

Servius' reorganization was political and military at the same time: each class was divided in *centuriae* and the *centuriae* represented both a vote unit in the assembly and a military unit of the army¹³⁶. The political power of the first class, that grouped the wealthiest citizens, was substantially larger than the one of any other classes, and consequentially the first class was also trusted with a greater military power: the first class alone was called to deploy eighty *centuriae* of heavy infantry on the field, and eighteen *centuriae* of *equites* recruited from the richest among the Romans¹³⁷. Classes from the second to the fourth deployed only twenty *centuriae* of infantry soldiers, the fifth one was charged with thirty *centuriae* while all the rest

¹³² Varro *De Lingua Lat.* 5, 89.

¹³³ Varro *De Lingua Lat.* 5,55 ;5, 89 ;5, 91 for the Roman army under the rule of the kings. See also Palmer 1970 (pp. 5-25 in particular), Poucet 1967. Regarding the *Celeres*: Liv. 1. 15.8; Dionys. 2.13. 1; John. Lyd. *de magistr.* 1.9; Plut. Rom. 26; Zonar. 7.3.4.

¹³⁴ Koptev 2005 p. 394 for the case of Roman cavalry.

¹³⁵ Polyb, 1,6,2 and 6,25 in particular.

¹³⁶ Liv. 1,43; Dion. 4,16.

¹³⁷ Liv. 1,43, 2; Dion. Hal. 4,16,2

of Roman citizens, grouped in the sixth class with only once *centuria*, was exonerated by any military duty¹³⁸. Two *centuriae* of *fabri* were attached probably to the second class, and two more of horn-blowers and trumpeters were added to the fourth class¹³⁹.

Because each *centuria* expressed a single vote in the assembly, the political power of the first class was clearly overwhelming: the wealthiest citizens expressed ninety-eight votes in the assembly, while all the other classes expressed totally ninety-five votes. Polls stopped as soon as a majority was reached, so rarely the second class was called to vote, and the lowest classes never arrived to express their vote¹⁴⁰.

The link existing between political rights and military duties is self-evident, but it can be argued also that wealthiest people did not only monopolize policy, they also were the most experienced in warfare, sustaining the combat in the first line and providing the officers of the army, and had the financial capabilities to economically sustain war activities.

However, both Livy's and Dionysus' accounts adopted an anachronistic idea of wealth based on monetary capital. As noted by Ogilvie, cattle should probably have been used at the time of Servius Tullius to measure wealth, thus the figures adopted by Dionysus and Livy refer probably to a later time¹⁴¹.

According to Livy and Dionysus, Servius' reform contained some prescriptions regarding equipment and weaponry for every classes. Everyone belonging to the first class was required to enter the battlefield with the most complete panoply possible: "*arma his imperata galea, clipeum, ocreae, lorica, omnia ex aere, haec ut tegumenta corporis essent; tela in hostem hastaque et gladius*¹⁴²". The other classes dropped respectively the breast-plate, the second class, and the greaves, the third class, while men of the fourth class were equipped only with spears and swords. Soldiers of the fifth class entered the battle armed only with slings and stone-bullets¹⁴³. Same equipment defined the classes also in Dionysius' account¹⁴⁴. The similarities between the two authors are so impressive that it has been argued that Livy and Dionysus exploited the same source for the period in question¹⁴⁵.

¹³⁸ Liv. 1,43, 4-7; Dion. Hal. 4,16, 3-5.

¹³⁹ Liv. 1,43, 3. *Contra* Dion. Hal. 4,17,2-3 states that artisans were attached to the second class.

¹⁴⁰ Liv. 1,43,11; Dion. Hal. 4,20. The total number of *centuriae* vary from 193 (Dion. Hal. 4, 18, 3 ; 19, 1 ; 20, 5 ; 7, 59, 7; 10, 7; Cic. *De Rep.* 2, 39), to 194 (Liv. 1,43) or even 195 (as proposed by Sumner 1960 pp.136-156 on the reading of Cicero).

¹⁴¹ Ogilvie 1965 p. 167. See also Walbank 1957 pp. 683-687 on the same topic.

¹⁴² Liv. 1, 43,2.

¹⁴³ Liv. 1,43,4-7.

¹⁴⁴ Dion. Hal. 4, 16– 4,17.

¹⁴⁵ Ogilvie 1965 p. 168.

Based on census, Servian system relied on the idea that every citizen should provide his own equipment on the base of his economical possibilities. The obvious distinction between the wealthiest citizens, called to form the heavy infantry and the cavalry for the army, and the citizens of the lower classes was fundamental for the system itself: only in this way a direct proportion between political rights and military duties could have been maintained.

The limited or absent role of the state in equipping the soldiers necessarily means that artisans and civil manufactures could produce all the weaponry needed. The presence of blacksmiths and bronzesmiths in the city or in the surrounding countryside can be regarded after all as a normal fact, but being enlisted as in a specific *centuria* attached to the first or more probably to the second class is a clear sign of their importance.

Fabri in Livy and Dionysus were charged of artillery maintenance, but a passage in which Cicero¹⁴⁶ mentions the *fabri tignarii* has been seen as a proof for the existence of *fabri aerarii* also: if the first ones, carpenters and woodworkers, were in clear connection with siege engines and artillery pieces, the reason for calling the latter, who probably produced soldiers' equipment, was to repair and maintain the armours, crafted in bronze, and the weapons.

Defensive equipment, that both the authors presented as crafted in bronze, were considered much more expensive than the real weapons: the poorest men could buy themselves even a sword, but only the wealthiest citizens could afford the bodily armours that was necessary to fight in close quarters. The high cost of the bronze panoply could explain the enlisting of armorsmiths among the first two classes.

In Marxist terms, however, the Servian reform breaks the rigid scheme of exploiters and exploited ones: who possessed the capital possessed also the means of production, the practical knowledge and the motivation to lead the war and was massively involved in it.

Both Livy and Dionysus described the equipment of a "classic" hoplite: the clypeus, that Dionysus translated as "Argive ὄπλον¹⁴⁷", was a large round shield of Greek fashion, only in later centuries substituted by the rectangular *scutum*; the bodily armours seems to reflect the equipment of a hoplite with breast plates and greaves as defining elements.

However, the hoplitic style of equipment, necessary for entering the battlefield in a phalanx-like close formation, was developed in Greece during the 6th century BC¹⁴⁸ and reached Italy at the end of the century. According to Ogilvie, Livy and Dionysus, or their original source,

¹⁴⁶ Livy attributes the two *centuriae* to the first class, while Dionysus to the second class. Cicero (De Rep. 2, 39) mentions the *fabri tignarii* as attached to the first class, it is possible that another contingent of *fabri* (*fabri aerarii*?) was attached to the the second class.

¹⁴⁷ Dion. Hal. 4,16,1.

¹⁴⁸ Snodgrass 1965 pp. 110-122 for a brief account.

tentatively reconstructed the archaic equipment in an antiquarian way, probably using statues and paintings that portraits personages with archaic features in their own equipment, or the literary memories of these lost pieces of art¹⁴⁹. Also, the ritual parades of *equites* and the Salii could have provided inspiration for the habits of the ancient times: the military priesthood of the Salii, that was divided in *iuniores* and *seniores*, still used armours and weapons that matched the description offered by Livy and Dionysus¹⁵⁰.

Livy's and Dionysus' accounts transferred therefore to a mythical past several aspects that defined the reality of war of the Republic, funding in this way the Roman organization of the army in the monarchical age. Details concerning soldiers' equipment should not be taken as a proof that weapons and armours were already regulated in such an archaic age, but these accounts provide an interesting insight nevertheless.

It does not appear particularly surprising that Romulus, mythical founder of the city, was also praised as the first to have given a military organization to the Romans, but the role of Servius Tullius in the development of the Roman army is somehow more interesting. The adoption of hoplite tactics and the related equipment was more probably a slow and progressive phenomenon, but it is noteworthy the attempt to address to a singular figure the institution of complex military organization.

The figure of military reformer, usually a renown commander or an emperor in later times, held a peculiar importance in Latin literature.

The evolution from the hoplite phalanx to the manipular reform took place in an un-precise moment before the 340 BC¹⁵¹, when the new tactics is mentioned in connection with the mobilisation for the imminent Latin war. Livy seems to institute a correlation between the introduction of pay for soldiers and the adoption of the manipular system, but this is probably an anachronism due to the attempt to fix a prolonged and progressive development in a determined moment.

The introduction itself of pay for soldiery represents a turning point in Roman military history: introduced in the aftermath of the fall of Anxur, it probably reflected an attempt to adapt to new conditions of warfare in which soldiers were kept on active services for a much longer time.

As Plutarch highlighted, Romans were accustomed to short campaigns that did not last longer than the summer¹⁵². The Veientes had however prepared themselves for a long siege, gathering

¹⁴⁹ Ogilvie 1965 p. 167.

¹⁵⁰ Ogilvie 1965 p. 168.

¹⁵¹ Liv. 7, 8,1-17.

¹⁵² Plut. *Cam.* 2,5. See also Liv. 5,2,1: for the first time, Romans were forced by tribunes and military officers to build *catra hiberna* for the first time.

inside the walls of the city numerous soldiers and amassing a huge amount of provisions, and forced therefore the besiegers to a prolonged state of warfare to which they were not used to¹⁵³. Operations against Veii reached a stalemate at that point, and Camillus was sent to lead the Roman forces in the siege, managing in the end to win the stubborn resistance of the rival city¹⁵⁴.

Few years later the end of the siege, the Gauls led by Brennus moved south in what appears to have been a massive raid along the Italian peninsula: the traumatic outcome of the war was the defeat suffered by the Romans at Allia and the subsequent sack of the city,¹⁵⁵.

In ancient literary tradition, Camillus led the Romans against the barbarians, crushed them on the battlefield and recovered what the Gauls had pillaged during the sack of the city and what Brennus extorted putting under siege the Roman garrison on the Capitulum¹⁵⁶. The intervention of Camillus appears unlikely, even Plutarch admitted that the renown hero of the Republic was very old at the time of the events, and it is probably motivated solely by the necessity to hide the historical truth under an ideologically oriented narration¹⁵⁷.

Unfortunately, it was in this dubious occasion that, according to Plutarch's account, Camillus imposed some radical modifications in soldiers' equipment. Because of Gauls' ability with swords, used to hit the head and the shoulder of the enemy¹⁵⁸, Camillus introduced a new type of iron helmet with smooth surfaces to deflect sword hit and reinforced Roman shields with bronze fittings on the edge to make them sturdier. He also taught Romans to use their long javelin as thrusting spear in close quarter fights¹⁵⁹.

The first part of the 4th century BC must have been a moment of intense military development, but the ancient historians were not sure about the precise moment of introduction of the new equipment and tactics.

¹⁵³ Plut. *Cam.* 2,4-2,5.

¹⁵⁴ Plut. *Cam.* 5,2 and ff.

¹⁵⁵ Liv. 5,33-55; Dion. Hal. 13, 6ff.; Plut. *Cam.* 15-30; Diod. 14. 113-17. 10; App. *Gall. fr.* 1. 1, 2-9; *Ital. fr.* 8. 2; Dio fr. 25, Zon. 7,23,11; Florus 1,7,13-19; Eutr. 1,20; *De Vir. Ill.* 23. The episode surely traumatized Roman society, but the psychological impact of the event should not be overestimated. Bellen has even considered the *metus Gallicus* as a significant factor that drove Roman foreign policy through all the Republican age, ultimately reducing the complex dynamic of Rome expansion to just one factor. See also Rupke 1990 p 74; Kremer 1994 pp. 64-65; Heftner 1997 p. 16; J. Williams 2001 pp. 221-222. *Contra* Harris 1979 pp. 127, 176, 266-267; Linderski 1984 p. 143.

¹⁵⁶ The only exception appears to have been the account of Polybius (Pol. 1,6,2-4; 2,18,1-4; 2,22,4-5) where this later victory is not mentioned.

¹⁵⁷ In Livy's account, Camillus is presented as a second founder of the city: Liv. 6,1,3 and 7,18,1. See also Dion. Hal. 1,74, 4-6. See J. Williams 2001 pp. 140-142.

¹⁵⁸ Plut. *Cam.* 40,3.

¹⁵⁹ Plut. *Cam.* 40,4.

A different tradition existed for instance about the introduction of the oval or rectangular *scutum* and the *pilum*, according to which their use was borrowed by the Romans from the Samnites¹⁶⁰. It is likely that the change in personal equipment imposed a change in group tactics as well. The introduction of the maniple as the new fundamental combat unit of the Roman army can be dated to the 4th century BC, albeit it is unclear if the maniple was adopted as a consequence of the Gallic invasions or rather as a tactical improvement intended to facilitate the fight against the Samnites¹⁶¹.

What is noteworthy to signal is once again the importance of the military reformer as a central figure in Roman historical narration. Despite the fact the account of Camillus' victory over the Gauls should be considered as spurious, the attempt to address to the legendary hero of the Republic major changing in tactics seems to point out that innovating the art of war was considered a distinctive trait of the most renowned commanders.

Furthermore, if Plutarch was correctly in using an older source, the passage highlights one of the Roman ways to introduce changing in military equipment: Roman style of weapons and armours was improved to match the fighting skill of the enemy.

Through experience and oral tradition, Romans kept memories of the war style of different peoples, showing a certain degree of capacity to adapt and possibly integrate weapons from different cultures.

Roman ability to adopt weapons and tactics from their enemies has been praised both by modern scholarship and by ancient literature, turning into a sort of *topos* for the subject.

Examples can be found during the story of Rome both at the time of the Republic as well as under the Empire. The adoption of equipment in use among different peoples and sometimes used by enemies of the Romans was so important from an ideological point of view to be considered one of the keys of success for the Roman army.

Arrianus explicitly states in the conclusion of his *Strategikà* that the Romans, and Hadrian in particular, have always adopted the weaponry and the tactics that fitted their need, stressing the importance of this practice that ultimately appears to be firmly established since the most archaic era of Roman history¹⁶².

The adoption of the *gladius hispaniensis* is probably the most known example of this practice.

¹⁶⁰ Sallust. *Cat.* 51.

¹⁶¹ Salmon 1967 p. 105 and ff.; Homo 1930 p. 568. *Contra* Adcock 1930 p. 596.

¹⁶² Arrian. *Tak.* 23,2-3. See also Tonnet 1988 vol. I pp. 58-59, vol II pp. 59-60.

When Romans faced Iberian warriors during the Second Punic War they were impressed by the high quality of their swords. Polybius¹⁶³, later recalled by Livius¹⁶⁴, described the equipment of Gauls and Iberians, highlighting that despite a certain similarity in defensive equipment, (namely the use of oblong shield) the two people showed a completely different fighting style: while Gallic swords were intended to cut and slash, in the way already mentioned in regards of the Gallic invasion faced by Camillus, Iberian swords can be used to stab and perform lunges as well as to cut.

Perhaps, the Iberian swordsmen impressed the Romans the same way as the Romans themselves did against the Macedonian infantrymen, who were terrified by the deadly effects of this type of sword¹⁶⁵.

It is however puzzling that relatively few attentions have been paid by modern scholarship to the technical issues connected with the adoption of a new equipment.

The problem is indeed well known in the field of strategic and military study, but it has been studied mostly in relation of modern and contemporary warfare. From the modern age onwards, when warfare started changing at a faster rate, a gap between the technical development of a weapon and its tactical implementation has been constantly observed¹⁶⁶.

This gap is motivated by the necessity not only to train the troop to use, or to face, the new weapon, but also by the need to comprehend the new tool from a tactical and a strategical point of view. The apparently fast adoption of the *gladius hispaniensis* poses therefore a specific problem: if the Romans were not trained with this kind of weapon, nor they knew how to properly craft this type of sword, why did they chose do adopt it so widely?

The Souda lexicon mentions the technical problems related with the production of the Iberian sword: Romans were able to copy the shape of the blade, but they could not craft swords of equal quality¹⁶⁷. Copying a technology without proper analysis-instruments is not an easy task, and the Souda passage explicitly highlights the difficulty. Furthermore, it can be hardly understood why a Roman should have adopted a sword that he was not familiar with. Only accepting that Roman fencing was somehow naïve and not very complicated it could be assumed that a soldier, who bought his own equipment, would buy a weapon to defend himself in the battle but he was not trained with it. On the other side, literary sources clearly state that

¹⁶³ Polyb. 3,114,2-3; 6,23,6-7.

¹⁶⁴ Liv. 22, 46.

¹⁶⁵ Liv. 31,34.

¹⁶⁶ See Giacomello – Badialetti 2012 pp. 216-226.

¹⁶⁷ Suda s.v. *machaira* (Adler *mu*, 302).

Romans were capable to appreciate the technical quality of the Iberian sword and they adopted it to acquire a tactical advantage on the battlefield.

A Senate's deliberation for the adoption of the Iberian sword seems possible but, despite literary sources apparently record some legislation that aims to impose a homogeneous military equipment, it cannot be proved and it should be therefore considered unlikely¹⁶⁸.

Hiring Iberian craftsmen to produce swords could have been a possibility, but Souda passage denies this solution. Even if the quality of the "new" swords was inferior to the original model, the different shape and especially the superior length of the blade required to train the soldiers in a specific way. Scipio, who probably adopted widely the new-type gladius during his campaign in Iberia, imposed a strict regime of training to his soldiers, one of the first training program in the Roman army to be known to modern scholarship¹⁶⁹.

The adoption of the rectangular scutum, the *pilum* and the *gladius hispaniensis* defined the manipular tactics employed by the Romans from the Second Punic War to the end of the 2nd century BC, when a new system based on the tactical formation of cohorts was adopted.

The cohort regrouped at the beginning three maniples, one for the *hastati*, one of the *principes* and one of the *triarii*. The tactical unit was therefore larger than a maniple, but assured nevertheless a certain degree of tactical flexibility¹⁷⁰. Furthermore, it was apparently better to hold firmly against the impetus of the barbarian warriors.

It has been debated when this tactical innovation, that characterised and defined the Roman army from the last century of the Republic to reign of the Caesars, has been precisely introduced.

Maniples are mentioned for the last time, at least in Latin literature, by Sallust at the end of the 2nd century BC: Metellus still used them to face Iugurtha in North Africa¹⁷¹. Marquardt¹⁷², later reprised by Parker¹⁷³, has therefore proposed that Marius, who is credited by ancient sources for military reforms¹⁷⁴, introduced the cohort as fundamental tactical unit of the Roman army. Bell, however, proposed a different lecture of the literary source: the passages from Polybius¹⁷⁵,

¹⁶⁸ In the past, doubts have been raised about the generalized adoption of the Iberian sword-type among Roman soldiers: see Sandars 1913 pp. 58-62. In more recent times, archaeological evidences have allowed to identify the prototype of the Roman swords derived from Iberian types: Quesada Sanz 1997 pp. 251-270.

¹⁶⁹ Polyb. 10, 20,3-4.

¹⁷⁰E. Meyer 1924 vol. 2 pp. 8 and followings; Brizzi 2002 pp. 113-114; Keppie 1984 pp. 43-45.

¹⁷¹ Sallust. *Jug.* 49.

¹⁷² Marquardt 1884 vol. 2 p. 435

¹⁷³ Parker 1928 p. 28 and followings.

¹⁷⁴ Plutarch. *Mar.* 45.

¹⁷⁵ Polyb. 11,23,1; 11,33,1.

Livy¹⁷⁶, Appian¹⁷⁷ and Frontinus¹⁷⁸ that attest the use of the cohort in Iberia shall not be considered as anachronistic, but instead they confirm that the peculiar conditions of warfare in Iberia have determined a certain development in Roman infantry tactics¹⁷⁹.

Bell and more recently Brizzi¹⁸⁰, who openly revived the older hypothesis, have argued instead that the cohort-based organization was needed to face opponents who relied more on the impetus in the opening clash than in the friction of a prolonged battle¹⁸¹. In particular, the guerrilla-style progressively adopted by the Celtiberian tribes, who openly avoided pitch battle in open field, forced the Romans to find a counter strategy: maniples risked evidently to be isolated, attacked one by one and destroyed by sudden ambush. To prove his point, Bell provided some examples from modern history in which highly trained troops proved to be ineffective against enemies who employed more direct and brutal tactics¹⁸². The cohort, that guaranteed a more compact deployment, was therefore the most natural solution implemented by Roman commander to face this kind of threat.

Initially adopted only in Iberia, the cohort definitely replaced the maniples theoretically when Rome had already overcome the most “civilised” enemy, and noteworthy the opponents that adopted a Hellenistic approach to warfare. Bell is right in arguing that Cimbri and Teutones hardly applied tactics unknown to the Romans¹⁸³, and therefore Marius had no reason to adopt radically new tactics to face the northern tribes: he could have simply adopted solutions already tested and known for being efficient. However, Rome had already waged war against the Celtic and the Ligurian tribes of North Italy, who supposedly relied on this shock-tactics. Similarly, the maniples were abandoned even against those enemies, notably the last of the Hellenistic kingdoms, who applied a more complex approach to pitch battles¹⁸⁴.

The homogeneous adoption of the cohort as tactical unit imposed nevertheless a certain reform of the Roman legion both in its organization and in its equipment. Marius, who is never credited by ancient authors for such a development, was praised for having reformed military

¹⁷⁶ Liv. 25, 39,1; 27,18,10; 28,13,8; 28,14,17; 28,23,8; 28,25,15; 28,33,12; 34,12,6; 13,14,1; 34,14,7; 34,14,7; 34,14,10; 34,15,1; 34,19,9; 34,19,10; 34,20,3; 34,20,5.

¹⁷⁷ App. *Iber.* 40.

¹⁷⁸ Front. 2,6,2; 4,1,23; 4,1,26; 4,7,27.

¹⁷⁹ Bell 1965 pp. 411-413.

¹⁸⁰ Brizzi 2002 pp. 107-118 for the discussion.

¹⁸¹ Bell 1965 p. 415; Brizzi 2002 pp. 114-118.

¹⁸² Bell 1965 p. 410.

¹⁸³ Bell 1965 p. 405.

¹⁸⁴ Bell 1965 p. 415; Brizzi 2002 p. 118.

equipment¹⁸⁵, echoing and perpetuating the literary *topos* that is progressively emerging in the Roman military narration.

The *scutum*, the *pilum* and the *gladius*, paired with a short dagger, represented the standard equipment of the Roman legionary from the time of Polybius¹⁸⁶ onwards, being clearly perfectly suited for the tactics employed on the battlefield.

Marius' most influential reform was however a deep change in the recruitment procedures.

The prolonged state of warfare stressed the texture of the Roman society, bearing the highest classes, that should technically provide the bulk of the army, with an unbearable weight.

Minimum criteria for entering the army have been already lowered during the Punic War, when the pressing need of the Republic forced the establishment to a mass recruitment campaign.

Recruiting the lower classes of the Roman society, the *proletarii* and the *capite censi*¹⁸⁷, necessarily meant a deep reorganization of the supply system: previously, citizens were required to buy military equipment accordingly to their financial possibilities, but after Marius' reforms even the poorest among the Romans could have the possibility to join the legion, serving as heavily armoured infantrymen.

The state loaned the sum of money needed to buy the equipment and soldiers were probably required to return weapons and armours after discharge.

If the Senate chose to proceed in this complex way instead of directly producing the equipment for the soldiers, this can be understood only presuming that no state workshop existed at the time. On the contrary, the existence and the activity of a network of civil manufactures is indirectly attested for the 1st century BC.

Not only the free market was the only possibility available, but the frequency of private armies, recruited and equipped at the expense of singular personalities, that interested the Roman Republic during its final crisis is a strong evidence for this argument: clearly, rich and influential citizens were able to buy on a supposedly un-regulated market what they need to arm their soldiers¹⁸⁸.

¹⁸⁵ Plut. Mar. 45.

¹⁸⁶ Polyb. 6,22-25.

¹⁸⁷ Cic. *De Rep.* 22, 40 makes no distinction between the two groups, but Gellius in *Noct. Att.* XVI,10, 10 apparently refers to a distinction originally existing between the two classes.

¹⁸⁸ De Blois 2007 pp. 164-179.

At least arms for personal defence were probably available to a relatively large number of persons in the Roman society if, as stated by Cicero, shepherds were known to normally carry swords and other weapons to defend the flock against beasts as well as bandits and raiders¹⁸⁹. Despite the supposed multitude of blacksmiths, armourers and swordsmiths, the relative homogeneous equipment of the soldiers suggests that some kind of regulation was in use at the time.

It can be argued that soldiers had all the interest in buying the best weapons and armours they could, since their lives depended on the quality of their equipment, and therefore it is possible to suppose that the Senate had no need to implement laws to assure the best quality possible for the military equipment in use.

Training, cultural habits and the nature of Roman warfare determined the equipment of the soldiers, especially in the most archaic ages. However, the particularly compact fighting style employed by the Romans on the battlefield required soldiers who used the same offensive and defensive weaponry. Soldiers needed to march all together, this implied that the burden of the equipment had to be equal for every warrior: wearing heavier armours or bearing larger shield could offer a better protection on the battlefield, but the heavier weight could slow down some warriors, breaking the rigid geometry of the unit.

Furthermore, differences in weaponry means differencing in fencing and combat techniques. Albeit debated, it is known from ancient sources that soldiers were regularly spaced in the ranks: the unit could contract or open to fit different roles on the battlefield and, when ranks were particularly close to form a the most solid front possible, the Roman soldier had a fixed amount of space available to use his weapons¹⁹⁰.

During the Republic, as well as during the Empire, swords, *pugi* and spearheads length varied inside a certain range accordingly to their type, possibly meaning that exceeding a certain length or weight, or being too much under the standard, made them not practical for being used inside the infantry formation. As for the offensive weaponry, choice could have relied on cultural habits or on the training receive, assuming as natural that a veteran trained a recruit in the same way he was trained in the past. Obviously, this approach can lead only to a certain resiliency to the adoption of new equipment and tactics.

The reported attempts to introduce specific piece of weaponry, like the *gladius hispaniensis* or the combination of *pilum* and *scutum*, proved however that Roman society was capable to

¹⁸⁹ Cic. *Ap. Asc.* 87C.

¹⁹⁰ Taylor 2014 pp. 301-322 for a discussion.

express some innovation in matter of military tactics. Since literary evidences attributed these innovations from time to time to a single commander, it is not clear if the Senate legislated over the matter or if individuals had a certain degree of freedom while acting for the Republic.

The figure of the general that improve, innovate or reform the army held in any case a central place in the historical narration of the events, anticipating a not uncommon topic of the imperial propaganda.

2.2 - Augustus, the Fabricae System and the Missing Link.

The last decades of the Republic stressed Rome's military organization and, from many points of view, overturned the Roman war-habits. Ultimately, tactical innovations introduced from Marius onwards shaped the army of the early Empire.

Starting from the end of the 2nd century BC with the adoption of the cohort as base tactical unit, Roman legions became contingent predominantly composed of heavy infantry soldiers¹⁹¹, with few cavalrymen charged with patrol duties, entrusted with the protection of the commander and often employed as outrider¹⁹².

The disappearance of the "citizens' cavalry" represented a noteworthy historical dilemma, it could have been motivated by a deep exhaustion of Italian élites and manpower during the Social War and it brought the enrolment of consistent cavalry contingents from non-Italian people and tribes as a consequence¹⁹³.

Auxiliary warriors and soldiers appear frequently in Caesar's account, who employed Gallic and Germanic cavalry quite often¹⁹⁴, and Roman commanders of the time relied on troops offered by allies and vassals to reinforce their forces and to assure tactical flexibility to their armies¹⁹⁵. Ethnical patterns are already evident in this stage. Romans had a stereotypical vision of the world, in which every people excelled in a combat style, and they tended to recruit warriors

¹⁹¹ Since the *velites*, the skirmishing light infantry of old legions, are mentioned for the last time by Sallust *Jug.* 46,7 in relation to Metellus' operations against Jugurtha, it is believed that *velites* ceased to exist with Marius' reforms. The disappearing of census-based principles for recruitment and army organization meant also the disappearance of equipment differences between legionaries and it is therefore likely that the *triarrii* ultimately lost their spears to adopt the same equipment of their comrades: Keppie 1984 pp. 43-44.

¹⁹² Communications: Pavkovic 1991 p. 94, Speidel 1986 pp. 163-168. Legionary cavalry acted also as bodyguards for the *legati* and for other important officers: a function already recognized by Besnier 1899 pp. 236 and ff. and also presented by Cagniard 1992 pp. 71-85, although Le Bohec 2001 pp. 86 and ff. suspected Cagniard exaggerated his own conclusions on the topic. Vegetius (3,6 and 3,16-17) mentions also the fighting role of legionary cavalry, presented the horsemen as a useful tactical reserve. Exercises presented by Arrian *Tak.* 32,3-44,3

¹⁹³ McCall 2001 pp. 100-113 for an account of the problem.

¹⁹⁴ Campi 1996 pp. 3-17 for the Germanic cavalry in particular.

¹⁹⁵ Pompeius received a contingent of mountend archers by his ally, Antiochus of Commagene, during the Civil War: *Caes. Bell. Civ.* 3,4,5.

accordingly to these prejudices. In some cases, from Caesar onwards, new preferences emerged: the renown Cretan archers were progressively replaced by bowmen from the East during the imperial age¹⁹⁶, and Batavians quickly gained a renown as amphibious warriors and assault troops¹⁹⁷.

For the purpose of the present study, it is irrelevant if Roman stereotypes were completely or only partially justified: Romans had probably some reasons to consider some warriors particularly skilled in certain tactics and they logically tried to exploit their abilities.

Until the Augustan age, troops from allies and vassals of Rome served under the orders of their leaders in a perfect tactical complementarity with legions mainly composed by heavy infantry: these ethnic units assured a vast range of tactical options, protecting the flank of the formation, serving as explorers, skirmishers and ranged units.

When the Augustan revolution transformed the Republican army into a professional organization in permanent service, the “ethnic” contingents were reformed accordingly in the stable system of auxiliary units¹⁹⁸.

Auxiliary soldiers kept assuring tactical flexibility to the Roman army and used their national war traditions and weapon-style. The preferences of the past were partially maintained, and commanders were chosen, at least at the beginning, from professional officers as well as from community leader¹⁹⁹.

From a superficial point of view, the organization did not change much from Republican times: the heavy legionary infantry was supported on the battlefield by a range of vary support troops who fit many different tactical roles.

However, Republican armies were supposed to disband after the war and allied contingents with them while the new Principate army was active also in peacetime and this means that many communities had their own warriors permanently armed and ready for war.

¹⁹⁶ Cretan archers, Balearic slingers and Numidian cavalry during the Gallic Wars: Caes. *Bell. Gall.* 2,7. In general for the recruitment of auxiliary troops during the imperial age see Cheesman 1914 pp. 57-101.

¹⁹⁷ Dio 55,24,7; CIL III 3676 (poem written by Hadrian himself celebrating a warlike showcase with fully equipped Batavian warriors swimming across the Danube). See also Roymans 2004 pp. 227- 234.

¹⁹⁸ Cheesman 1914 pp. 14-20.

¹⁹⁹ See in particular Birley 1978 pp. 257-273 for an account of cavalry units. As highlighted by Birley, mounted troops appear to have been regulated more strictly from Augustus onwards, while at the time of the civil wars the situation was more fluid and dynamic (Birley 1978 pp. 258-259). See also Speidel 1977 pp. 511-515 and Speidel 1982 pp. 165-172 about known cases in Egypt. During the imperial age, the case of Lusius Quietus is probably the best known example of a non-Roman leader serving in the imperial army: Amm. 29,5,5; Dio 68,32,4 and ff.; Them. *Or.* 16. See also Carcopino 1934 pp. 5-9, and the study of Den Boer 1948 pp. 327-337. See also the replies of Roos and following debate: Roos 1950a pp. 158-165; 1950b pp. 336-338; Den Boer 1950a pp. 339-343; 1950b pp. 263-267. Palmyrean archers are known also for having being commanded by Palmyrean nobles and aristocrats during the imperial age se Tentea 2012 pp. 19-23 (with a particular focus on Palmyrean archers in Roman Dacia). Levantine warriors followed similar habits.

Obviously, what Augustus faced could be labelled nowadays as a problem of national security: the power of the princeps relied on his ability to control the armed forces and to prevent any kind of insurgence from the subjected communities.

One of the solutions found by the imperial establishment was to prevent ethnic troops to serve in the same country they were recruited: in this way, warriors found themselves in a potentially hostile environment and were hypothetically forced to remain loyal to the Roman power²⁰⁰.

What appears to have been a political decision determined military logistics especially in the western part of the empire. Deploying ethnic units had sense only if these units conserved their traditional combat style, and they need their traditional weaponry do fit their role on the battlefield. Being sent far from the homeland, however, auxiliary units had for sure difficulties in refilling their ranks, but they experienced also issues in repairing and producing the equipment needed.

While in the densely urbanized eastern provinces troops were often quartered in villages and towns, in Europe there was no pattern of urban settlements to sustain military needs.

Camps of various dimension, some of them large enough to gather more than one legion inside or several auxiliary units, were built all over the imperial provinces, assuring a military presence also in the interior of the provinces, but progressively legions and auxiliary units were moved towards the frontiers²⁰¹.

At this stage, the absence of a civilian texture underneath the military organization forced the Empire to found local solution and to develop a relatively simple logistic organization. Obviously, military camps represented the anchorages of this system.

The “*fabricae*-system”, as it can be called, should be therefore considered an organizational solution to a social and political problem. A *fabrica* was a military workshop charged with maintenance and production of military equipment, including weapons and armours used by soldiers.

Literary sources on the subject are particularly scarce, the very first mention dates only to the 2nd century AD, when the anonymous author of *De Munitiombus Castrorum* presented the *fabrica* as a common asset in military camps alongside the *valetudinarium*: the two buildings were hypothetically 70 pedes far one from the other to let the blessed soldiers rest and recover without being disturbed by workshop activities²⁰².

²⁰⁰ Auxiliary units were indeed often deployed far from their native land when possible: Cheesman 1914 pp. 68-85 notes that the army of Britain were largely composed by troops from the Rhine land. Dacian troops are indeed absent from Dacia, for instance. More nuanced is instead the situation of the provinces along the Rhine.

²⁰¹ Luttwak 1976

²⁰² Ps. Hygin *Liber de Munit. Castr.* 4.

The treatise has been variously dated from the Trajan age, with a possible connection to the wars against the Dacians²⁰³, to Marcus Aurelius²⁰⁴, to the age of the Severan dynasty²⁰⁵ and the military anarchy of 3rd century AD²⁰⁶ depending on the various lectures of technical terms.

More generally considered to have been written during the 2nd century AD, the essay describes how a legionary camp should be organized: it is therefore a sort of manual in which a theoretically perfect situation is described, but it offers few insights about the reality of the *castra* that, at the present state of research, varied differently²⁰⁷.

The *Corpus Iuris Civilis* presents a list of *immunes*, soldiers exempt of daily fatigues for being charged of other and more specialised tasks, among which are enlisted “general” workmen (*fabri*), makers of arrows (*sagittarii*), of helmets (*bucularum structores*), swordsmiths (*gladiatores – sic*) and the *optio fabricae*, who was in charge of the military workshop, as well as workers of various materials (iron, copper, bronze) and officers of the military administration:

“Quibusdam aliquam vacationem munerum grauiorum condicia tribuit, ut sunt mensores, optio valetudinarii, medici, capsarii, et artifices qui fossam faciunt, ueterinarii, architectus, gubernatores, naupegi, ballistarii, specularii, fabri, sagittarii, aerarii, bucularum structores, carpentarii, scandularii, gladiatores, aquilices, tubarii, cornuarii, arcuarii, plumbarii, ferrarii, lapidarii, et qui calcem cocunt, et qui siluam infidunt, qui carbonem caedunt ac torrent. In eodem numero haberi solent lani, uenatores, uictimarii, et optio fabricae, et qui aegris praesto sunt, librarii quoque qui docere possint, et horreorum librarii, et librarii depositorum, et librarii caducorum et adiutores corniculariorum, et stratores, et polliones, et custodes armorum, et praec, et bucinator. Hi igitur omnes inter immunes habentur²⁰⁸”.

“Their status grants some exemption from the more burdensome munera to some people, for instance, those who measure out [the corn], the assistants in a hospital, doctors, makers of satchels, and craftsmen who dig ditches, veterinary surgeons, architects, helmsmen, shipwrights,

artillery manufacturers, mirrormakers, builders, archers, bronze-workers, makers of statues of bronze cows, wagonmakers, shinglers, gladiators, conduit-inspectors,

²⁰³ Durry 1938 p. 84 and ff., Richmond 1939 p. 18; Frere 1980 pp. 51-60 argued for the age of Domitian instead.

²⁰⁴ E. Birley 1966 pp. 54-67.

²⁰⁵ Marquardt 1878 vol. II, p. 578 and ff.; Mommsen 1884 pp. 210-234; Jung 1889, p. 153- 160; Gemoll 1876 pp. 164-178; Ursin 1881 pp. 14 and ff.

²⁰⁶ Droysen 1875, pp. 469-470; Förster 1879 pp. 237-44.

²⁰⁷ Grillone 1987 p. 406 in particular.

²⁰⁸ *Corpus Iuris Civilis* (Digesta) 50,6,7.

conduitmakers, trumpetmakers, bowmakers, leadworkers, ironworkers, stonemasons, those who burn lime, those who cut wood, those who cut and prepare charcoal. In the same category are customarily placed butchers, hunters, victimam'i, the assistants of a factory, those who serve the sick, also copyists who can teach and the secretaries of granaries, of depositories, and of controllers of estates without owners, also helpers of adjutants, grooms, undertakers, guards for armories, also a herald and a trumpeter. So all those are regarded as being immune"²⁰⁹.

The passage can be attributed however to Tarruntienus Paternus, who wrote in the 2nd century AD, and therefore it describes the situation during the centuries of the High Empire. Referring to the legions of the past, Vegetius, who asserts to have used authors of the 2nd century AD²¹⁰, reports the more or less the same information:

"Epitoma Rei Militaris II, 11: De Officio Praefecti Fabrorum. Haabet praeterea legio fabros tignarios structores carpentarios ferrarios pictores reliquosque artifices ad hibernorum aedificia fabricanda, ad machinas turres ligneas ceteraque, quibus uel expugnantur aduersariourm ciuitates uel defenduntur propriae, praeparatos, qui arma, qui uehicula ceteraque genera tormentorum uel noua facerent uel quassata repararent. Habebant etiam fabricam scutarias loricarias arcuarias, in quibus sagittae missibilia cassides omniaque armourm genera formabantur. Hae enim erat cura praecipua, ut quicquid exercitui necessarium uidebatur numquam deesset in castris, usque eo, ut etiam cunicularios haberent, qui ad morem Bessorum ducto sub terris cuniculo murisque intra fundamenta perfossis inprovisi emergerent ad urbes hostium capiendas. Horum iudex proprius erat praefectus fabrorum".

"Moreover the legion has engineers, carpenters, masons, wagon-makers, blacksmiths, painters and other artificers, ready-prepared to construct buildings for a winter camp, or siege-engines, wooden towers and other devices for storming enemy cities or defending our own, to fabricate new arms, wagons and the other kinds of torsion-engines, or repair them when damaged. They used to have workshops, too, for shields, cuirasses and bows, in which arrows, missiles, helmets and arms of every type were made.' For the main aim was to ensure that nothing which the army was thought to require should be lacking in camp, to the extent that they even had sapped who, after the fashion of the Bessi," sank mines underground, and dug through the foundations of walls to emerge unexpectedly and capture hostile cities.' The particular officer responsible for these matters was the Prefect of engineers²¹¹".

²⁰⁹ English translation from Watson 1985.

²¹⁰ Veg. 1, 8 mentions Frontinus, Cornelius Celsus, Tarruntienus Paternus and Cato the Censor.

²¹¹ English translation from Milner 2001.

The passage poses indeed many problems of interpretation and, since it has hold a central place in the debate concerning *fabricae* and the production of military equipment. Despite the account of Vegetius is not particularly extended, it represents a strong assessment about legion self sufficiency in matter of logistics and production of military equipment. The identity of Vegetius is unclear. The name itself has been variously reported by sources. The first surviving manuscript of the *Epitoma Rei Militaris*, date do the 7th century AD, present the author (in genitive) as P. Vegati Renati. Johannes Lydus²¹² refers to him only as “Renatus”, while Priscianus²¹³ mentions him as Renatus preceded by a named variously read (Vegetius, Vegitius, Vegetus, Vegitus or Vigitus)²¹⁴. Being Vegetius the only attested form, it has been accepted as the original author name²¹⁵. Medieval tradition, however, unanimously presented the author of the *Epitoma* as “Flavius”, that was probably adopted as an honorific title received for the career in the service of the state²¹⁶.

Even less clear is the emperor to which the *Epitome* has been dedicated. The subject has indeed inflamed a huge debate that lasts since the very first critical editions of Vegetius’ work. Obviously, the emperor whom the treatise was addressed is a key factor for date and purpose of the work itself. The death of Gratian, who is presented as *divus*, in AD 383 represents obviously a *terminus post quem*²¹⁷. It is also known that Vegetius’ work was edited in Constantinople by a Flavius Eutropius around the AD 450, considered therefore as the *terminus ante quem*²¹⁸.

The emperor Theodosius is addressed as the dedicatory in many medieval manuscripts, but Reeve has pointed out that it occurs sporadically and that it can be conjectural²¹⁹. Originally accepted by Lang²²⁰, it was challenged by the counter argument of Seek²²¹, who pointed Valentinian III as the dedicatory of the work. The proposition has not been accepted unanimously and many other scholars continued to prefer Theodosius as main reference.

²¹² Lyd. *De Mag.* 1,47.

²¹³ Prisc. *Inst. Gram.* 3,21.

²¹⁴ See Shrader 1979 pp. 280 – 305 for an account.

²¹⁵ A P. Vegetius Renatus is the author of a *Mulomedicina*, a treatise of veterinary medicine. It could be the same character or an author who bare the same name, see Schöner 1888 pp. 19-25. *Mulomedicina* has been edited by Lommatzsch 1903.

²¹⁶ Allmand 2011 pp. 1- 9 (in particular for what concerns the transmission of Vegetius through the Middle Age).

²¹⁷ Veg. 1,20,3.

²¹⁸ Lang 1885 pp. vi and xvii.

²¹⁹ Reeve 2004 p. viii.

²²⁰ Lang 1885 pp. viii and ff.

²²¹ Seek 1876 pp. 61-73, Lang accepted Seek’s proposition in a later time.

Goffart²²² re-opened the question in a famous paper during the '70s, arguing one more time in favour of Valentinian III. Goffart's thesis has been subsequently reprised by Birley²²³ and Varady²²⁴, but it has been also challenged by Barnes²²⁵, Chastagnol²²⁶, Sabbah²²⁷ and Richardot²²⁸ among the others, who once again argued in favour of a dating to the late 4th century AD.

For the purpose of this study, however, it is noteworthy to point out that Vegetius wrote his treatise as response to a military crisis in both cases.

Both Theodosius, who lead the empire in the difficult aftermath after the defeat suffered by the Empire at Adrianopolis, and Valentinian III were facing military problems in dealing with the increasing pressure of barbarian tribes over the Western part of the Empire.

Vegetius intended therefore to offer some solutions inspired by the *sapientia* of the ancients to what appears to be a deadly crisis for the Empire²²⁹.

It is particularly striking the link existing between the passage on the military production and the harsh judgement of emperor Gratian as the main responsible for the poor condition of the infantry at the time the *Epitoma* was written.

Vegetius clearly stress that Roman infantry soldiers suffered a series of defeat against the Goths for not wearing defensive equipment, namely helmet and cuirasses²³⁰.

It is not clear when these events happened. Unfortunately, Vegetius is ambiguous in his sentence: "*ab urbe enim condita ab usque ad tempus divi Gratiani*" can be read both as the decline of Roman infantry started at the time of Gratian or after his death²³¹. It has been proposed that, if the *Epitoma* dates to the time of Theodosius, Vegetius refers to the defeat of Adrianopolis²³², but a later dating of the whole work would postpone the events referring probably to a more generalized crisis that occurs during the 5th century AD.

²²² Goffart 1977 pp. 65-100.

²²³ Birley 1985 pp. 57-67.

²²⁴ Varady 1961 pp. 333- 396.

²²⁵ Barnes 1979 pp. 254-257.

²²⁶ Chastagnol 1994 p. xcii of the preface.

²²⁷ Sabbah 1980 pp. 131-155.

²²⁸ Richardot 1998 pp. 136-147.

²²⁹ Goffart 1977 pp. 92-99.

²³⁰ Veg. 1,20,3-5.

²³¹ Charles 2003 pp. 128-129.

²³² As Charles already noted, Ammianus Marcellinus' account of the battle of Adrianapolis clearly show that imperial forces wore armours at the time. In Ammianus, Roman infantrymen were exposed to Goth arrows not because the lack of armours but because of the cavalry refused to engage the enemy, betraying and condemning the bulk of Valens' army. Charles 2003 pp. 136-149. If initially Charles has denied that Vegetius could refer to the battle of Adrianapolis, he later changed his mind: Vegetius could have made a reference to the events of AD 378, more precisely to the whole Balkan campaign and not only to the battle. Charles 2008 pp. 221-234.

Beside the chronological problem, the imperial infantry of the Late Antiquity was probably equipped differently and, considering also the increased importance of the cavalry, it is possible that only the élites of the infantrymen wore a complete *panoplia*, while the vast majority of soldiers fought more lightly armoured than before²³³.

It is known that from the time of Diocletian onwards, the Empire started developing a new logistic system based on large manufacture for mass production of weapons and armours. The state directly managed the workshops that were active both in the eastern and in the western part of the empire²³⁴. The *Notitia Dignitatum*, an official document probably written under the reign of Honorius, enlists 35 of these structures²³⁵. Many of them bear a generic title but some of these *fabricae* apparently was charged of specific productions.

It is not completely clear how the system works, since the distribution of the *fabricae* was so scattered that it forced to transport piece of equipment for very long distances, but it is highly probable that the state-ran workshops did not exhaust all the production and that military ateliers, built inside camps, still existed besides a civil market.

It could be argued furthermore that the system was vulnerable against massive invasion: when the Goths opened their way through the Balkans, they were also able to equip themselves exploiting the weaponry accumulated in the fabricate of Marcianapolis and Adrianopolis. It could be conjectural but shutting down the central implants for production probably stressed too much the production of military equipment, led to the shortage of equipment highlighted, and probably exaggerated, by Vegetius.

If the Empire experienced some difficulties in equipping the army during the 5th century AD, it is possible that Vegetius intended to propose a military reform inspired by the glorious past. Exaggerating the differences between the past and the present, Vegetius described the legions of the High Empire as completely auto-sufficient, perfectly capable to produce their own equipment without any external helps. Vegetius' impressive statement seems to be an ideologically motivated exaggeration, probably intended to argue in favour of a radical reform of military logistics.

The *fabricae*-system as it is known by literary and archaeological evidence will be discussed in the forthcoming chapters, for the moment it is noteworthy to highlight that despite military workshops surely existed inside the *castra*, the witness of Vegetius should be not accepted as the proof that High Empire legion were completely auto sufficient in matter of

²³³ Charles 2003 pp. 131-135.

²³⁴ James 1988 pp. 257-331; Opole 2009 pp. 49-64.

²³⁵ Notit. Dign. Occ. 9,16-39, Or. 11,18-39.

production and distribution of equipment, nor that the *fabricae* necessarily played a leading role in the process.

There is one more difficulty that should be taken into account: the transition from a hypothetic system based on local military production to a completely different logistic organization centred on state-run workshops for mass production is not completely clear. Theoretically, such a shifting should have taken centuries and it was probably a long and progressive process.

Oldenstein had therefore proposed a general scheme to account this evolution. At a first stage, right after the conquest and occupation of a new province, the mass production of military equipment was still impossible due to the absence of infrastructures and provincial administration. Occupation armies were therefore supplied by the Mediterranean regions, where a network of civilian workshops and dealers assured a more or less constant flow of military equipment to the troops in the newly conquered region. Progressively, each province entered in what could be called the second stage of the scheme: the development of provincial administration and infrastructures allows the army to exploit local resources, becoming increasingly auto-sufficient. The *fabricae* built inside the camps and the workshops active in *vici* and *canabae* were able to provide the majority of the equipment, but civil productions and merchants still played an important role during all the 1st century AD. Noteworthy, Bishop argues that at this stage the army is already completely self-sufficient. According to Oldenstein, the progressive shifting of legions and military troops in frontier regions represented a precondition for the creation of heavily military areas at the border of the empire. In this specific social and economical context, the production of military equipment started to be concentrated in the frontier provinces, where the armed forces were amassed. In this third scenario, shop dealers and artisans provide pieces of complements, like brooches or scabbards, but the core of defensive and offensive weaponry was produced in the camps *fabricae*. The third phase lasted until the 4th century AD when the new system of central workshops for mass production became active. Local productions and military workshops were still active, but they played a minor role then before²³⁶.

Despite Oldenstein never claimed to have provided a universally-valid scheme, his theory provides a useful paradigm for the analysis. However, the model relies heavily on the idea that every camp should have had a workshop at a certain moment: archaeological evidence has proven that workshops were active in some camps, but we lack information from many

²³⁶ Oldenstein 1985 pp. 82-94.

other military bases. Archaeological excavations should have missed the spot of a workshop in many cases, or no traces of metallurgical activities have remained visible nowadays: there could be multiple reasons to explain this absence, but the model lays his foundations in what appears to be an instable ground.

Furthermore, two more difficulties can be detected. It is not clear why the Romans adopted the new system during the 4th century AD. Self-sufficient and independent workshops did not burden imperial administration from the point of view of organization and resource management. The system was apparently cost-effective and low-maintenance. It is hard to understand why the imperial establishment adopted a new and complex system in a period of political and military struggle.

Centralising the production of weapons and armours in military workshops granted a certain degree of control over arm-proliferation, preventing and contrasting insurgencies and rebellions. Quality of the equipment could have been assured in the same way, assuming that the army had all the reasons to produce the best weaponry possible, but crafting elaborated piece of equipment, such as swords for instance, requires remarkable skills. It is certainly possible that the army massively recruited skilled workmen but deploying such a highly trained labour-force on the battlefield appears to be an un-motivated risk. As it will be shown in the forthcoming paragraphs, a division of labour existed in military workshops, with more skilled artisans helped by untrained workers, and this organization could have mitigated the problem. Military *fabricae* were in any case burdened with other tasks besides the production of military equipment and even accounting that the need of military equipment probably knew some fluctuation, with obvious peaks during a war and a relatively low demand in peacetime, the problem of limited workforce available should be considered.

2.3 - Aspects of Roman military logistics during the 1st century AD.

Arisen from the ashes of the last Republican civil war, the Roman army at the time of Augustus was the heir of Caesar's, Pompey's and Antonius' army. Equipment, organization and tactical approach derived directly from the past as well as the overall logistics organization. Legions of the Republic, and particularly the legions recruited for the Civil War, were not intended to last and be maintained in service: the provision system should have been

extemporary and costly because it relied on the exploitation of local resources, by pillaging or thanks to the help of the allies, and even on the free market²³⁷.

The disband of many of the legions that fought the Civil War²³⁸ was necessary probably both for disarming potential enemies and for reducing the cost of a gigantic and extremely expensive military apparatus.

On the short term, the disband of so many soldiers should have granted an immense amount of spare equipment that was stored and re-used for a long time: a sword from Rheingönheim was crafted during the Augustan age but it has been found in a context dated to 70 AD²³⁹. It is possible that the old equipment has been later given to the auxiliary soldiers.

Weapons and armours require maintenance and reparations also during peacetime due to corrosion and usage during training and during low intensity conflicts, for example in confronting bandits and raiders, but the overall the need for equipment should have been relatively low outside major conflicts.

However, in a case of prolonged and intense state of warfare the logistics system stressed the logistics system that was evidently unable to produce and provide everything the army needed.

The case of Germanicus' campaign over Rhine is particularly striking. After the disaster at Teutoburg Forest, Tiberius was put in charge of the operations along the frontiers with the Germanic world in cooperation with his nephew, Germanicus²⁴⁰.

In the aftermath of the *clades Variana*, imperial forces held a defensive stance but soon they started to adopt a more aggressive approach.

The first campaign of Germanicus stroke a strong blow to the allies of Arminius, forcing Segeste to renovate the alliance with the empire and capturing Arminius' wife, and pushing the geopolitical situation once again in a state of alarm²⁴¹. Arminius immediately started to call the German peoples to arms and Germanicus reacted advancing into the enemies' native land²⁴². The Roman army passed through the lands of the Bructeri and pillaged the region of the Frisians before arriving to Kalkriese, where Varus and his three legions were slaughtered²⁴³. Arminius had already gathered his forces at the time and engaged Germanicus in a pitched battle with an

²³⁷ Coulston 1998 pp. 168-170 in particular poses a particular focus on urban-based production and extemporary solutions.

²³⁸ Syme 2014 pp. 336-343. See also Syme 1933 pp. 14-33 for an account of legions disbanded after the 27 BC.

²³⁹ Bishop – Coulston 2003 p. 192.

²⁴⁰ Dio 53, 28,5.

²⁴¹ Tac. *Ann.* 1, 57.

²⁴² Tac. *Ann.* 1,59.

²⁴³ Tac. *Ann.* 1,60.

unclear result²⁴⁴. Roman forces fought bravely, but the detachment led by Caecina, that has been previously sent against the Bructeri, was caught isolated and attacked by the Germanic warriors²⁴⁵. Caecina forced his way through the block but, in doing so, he lost the baggage train. Noteworthy, Tacitus offers an insight of what legions brought during campaigns and marches: soldiers lost working tools, tents and even bandages and medications when the carriages were stuck in the mud²⁴⁶. Furthermore, two legions, led by Vitellius, were sent overland in Gallia to avoid overburden the fleet but a sea storm overflowed the land, making impossible for the soldiers to advance further, and a lot of equipment was lost because of that²⁴⁷. The legions were subsequently rescued by the fleet, but the loss of equipment represented evidently a huge economic loss for Rome because Iberia, Gallia and Italia offered what they could to restore full capabilities of the imperial army: horses from Gallia, gold from the Italian community and iron from Spain²⁴⁸.

The valour of Celtic knights was well known in antiquity. As it has been already shown in the previous paragraph, Caesar massively used Gallic cavalry in his campaign, and many Gallic aristocrats fought as cavalymen for Rome during the last decades of the Republic. Warriors from Gallia, Britannia and Iberia formed the majority of Roman cavalry forces of Rome at least until the Flavian age, but their influence on cavalry tactics and even equipment lasted until the late antiquity²⁴⁹. Arrianus, who dedicated a large part of his *Taktika* to the Roman art of cavalry, admitted that a consistent part of the vocabulary connected with the fight on horseback²⁵⁰. Together with a peculiar fighting style, the “Celtic technique”, Roman borrowed from the Gauls also elements of knights’ equipment such as the *lancea*, the *sagum* and the *parma* since the Republican age²⁵¹. Spanish iron was not less famous than horses from Gaul. The revered gladius hispaniensis is obviously the most renowned product of Iberian metallurgic art, but the high quality of the Spanish steel was also renowned: Pliny the Elder highly regarded the metallurgic production of Biblis and Turiassus, albeit he noted that such a high quality was

²⁴⁴ Tac. *Ann.* 1,63.

²⁴⁵ Tac. *Ann.* 1, 63-64.

²⁴⁶ Tac. *Ann.* 1,65.

²⁴⁷ Tac. *Ann.* 1,70.

²⁴⁸ Tac. *Ann.* 1,81.

²⁴⁹ Strabo 4,4,2, Caesar had already massively employed Gallic cavalry in Gauls and later also during the Civil War: Caes. *Bell. Gall.* 1,42,5 and *Bell. Afr.* 6,3 for instance. Cf. also Plut. *Crass.* 25, 7-8; Gauls, Iberians and Britons provided the vast majority of the Roman cavalry until the Flavian Age: Cheeseman 1914, pp. 57-64; Saddington 1982 pp. 5-14, 137-160; Goldsworthy 1996 pp. 68-73

²⁵⁰ Arr. *Takt.* 37,4; 42,4. Tacitus adds in a later passage that the continuous demand of horses exhausted the Gauls: Tacitus 2,5

²⁵¹ Kempf 1901 pp. 385-386. See also “drungus” in Rance 2004 pp. 96-130.

due to the purity of local water sources because there were no mines in the surrounding areas²⁵².

Germanicus accepted the gifts from Iberia and Gallia, but he refused the “gold” offered by the rich Italian communities and this refusal could have been political motivated²⁵³.

Tacitus is quite clear in presenting Germanicus as the only one who could potentially challenge the *imperium* of Tiberius²⁵⁴. The emperor feared Germanicus control and influence over the eight legions deployed in Germania, a powerful army whose command was granted to Drusus’s son by Augustus himself²⁵⁵. After all, Germanicus was the only member of the imperial family powerful enough, thanks to his support among the people and the soldiers, to convincingly advance a claim to the throne.

Tacitus’ suspects found a confirmation when a mutiny broke out among the soldiers in Germany. As Williams pointed out, despite the similarities it existed a deep difference between the revolt that Germanicus faced in Germany and what happened in Pannonia²⁵⁶.

Soldiers of the Pannonian army lamented the harsh conditions of the military service but they soon understood that there was no chance to improve their situation²⁵⁷. Iunius Blaesus, the commander who immediately faced the mutiny and tried to manage soldiers’ request in a diplomatic way²⁵⁸, and subsequently Drusus, sent by Augustus to deal with the problem, pointed out that a rebellion was not in the interest of the soldiers themselves: payments and logistic support were controlled by the emperor and a mutinous army would have been isolated, attacked by the other legions and cut out from provisions²⁵⁹.

The situation in Germany was however much different and much more dangerous for Tiberius. Germanicus was indeed a suitable candidate for the imperial throne, and the legions openly aimed to put their leader at the head of the empire: in case of victory, soldiers could expect substantial gain and privileges. A civil war appeared therefore a worthy risk.

The mutinies in Pannonia and Germania provide a context in which the behaviour of Germanicus acquires a more precise meaning. Among the complaints risen by the soldiers there are also the expenditures for the equipment and for weapons in particular: *denis in diem assibus*

²⁵² Pliny Elder *N.H.* 39, 41. Noteworthy, the particularly good quality of iron products from Spain and from Comum, in Italy, is attributed to non-specified quality of the water used for tempering the iron bars.

²⁵³ Tac. *Ann.* 1,81.

²⁵⁴ The figure of Germanicus himself in Tacitus’ work is however a complex one. See Williams 2009 pp. 117-130 for an account. See also Syme 1958 vol. 1 pp. 420-434.

²⁵⁵ Tac. *Ann.* 1,3,5.

²⁵⁶ Williams 1997 pp. 47-61.

²⁵⁷ Tac. *Ann.* 1,16- 1,30,.

²⁵⁸ Tac. *Ann.* 1,18-19.

²⁵⁹ Tac. *Ann.* 1,24. The problem of army dependence on imperial authority occupies a special place in Tac. *Ann.* 1,28.

*animam et corpus aestimari; hinc vestem arma tentoria, hinc saevitiam centurionum et vacationes munerum redini*²⁶⁰.

Apparently, the state did not directly provide weapons and armours to the soldiers, but they were required to buy somehow all they need to survive and to fight for Rome. The system probably took the form of deductions from pay: it is known that each troop had a common deposit in which soldiers were required to leave some money to be probably used in cases like this²⁶¹. This information is useful in many respects. Firstly, it attests the existence of a sort of market in which the army bought what soldiers need. It is however unlikely that the market was completely free, in particular for what concerns the most vital pieces of equipment.

Rome obviously imposed tributes over occupied territories and peoples, and the army was able to exploit local resources: Tacitus informs us that the Frisian had to pay a tribute in the form of raw skins sent to the imperial army²⁶², skins later reused to craft tents, shoes, shield covers as well as many other pieces of equipment²⁶³.

Germanicus had therefore exploited the resources offered by the western provinces to rearm his legions accordingly to what appears to be a normal and consolidated practice at the time. His generous refusal of gold, however, points out in another direction. Offering himself to pay soldiers' equipment, Germanicus confirmed to his men to being able to provide to their own need even in the worst scenario, and at the same time he spared them to replace the lost equipment with their own pay. Drusus' son was popular also in Italy, where many openly hoped that he could restore the Republic²⁶⁴, and he could have tried therefore to win the support of Italian communities by saving their money. From a certain point of view, Germanicus' behave appears to be openly aggressive and he looks possible that he was preparing the ground to advance his claim to the throne.

Tacitus' witness is however of high value for the analysis of military logistics under the reign of Augustus. The system was apparently still based on civil production, as already argued by Oldenstein, and the provincial world heavily participated in the organization.

It could be interesting to signal the power and the importance that the *praefecti fabrum* still held at the beginning of the Empire.

²⁶⁰ Tac. *Ann.* 1,17,4.

²⁶¹ MacMullen 1960 p. 24; Robinson 1975 pp. 9 and ff.; Bishop and Coulston 2003 pp. 262-263; Coulston 1998 p. 171.

²⁶² Tac. *Ann.* 4,72.

²⁶³ See also Driel-Murray 1985 pp. 43-81.

²⁶⁴ Tac. *Ann.* 1,7,6-7; 1,33,2.

The figure of *praefectus fabrum* has a Republican origin but, despite the various attempts of the modern scholarship, available sources do not allow to precisely define the official limits of his competences.

The charge should be put in connection with the *centuriae* of carpenters and blacksmiths originally attached to the army defined by the Servian reform: the *praefectus fabrum* could have originally been an assistant, a sort of *aide de camp*, of the commander, namely the *consul* or the *praetor* who was leading the army²⁶⁵. *Praefectus fabrum* development is not easy to follow across centuries, the charge remained somehow un-official: the *praefectus fabrum* did not hold the *imperium*, but he acted in behalf of a Roman officer who had it. Apparently, his duties were not specific and once appointed the *praefectus* was charged of various tasks²⁶⁶.

The *praefecti* was therefore chosen among the provincial élite, members of local and regional aristocracy who knew well how to operate in a specific context.

Dobson noted that in many cases the *praefectura fabrum* was held by men with solid military careers. He concluded therefore that the *praefectura* should be considered a military office²⁶⁷.

The nature of the *praefectura fabrum* seems however to have been much more complex, since in many other cases the office had mostly a municipal dimension. It has been interpreted also that the *praefectus fabrum* was in command, somehow, of the *collegia fabrum*, and in this respect he commanded the firefighter brigade²⁶⁸. More precisely, the *praefectus fabrum* was no more than an adjutant of a military or a civil officer and his background varied accordingly to the task he was charged of. Military logistics had been for sure a possible task for a *praefectus fabrum* at least during the Republican age: as argued by Cafaro²⁶⁹, the suspicious reference to the *praefectus fabrum* as the commander of the legionary contingent of technicians and blacksmiths made by Vegetius could be interpreted as an information that the author of the *Epitoma Rei Militaris* read in a much older source. Probably, Vegetius made an anachronistic reconstruction using authors from the Mid or Late Republic together with information on the Early Empire legions.

²⁶⁵ Cerva 2000 pp. 177-196 for a *status quaestionis* on the topic. See also the early studies of Bloch 1903 and 1905, and Mauer 1887.

²⁶⁶ Sablayrolles 1984 pp. 246-247 confirm the dynamic nature of the *praefectus fabrum* through the analysis of the epigraphic corpus from Gallia Narbonensis.

²⁶⁷ Dobson 1965 pp. 61-84.

²⁶⁸ Labrousse 1968 pp. 498-499.

²⁶⁹ Cafaro 2019 pp. 117-138.

If the military logistics of the Early Empire was presumably the heir of logistics of the time of the Civil Wars, it could be argued that the Republican logistic system remained in place at least for the first decades of the Principate.

Germanicus was therefore in contact with the provincial élites that, perhaps through the system of *praefectus fabri*, were called to provide what the army need. *Germanicus* is described in the *Annals* as a competent and prudent commander, and the good relations he had with the army and his lieutenants clearly emerge from Tacitus' page. It can be further signalled that Germanicus proceeded in doing a *census* of the Galliae while preparing also a fleet for future operations²⁷⁰: evidently, a good knowledge of the region, of its inhabitants and resources was pivotal for resource management and for the organization of military logistics.

It is however noteworthy to highlight the persistency of what could be defined a Republican approach to the organization of supply system. After all, Roman strategic culture progressively developed from the original horizon of a "city-state" and it is logical to presume that the Romans kept traces of the original logistic system for a long time.

If at the beginning of the Roman history was the *Urbs* itself the main logistics base for the army, in a period in which workshops and artisans were active in the city and produced all the equipment needed, it appears therefore perfectly natural that the function originally played by Rome was inherited by other urban centres.

Tacitus again informs us that arms and weapons were secretly produced at Augustodunum when the revolt led by Florus and Sacrovir burst out:

"Apud Aeduos maior moles exorta, quanto civitas opulentior et comprimendi procul praesidium. Augustodunum, caput gentis, armatis cohortibus Sacrovir occupaverat, <ut> nobilissimam Galliarum subolem, liberalibus studiis ibi operatam, et eo pignore parentes propinquosque eorum adiungeret; simul arma occulte fabricate iunvetuti dispersit. Quadraginta milia fuere, quinta sui parte legionaries armis, ceteri cum venabulis et cultris quaeque alia venantibus tela sunt. Adduntur e servitiis gladiaturae destinati, quibus more gentico continuum ferri tegimen: cruppellarios vocant, inferendis ictibus inhabiles, accipiendis impetrabiles. Auebantur eae copiae vicinarum civitatum ut nondum aperta consension, ita viritim propmptis studiis, et certamine ducum Romanorum, quos inter ambigebatur utroque bellum sibi poscente. Mox Varro Invalidus senecta viginti Silio concessit²⁷¹".

²⁷⁰ Tac. *Ann.* 2,6.

²⁷¹ Tac. *Ann.* 3,43.

“So ended the rising as far as the Treviri were concerned. Among the Aedui trouble came in the graver form to be expected from the superior wealth of the community and the remoteness of the suppressing force.¹ The tribal capital, Augustodunum,² had been seized by armed cohorts of Sacrovir, whose intention was to enlist those cadets of the great Gallic families who were receiving a liberal education at the city-schools, and to use them as pledges for the adhesion of their parents and relatives: simultaneously he distributed weapons, secretly manufactured, among the younger men. His followers amounted to forty thousand; one-fifth armed on the legionary model; the rest with boar-spears, hangers, and other implements of the hunting-field. To these he added a contingent of slaves, destined for the gladiatorial ring and encased in the continuous shell of iron usual in the country:³ the so-called “cruppellarians”—who, if too weighty to inflict wounds, are impregnable against receiving them. These forces were steadily increased: the neighbouring districts had not as yet openly committed themselves, but private enthusiasm ran high, and relations were strained between the Roman generals, then at issue over the conduct of the campaign, which was claimed by each as his own prerogative. Finally, Varro, now old and weakly, withdrew in favour of Silius, who was still in the prime of life²⁷²”.

The quote is surprisingly useful for the present topic. While the uprising was elsewhere quickly put down, the rich people of Aedui proved to be a much more dangerous threat for the imperial order. Sacrovir occupied the city with some troops but the Gauls had evidently started war preparation much time before. The city evidently hosted an unusual concentration of artisans and workshops because eight thousand young men were fully equipped in a Roman fashion, that should mean with heavy armours, shields and swords. Tacitus is the only source for the Gallic rebellion of the AD 21 and judging on the basis of his account the uprising had been not planned for a long time: many tribes and peoples proved to be unprepared for the challenge and many centres around Augustodunum hesitated too much to join the revolt. Tacitus did not mention any arsenal in the Aedui's capital city, even if it looks logical to presume that military equipment was stored in place, and therefore it should be argued that weapons and armours were crafted during a very short period of time.

Furthermore, Tacitus does not say that blacksmiths and artisans were secretly gathered in the city, he just states that weapons were secretly crafted and distributed by Sacrovir as soon as he occupied the city. It looks like that a centre of production had been already put in place at the time. Sacrovir was indeed amongst the noblest of the Aedui, fact that easily explains why he

²⁷² English translation by Moore - Jackson 1931.

sought support among this people, but the presence of a logistic centre that could sustain the uprising could have been a decisive factor for choosing Augustodunum as one of the propulsive bases of the revolt.

Gallic élites revitalized their role and their position in the aftermath of the Caesarian conquest by participating in the Roman power. Nobles and aristocrats of Gallia soon started raising warriors among their people and commanded their fellows as officers of the Roman army, providing in particular cavalrymen to sustain legions on the battlefield. As Drinkwater²⁷³ has already argued, they soon started to be involved in the economic life of the province and in the imperial administration: exploiting their richness, their power and their prestige among local communities, the noblest among the Gauls were the most obvious local agents for the imperial administration. The figure of the *praefectus fabrum* worked as the institutional link between the highest level of imperial military and provincial command and the Gallic society. Grenier²⁷⁴ has considered C. Iulius Rufus, of Santonian origin, as Germanicus' assistant during the campaigns across the Rhine, and Drinkwater²⁷⁵ has proposed a similar identification for C. Iulius Victor, who probably exploited the office to boost his military career. I wonder if Tacitus makes a reference to these powerful and influential exponents of the Gallic élites, and not only to military officers, when mentions the care the Germanicus, considered to be of impetuous character, put in searching the advice of his counsellors.

Thanks to the privileged relation with Rome, Aedui's capital could have been therefore a centre that worked for the army: weapons and armours were perhaps produced in the city and from there distributed among the troops. This could explain the wealth of the city itself and how a single city could have handled such a massive production of military equipment.

Centring logistic activities and productions in urban settlements was after all in line with the military traditions of a strategic culture developed from a city state.

Another possible centre for the mass production has been hypothesized in Cologne²⁷⁶ while archaeological many traces of metallurgic production have been identified at the Magdalensberg, where a workshop, or a system of workshops, for the mass production was active under Augustus and Tiberius.

The case of Magdalensberg is particularly striking. The site was renowned for his metallurgical activities even before the Roman conquest. The site was the seat of power of Norican kings

²⁷³ Drinkwater 1978 pp. 817-850.

²⁷⁴ Grenier 1937 p. 88

²⁷⁵ Drinkwater 1978 p. 849

²⁷⁶ Riedel 1987 p. 43 cf. also Tac. *Hist.* 4,12,3.

and, when the empire occupied the kingdom, the Romans inherited the iron mines that were previously property of the kings. It is possible that the site hosted some facilities for mass production of military equipment. Only a workshop that worked copper alloy to produce belt buckles and scabbards has been archeologically identified. The production stopped around the mid of the first century AD²⁷⁷.

Continuity defines the case of Augustodunum also. We do not possess, as far as I know, any information to presume that Aedui's capital had been a huge centre of metallurgic production before the Roman time, but the city hosted a *fabrica* during the late antiquity²⁷⁸. Evidently, whatever organization existed during Tiberius reign progressively evolve until becoming a state-run workshop for massive production during the last century of the empire. Inscriptions on weapons and armours confirm the importance of civil workshops for military provisions. Pieces of Roman military equipment sometimes bear the name and the unit of the possessor, but also few cases are known in which stamps record who craft the object.

Scabbards for Mainz-type gladii from Vindonissa, with the stamp "*C. Coelius Venust(us) Lugud(uno)*"²⁷⁹, and from Strasbourg, "*Q. Nonienus Pudens ad Aram f(ecit)*"²⁸⁰, attest not only the existence of civil workshops but give also some information about the circulation of the military equipment at the time. In particular, "ad Aram" could indicate Strasbourg itself or it could refer to Cologne, where a workshop is known for the time of Vespasian, or Lugdunum again, raising the possibility that Lyon productive activities was massive enough to commercialise products relatively far²⁸¹.

From Oberammergau, a niello-decorated hilt of a dagger bears "*C. Antonius fecit*"²⁸² as workshop stamp, while on the guard of a Mainz-type gladius from Rheingönheim, property of a certain Sabinus, is impressed the stamp "*L. Valerius fec(it)*"²⁸³ and the indication of the weight of silver used for the guard itself and possibly also for the scabbard. Both workshops are unknown, but it has been argued that the niello-decorated dagger could have been imported from the Gallia Cisalpina or from Italy²⁸⁴.

Decorated hilts and fine scabbards can be perhaps considered as luxury equipment, objects of status that only officers could display on the battle, but a workshop stamp on Mainz-

²⁷⁷ See Dolenz 1998 for an account.

²⁷⁸ Not. Dign. Occ. 33-34.

²⁷⁹ Ettliger-Hartmann 1985 pp. 5-46.

²⁸⁰ CIL 13, 10027, 197;

²⁸¹ Ettliger-Hartmann 1985 p. 38.

²⁸² Ulbert 1971 pp. 44-49.

²⁸³ Ulbert 1971 pp. 47-48.

²⁸⁴ Ulbert 1971, p. 44; Scott 1985, 175-179.

type blade from Bonn apparently confirms that civil productions provided also functional equipment to the army²⁸⁵.

As Nicolay²⁸⁶ has however pointed out, the resulting picture could be distorted considering the mobility of imperial command-staff: officers were transferred from one unit to another, especially in case of promotion, or were sent for particular missions to the provinces of the empire. Some of the weapons could have been personal property of these officers and therefore they reflect the taste and the wealth of the military élite.

Military logistics at the time of Augustus and Tiberius reflects the ongoing character of the imperial organization at its beginning. The abrupt change into a permanent organization of the Roman army imposed surely a progressive development of the provision system, that increasingly started operating on a provincial base with a strong involvement of the civil society. A town-centred logistics system reflects however the strategic culture of the Romans, and, from a wider point of view, it functionally exploited local resources and regional traditions to sustain the army.

According to Oldenstein, however, the system slowly changed in something more peripheral: the supposed centrifugal evolution determined a shift to the internal regions to the frontiers, where heavily militarized areas progressively became auto-sufficient in producing their own equipment.

²⁸⁵ CIL 13, 10028, 9; see also MacMullen 1960, 37-38 (nr. 69);

²⁸⁶ Nicolay 2007 pp. 130-131.

3 - Fell deeds awake.

The end of the Flavian dynasty and the choice to appoint Nerva as new emperor traditionally marks the begin of a new period of the Imperial history defined by the recurring of the adoption to manage the imperial successor.

However, the supposed rupture has more a historiographical value than a historical one.

Trajan was forced to deal with a political dossier that he had inherited after the death of Domitian. The last of the Flavian, as clearly stated by Dio²⁸⁷, faced many wars in the western part of the Roman dominion but not always because of his will: the aggressive behaviour of the German tribes forced the empire to react and to be engaged in a long and difficult war, while the progressive arrival of the Sarmatians in the area, with the recent settlement of the Rhoxolans in the eastern plains, troubled the Danubian provinces and exposed the Balkan provinces to the attack of the Dacians and the Iazyges²⁸⁸.

Somehow, the military elements of the third century crisis have been apparently anticipated by the wars fought under the emperors even before the Severan dynasty: if it's clearly not possible to speak of crisis already, it looks like the historical context in which the empire existed was starting to change and to develop at an increased speed.

The purpose of this chapter is not however to present an historical account for the 2nd and the 3rd century AD but to understand if and how the military logistics changed to adapt to the new situation.

From a certain point of view, many aspects of high imperial military organizations reached their acme during the 2nd century AD. According to the scheme proposed by Oldenstein, at this stage the *fabricae* should have been a very well-established institution of the Roman army and they should have worked at full capability.

At the same time, if the political situation slowly changed inside and outside the frontiers of the Roman empire, it should be theoretically presumed that the army developed accordingly.

The seeds of the slow swift from a more de-centralised logistical system to an organization that relied more on central mass production should have been already present at this stage.

²⁸⁷ Dio 67, 4-7; 67, 10-12.

²⁸⁸ About the Sarmatian movement in western Europe see in general Sulimirski 1970. See also Batty 1994 pp. 88-111 regarding Ovid's description of Sarmatian movements during the Augustan age and the Roman perspective over the dynamic situation north the Danube. See also Lica 2000 pp. 121-166 regarding the Imperial policy in the area during the 1st century AD and the solution attempted to face the difficult situation in the area.

The present discussion aims therefore to highlight the steps of this development analysing if and how the Roman army recognised and adapted to the upcoming strategic challenge. In order to delineate the various aspects of the inquiry, a thematic approach will be preferred instead of a chronological discussion.

3.1 - Experiments with centrally planned logistics?

Military workshops were still a valuable logistical asset of the Roman army at the beginning of the 2nd century AD, but available sources regarding their functions and capability remain generally scarce.

The case *De Munitiombus Castrorum*, likely written during the 2nd century AD, has been discussed already in the previous chapter. The treaty proposes a theoretical or normative description of a military camp, and the *fabrica* appears as a common feature for Roman *castra* at the time. No information is given regarding the dimensions of the workshop-structure, its estimated capabilities nor the purpose it clearly served. The mere existence of military *fabricae* inside *castra* does not necessarily indicate that the army was able to produce a significant part of the equipment needed by itself.

Besides the account offered by the *De Munitiombus Castrorum*, literary and sub-literary sources offer surprisingly few information for 2nd century AD. A papyrus nowadays conserved in Berlin records the activity of the *fabrica* of the *legio II Traiana Fortis* in Egypt: in one day, roughly 100 men have been sent to the workshop²⁸⁹. The document is vaguely dated to the 2nd century AD but it bears no precise indication for the year. It is therefore impossible to link the *fabrica* activity to a particular moment of the Roman history.

It's noteworthy however to highlight the obvious comparison with Vindolanda tablets²⁹⁰. The auxiliary units of the Batavians that garrisoned the fort were much smaller than the legion deployed in activity, but a three times higher number of men were allocated to the workshop²⁹¹.

This difference cannot be easily explained. The fluctuation seems to indicate that if *fabricae* had a permanent workforce, this should have been relatively small and it was augmented from time to time according to the need of the time. It is impossible, however, to establish if one of the two mentioned documents recorded a normal situation or if in both cases extraordinary circumstances required a surprisingly strong contingent to be sent to the workshop.

²⁸⁹ Pap. Berlin inv. 6765. Published by Bruckner – Marichal 1979 pp. 6-7.

²⁹⁰ Tab. Vind. 1 and 3 mention *fabrica* activities.

²⁹¹ Tab. Vind. 1 mentions 343 men sent to the workshop.

As it will be proposed further, the Vindolanda tablet could have enlisted also non-military personnel²⁹² and it is therefore possible that the auxiliary cohorts actually employed a much smaller number of soldiers in one day.

One more explanation, as far as I know, have not being taken in consideration. Britannia was a newer province in comparison of Egypt, military operations interested the area for a large part of the second half of the 1st century AD and the area did not present the same urban texture that the Egypt, seat of ancient empire and once a florid and highly developed Hellenistic kingdom, had at the time. I judge therefore possible that the legion could have more extensively exploit civil connections in the area and was less dependent on auto-production than the relatively more isolated unit in Britannia.

The Berlin papyrus mentions also objects completely fabricated and objects simply “ready”, possibly still not assembled²⁹³. The legionary workshop of the *II Traiana Fortis* could have worked with partially crafted objects, assembling the products locally. The working organization, if that was the case, seems not only perfectly logical, but found also an archaeological confirmation. Excavated military workshops feature a modular division of the workspace and a certain degree of specialisation is known thanks to epigraphic documents: it is therefore possible that each *fabrica* had a sort of working chain put in place.

As in the previous century, literary sources appear generally uninterested in the topic and valuable information are particularly scarce. The loss of a great part of historiographic literature of the Trajanic age, comprising first-hand account of the Dacian wars, has deprived modern scholarship of key documents for the reconstruction of these aspects of Roman logistics, leaving the picture fragmented and unclear.

In the absence of a large database, it is impossible to appreciate the differences existing between the different areas of the empire. While military workshops are archaeological known in the western provinces, Dio confirms that at least in the eastern part of the empire the civil manufactures still played a very important role.

In preparing the Bar-Kochba insurrection under Hadrian, the Jewish purposely crafted military equipment for the Imperial army of the lowest quality possible to assure an advantage in the upcoming conflict²⁹⁴. Evidently, civilians provided logistical support to the arm producing at least weapons and armours for the soldiers.

²⁹² Tab. Vind. 3.

²⁹³ A distinction is made between “*fabricatus*” (1st column, 11 and 12) and “*peractus*” (1st column 14; 2nd column 14).

²⁹⁴ Dio 69, 12,2.

The whole area was a long-time part of the Empire, and the Roman army was a strong and well-established institution in every eastern province and should have reached at that point a stable organization: the involvement of the civil world in military was not an *ad hoc* or temporary solution, but an element of a complex economical pattern of interrelations between the Imperial army and the provincial world.

The more progressed urbanization of the Eastern part of the Empire and a rooted Hellenistic tradition could have more easily allowed a complex logistical organization, while it has been argued that the relatively more primitive conditions of European provinces had forced the imperial establishment to rely more on army self-production.

More information can be deduced indirectly from different sources and different kind of accounts, more or less implicitly connected with the present topic. What is noteworthy to highlight is an increasing effort in centralising military logistics from the age of Trajan onwards. From the beginning 2nd century AD down to the 3rd century AD, sources seem to indicate that Roman commanders started employing some figure to manage the provision system during a military campaign.

The first known cases are dated to the mid of the 1st century AD, when the very first attempts to entrust military logistics to an adjutant of the commander in chief are known in the sources. Earlier examples concentrate in particular during Corbulo's campaign in Armenia. The earlier attestation of the practice that is survived until nowadays is in Tacitus' Annals: Corbulo, engaged in the difficult campaign in Armenia, charged an eques, whose name was Tiberius Iulius Alexander, to manage the logistics for his army in quality of "*ministrum belli*"²⁹⁵.

Iulius Alexander was one of the hostages sent to Tiridates to negotiate a treat, and it can be argued that he was therefore a man of certain importance even if it's role and title are unclear for contemporary historiography²⁹⁶.

It is not clear if the *ministrum belli* or a comparable figure represented an innovation of the late Julio-Claudian dynasty, but it could have been a sort of innovation around the mid of the 1st century AD.

Dispensatores, slaves entrusted with finances management²⁹⁷, are known in Elder Pliny's for having took in charge logistics during the same eastern campaigns against Tiridates²⁹⁸: the *ministrum belli* could have been assisted in his duty by one or more slaves.

²⁹⁵ Tac. Ann. 15,28.

²⁹⁶ Tac. Ann. 15,28, Iulius Alexander was sent together with Annus Vinicianus.

²⁹⁷ See CIL VI, 5197 = ILS 1514 for *dispensatores* in imperial bureaucracy.

²⁹⁸ Plin. Hist. Nat. 7,129.

Ministrum belli probably overlooked the whole logistics, while particular aspects of it were perhaps taken in charge by his adjutant.

Corbulo's campaign in Armenia was for sure a difficult one due to the geographic conditions of the war theatre. The dangerous mountainous valleys, the difficulties in organizing supplies and the prolonged state of warfare could have forced the renowned Roman general to particularly take care of the logistical aspects of the campaign.

The practice of entrusting a lieutenant of military logistics was not, however, a complete novelty: it is known that Caesar, who considered the care of logistics as a duty of a good general²⁹⁹, entrusted a negotiator, C. Fufius Cita, of the logistics management during his campaigns in Gallia³⁰⁰.

At the supreme level, the organization of the supply system and its efficiency remained ultimately under the authority of the commander in chief, but a more structured logistics organization slowly emerged probably as a consequence of development of the provincial system that allowed Imperial armies to exploit resources from a much larger basin.

In comparison to the relatively complex organization of Corbulo, the attention that Vespasian paid to the supply system in Josephus' account appears less structured and rather vague³⁰¹. The lack of precise information could reflect a more classical approach by Flavius himself, an approach in which the care for supply is considered a sign of good generalship, or could be rather interpreted as a proof that the supply system was relatively poorly structured in that moment of imperial history.

If Nero really introduced new figures for the management of military logistics, this innovation was happily received and further improved. Particularly interesting in this respect is the figure of Plotius Grypus, to whom Statius addressed a poem: "*priusquam/ te Germanicus arbiter sequenti/ annonae dedit omniunque late/ praefecit omnibus viarum*"³⁰². It is not known if he was appointed at the same time to the military logistics (*annonae*) and to the supervision of road stations, or if he held two distinct posts in separate occasions. It is not clear in which campaign Plotius Grypus managed supply and provisions, but it has been proposed that he was part of Domitianus' entourage during the unlucky war against the Sarmatians in the AD 92³⁰³.

²⁹⁹ Caes. *Bell. Gall.* 1,40,10.

³⁰⁰ Caes. *Bell. Gall.* 7,3,1. In general, Republican armies managed the logistics internally, entrusting *quaestores* and military officers of supply operations. While the role played by contractors seems to have been particularly limited, ad hoc solutions represented a normal approach to the problem: Roth 1999 pp. 250-251.

³⁰¹ Flav. Jos. *Bell. Iud.* 4,32.

³⁰² Stat. *Silv.* 4,916.

³⁰³ Adams 1979 p. 136 n. 27; Kissel 1995 pp. 271-272.

Bérard has presumed that the *annona* in this case should refer only to the personal supply of the emperor and of his staff³⁰⁴, but the term seems to have been rather applied to indicate supply and provisions for an army, not only for its commanders or for the emperor.

If the unequal titles employed at this early stage seem to indicate that the practice was still confined at the level of ad-hoc solution, but during the II century the logistics organization appears to have been more rigid and homogeneous.

Trajan had an assistant for the management of logistics in the figure of Gaius Caelius Martialis: *C(aio) Caelio C(ai) / fil(io) Ouf(entina) Martiali praef(ecto) / coh(ortis) I Raetorum quae tendit / in Raetia trib(uno) leg(ionis) XIII Gem(ina) quae / tendit in Dacia in quo tribunatu / donis militaribus donatus est / ab Imp(eratore) Caesare Nerva Traiano / Aug(usto) Germanico Dacico et copiarum / curam adiuvit secunda expedition[e] / qua universa Dacia devicta est / proc(uratori) provinc(iae) Achaiae proc(uratori) ferrari[ar(um)] / [L(ucius) Gel]lius Menander amicus³⁰⁵.*

Gaius Caelius Martialis, of the Oufetina tribe and sons of Caius, was a man with a strong military background: *praefectus* of the coh. I Raetorum in Raetia, he was promoted *tribunus* for the *XIII Gemina* legio, obtaining within the legionary ranks military awards twice. It is noteworthy to signal that “*cura copiarum*” mentioned in the inscription, a formula that refers to the organization and management of the supply chain during the second Dacian War, the expedition during which the whole kingdom of Dacia was conquered. He evidently proved his valour, and he was later appointed procurator of Achaia and later *procurator ferrarium* of an unknown province.

Wars in the Carpathian basin posed specific problems to the organization and management of army provisions: the role of the fleet for logistical assistance is known for the time, but passing through the steep mountain slopes was for sure not an easy task. No similar figures are known for the time of Hadrian and Antoninus Pius, but traces of centrally managed military logistics emerge again in connexion of the long and complex war fought under the rule of Marcus Aurelius.

Lucius Auriulus Nicomedes, a *libertus* who became an *eques* under Antoninus, was charged of the *cura copiarum* of the army led by Lucius Verus against the Parthian: *ab Imp(eratore) Antonino / [Aug(usto) et divo Vero cura copiarum exercit]us ei (...)³⁰⁶.*

³⁰⁴ Bérard 1984 pp. 261-263. See also Millar 1977 pp. 28-40 and Isaac 1992 pp. 290-291 regarding provisions for the emperor and his staff.

³⁰⁵ AE 1934, 2 from Corinth, dated to the first half of the 2nd century AD.

³⁰⁶ CIL 6, 1598= ILS 1740 from Rome.

Leading an army in the east required a certain care in organising and coordinating the supply: accessing the Euphrates' valley from the north, through Caucasus, meant to move the supply through a region of not easy access, while desert areas, passing through was a real challenge, separated the Mesopotamia from the Mediterranean basin.

It is noteworthy to highlight that, in this case, the logistical aspects of the campaign were entrusted to a man who had no military experience, nor he had ever commanded a contingent in the field. It is however plausible that Aurelius Nicomedes was not the only one to manage the complex logistical organization.

From the time of Marcus Aurelius we have two more evidences. A well-known inscription from Diana Veteranorum, in Numidia, and dated to 183-185 AD, records the career of Marcus Valerius Maximianus³⁰⁷. Born in an important family from Poetovium, in Pannonia, Valerius Maximianus underwent through a long career defined by both military and administrative posts. He started as *praefectus* of the *coh. I Thracum* before being promoted as *tribunus* of the *coh. I Hamiorum civium Romanorum*. Interestingly, he was appointed as *praepositus orae ponti polemoniani*, an office of key importance in matter of military logistics because of the control over land and sea routes exploited to move provisions towards the important Armenian frontier.

Valerius Maximianus distinguished himself in all the major wars of the period, being awarded in the conflict against the Parthians and for his behavior during the operations against Germans and Pannonians. It should be highlighted that during those operations, he was not only appointed to the management of the *annona* during the conflict, he also commanded vexillations of fleet and cavalry regiments in many occasions, possibly to defend the supply lines during the massive engagements of Marcus Aurelius' era. Proving to be a valid and trustworthy officer, Maximianus later continued his equestrian career with posts as *procurator* (Moesia Superior, Moesia Inferior, Dacia Porolissensis) until being finally adlected into the "*amplissimus ordinem*" and being entrusted with legionary commands.

He was evidently a skilled organizer and a trustworthy man: the list of posts that Valerius Maximianus had held indicates that he was not only a commander, but an officer entrusted by more delicate assignments. The striking similarity between his career and the political and military curriculum of other personalities of the time has been already highlighted, by Pflaum in particular³⁰⁸, and could be probably explained as a consequence of the difficulties

³⁰⁷ IDRE 2,445.

³⁰⁸ Pflaum 1982 pp. 48-50 no. 179. See also Devijver 1988 pp. 207-214.

experienced at the time: the plague and the prolonged state of warfare exhausted imperial resources also in terms of men, forcing the establishment to “exploit” capable and experienced men as much as it was possible, often conferring to them multiple posts at a time with ad hoc solutions.

The appointment as *praefectus orae maritimae* in the Polemonic Pontus at the time of Lucius Verus’ work is particularly noteworthy for the present topic. The area of Polemonic Pontus, once a region entrusted to king Polemus and subsequently definitely absorbed by the empire under the reign of Nero³⁰⁹, had an immense value for the Romans in because of his role as support areas for every offensive action in or through the Caucasus area. The ancient *polis* of Trapezus and its hinterland functioned in particular as a logistical platform to sustain operation down to the Euphrates’ basin when Corbulo, who first organized the area establishing a series of fortlets to secure the supply lines and placed garrisons in highly strategical points, waged war against the Parthian. The area played a major role also during the diplomatic crisis at the time of Hadrian, when Arrian’ mission in the area was apparently focused on securing the inland routes of the region. The *limes* that stretched from Trapezus through the Zigana pass to the legionary bases of Satala and Melitene was so important to have been considered the most strategical frontier in the imperial history, a true cornerstone for the control of the whole eastern part of the Empire. The area was essential to secure communications and logistical links from the Euphrates basin, that could be reached through Caucasus, and the Mediterranean core of the Roman dominion via Black Sea and Anatolian inland and coastal routes.

According to Brélaz³¹⁰, the post of *praefectus orae maritimae*, whose nature was somehow exceptional and justified by the need, granted to Maximianus a command over both naval forces and local army to secure provisions and supplies for the campaigning army.

Noteworthy, the post is strikingly similar to the one later held under Marcus Aurelius: also in this case, Maximianus commanded vessels of the Danube fleet and *vexillationes* from the Pannonian army to organize and secure the logistical links via and through the river.

Probably, Maximianus performed so well under Lucius Verus, who rewarded him with *dona militaria*, that Marcus Aurelius chose him as an expert and appointed him to a very similar task. In both campaign, however, Valerius Maximianus was not the only officer in charge of logistics.

³⁰⁹ Barrett 1978 pp. 437-478; Dio 60, 8. See also Bosworth 1976 p. 71. Cf. Suet. *Vesp.* 8,4 e Jos. *Bell. Iud.* 2,366-367 about military actions necessary to consolidate the imperial power in the region in the aftermath of Pontic kingdom dissolution.

³¹⁰ Brélaz 2005 pp. 241-242.

According to an inscription from Rome³¹¹, Lucius Aurelius Nicomedes, *libertus* of Lucius Verus, was in charge the logistics (*cura copiarum*) for the army of his master during the campaign against the Parthian. From Tarrcaus, an while an inscription from Tarracus, in Spain, mentions Tiberius Claudius Candius, the Severan general who fought and won against Clodius Albinus, as *praepositus copiarum* under the service of Marcus Aurelius during the Germanic war³¹². Remesal-Rodriguez has argued further that also Sextus Iulius Possessor was involved in military logistics at the time, but more specifically he organized the supply of oil from Africa and Baetica for the armies engaged in the Germanic wars³¹³.

Evidently, managing the logistics of such large armies was a task that required many officers to be accomplished. It is possible that the information from the 2nd century onwards has been preserved until nowadays for various and random circumstances, but the numerous references of logistical personnel under Trajan and his successors may imply that a change in military organization occurred sometimes between the end of the 1st century AD, when the first officers with logistical duties are mentioned albeit with no precise and stable definition, and the beginning of the 2nd century AD.

Perhaps, a new way of managing provincial resources developed further the organization of military logistics too. Furthermore the difficulties of the time of Marcus Aurelius and Lucius Verus must had put the Empire in a desperate need of capable men, forcing the establishment to combine posts and assignment to grant a fully operation chain of command³¹⁴.

The long and difficult wars, however, clearly required a superior logistical organization than before. A new approach to the matter slowly started emerging at the time, an approach that was destined to be adopted in the following decades.

While the locutions *cura copiarum*³¹⁵ apparently progressively declined in use, the formula *praepositus annonae*³¹⁶ became more common in the 3rd century AD or, at least, they appear more often in the epigraphic documents from the time of the Severan dynasty. Besides these terms, other formulas had been adopted³¹⁷.

³¹¹ CIL 6, 1598 = ILS 1740.

³¹² Kissel 1995 pp. 272-274; Bérard 1984 p. 308.

³¹³ Rémesal-Rodriguez 1986 pp. 100-103, again in Rémesal-Rodriguez 1991pp. 281-295.

³¹⁴ See the careers presented by Pflaum 1960-1961 *passim* and the relative remarks.

³¹⁵ AE 1911, 161 = ILS 9471 from Caria, dated early II century AD. Cf. AE 1955, 276

³¹⁶ CIL IX, 1582 = ILS 1343 from Beneventum, early III century AD: Rustius Rufinus served as *praepositus annonae* during the Parthian War 197-202 AD; CIL XI, 3104 = ILS 2765 from Falerium, early III century AD (anonymus, Germanic war); IGGR 4,12,13 = ILS 8863 from Thyatis.

³¹⁷ Eph. Epigr. 9, 1144: */p|raep(ositus) cu|ram|agens|h|orr(eorum) tempo|r|e expeditionis feliciss(imae) Britannic(ae)*. The officer could have been placed in command of South Shield base, that played a major logistical role at the time: Rickman 1971 p. 290; *Praepositus sacrae arcae* possibly read on an inscription from Sarmizegetusa: AE 1979, 506.

Interestingly, the career of *Rossius Vitulus*, known thanks to an inscription from *Bulla Regia*, registers three different posts as officer appointed to military logistics: *praepositus annonae* during the march of Severus to Rome, *procurator arcae* of an unknown campaign and *procurator annonae* during the war against *Clodius Albinus*³¹⁸.

While the term *arcae* could simply mean the financial expenditure of the army, it is not clear the differences and the hierarchical order of *praepositus*, apparently lower in *Vitulus'* inscription, and *procurator annonae*, nor if the different offices presumed different duties.

Between the 2nd and the 3rd century AD, the Empire apparently started to develop a more complex organization for the logistics of campaigning army. Epigraphic information highlights the appearing of new ranks specifically connected to the management of military supplies.

However, it remains a huge difficulty: it is not clear if the logistical operations overlooked by those officers included the production of parts of the military equipment or they were concerned only on food, fodder and water supply. *Leo the Wise*³¹⁹ attests that, at least in the very late antiquity, weapons and equipment were part of the supply.

It is still highly implausible that a large number of armours and weapons were manufactured during a campaign, since their transport was expensive and many pieces required many hours to be prepared, but disposable parts of the equipment like javelins, spears, and arrows could have been continuously produced and sent to the front to replace losses³²⁰.

The development in campaign logistics organization could have been mirrored in the introduction of a series of improvements in the management of peace-time logistics: inscriptions records a series of temporary posts, that generally lasted for a whole war, but it is possible that the imperial establishment started to adopt similar solutions to manage peace-time logistics, entrusting various officers and lieutenants, who did not have an official or specific title indicating their functions, of particular aspects. If the Romans felt the need to dispose of a more stable and better determined logistical chain of command during war time, it looks at least plausible that the same need was felt also in preparation of a war.

³¹⁸ ILAfr 455.

³¹⁹ *Leo the Wise, Strat.* 5,5.

³²⁰ Javelins and arrows could be taken back after having been thrown, but many were probably lost or broken in the field: iron points could remain stuck in enemy's shield and armours, while the wooden body were easier to broke. I add spears to the list because of the report mentioning "missing lances" from the cavalry units in Carlisle: spears should have been relatively easy to produce, at least with the right materials available, but also easy to broke or to get lost if a unit in peacetime felt the necessity to replace the missing weapons with new ones. While swords and other weapons could be repaired on the field, or at least be replaced with makeshift means, spears could have been brought to the combat zone in huge numbers. Tomlin 1988 pp. 55-63 (tablet n. 16). See also Speidel 2007 pp. 237-239 regarding the mention of "subarmales", interpreted by Tomlin as auxiliary weapons and by Speidel as shirts to be wear under the armour.

A superior control over the productive facilities should have been at the core of every attempt to establish to centrally manage this aspect of logistics.

It could be particularly interesting to highlight therefore the introduction of a new type of helmet at the beginning of Trajan's reign, apparently sometimes before the beginning of the Dacian Wars. As it has been noted before, the Imperial army had already experienced the introduction of new equipment pieces, introductions that could have been planned and implemented directly by the establishment, but the timing in the present case seems to indicate that the Roman government had already started to adopt a different approach to the topic.

The Weisenau helmet started appearing in use at the end of the 1st century AD, becoming widely adopted in a relatively short time, but in occasion of the Dacian Wars some improvements had been made to his shape: the head bowl was reinforced with to iron bars that crossed the skull protection; further protections were added to the ears and to the front, that presented a more protruding defence like a peak or a visor³²¹. Also the protection protruding over the neck were prolonged and became larger and more efficient.

All these improvements were apparently introduced to match the peculiar sword used by the Dacians and generally known as *falx*.

The Dacian weapon of choice was indeed impressive: while the shortest version was no more long than a knife, the battle sword was two handed, with no guard and a blade culminating in a recurve point³²².

Despite its name, the Dacian *falx* was not a cutting weapon: the cut of the blade was internal and not external as it should be to maximize length of the cut and improve the efficiency of the blade, as it is in modern swords like sabres and cutlasses.

The images depicted on the Column and the metopes from Adamclissi confirm that the *falx* was not used merely to cut³²³. Dacian warriors are represented while handling the blade with the hooked point aiming to the enemy: even if the Roman soldier was able to parry the blow with his shield, the hooked point could harm him penetrating the helmet.

The addition of defences on the helmet are understandable if the *falx* is considered a piercing weapon. The reinforce on the bowl were intended to safeguard the head of the soldier from any blow from the top, while the protruding frontal peak prevent the point crush on the rear of the head even if the hit was struck frontally.

³²¹ Robinson 1975 pp. 45 and ff.

³²² Rustoiu 2007 pp. 67-82; Borangic 2008 pp. 141-160.

³²³ Florescu 1965 figg. 195, 197, 1992, 15, 218a-b, 221.

The new shape was introduced therefore to help the Roman troops in their struggle against the Dacians. The improvements were introduced specifically to offer more protection against the Dacian sword, but since that kind of weapon was not in use among other nations, the improvements introduced at the time rapidly fell off use.

It is unlikely that all the soldiers were equipped with the new model helmet at the start of the war, more plausibly the equipment was rather un-homogeneous and the specimen in question represented a small part of the total, but the evidence show the emerging of a new practice. While Claudius' reforms introduced a whole new equipment without trying to solve a specific problem, the attempt to deliberately gain a concrete advantage by introducing a modification with a very limited and specific purpose highlights a new mentality.

At the present state of evidence, it is unclear if the adoption had been spontaneous, with military workshops independently try to ameliorate soldiers' equipment, or if it was somehow centrally planned. The second case seems however more plausible considering the debacle suffered by Roman legions under Domitian: it looks like the imperial establishment, now lead by an experienced officer like Trajan, had tried to find a solution to a known tactical problem. In this second case, the schematic of the new helmet could have been sent to various civil or military workshops, or the emperor could have organized some logistical base in foresight of the incoming war. This new approach appears to be much clearer, however, in the following decades, when Hadrian promoted a series of reforms in the army.

3.2 - Generalship and military equipment.

From a contemporary point of view, improving weapons and military equipment is for sure a way to assure victory in a war. The importance of technology in modern-day world not only influence the continuous research for better weapons, but it enters also in the pop-culture: the Marvel cinematic saga, in which the crafting of a new weapon defines the quest of a main characters in prevision of the battle with the ultimate villain, clearly shows that a greater threat must be faced with new and improved weapons, confirming the spread of a certain cultural habits even in the civil society.

In comparison, Roman strategic culture that defined imperial approach to warfare apparently lacked the same sensibility to the topic, but the previous chapters of the present work aimed to demonstrate that a deeper and more complex.

The reign of Hadrian represented a turning point in this process also for the exceptional insight that literary sources of the time can offer to modern historiography.

It should be taken in account the functional couple of the Imperial warfare: the emperor and his general. The commander, from the lowest level of troop officer to the commander in chief of provincial or a campaigning army, was for sure responsible for the weapons the men who was leading, but the emperor himself was always celebrated as the ultimate source of victory for the Roman army³²⁴. The functional relation between these two figures is highly interesting. As depositary of *imperium* and with a strong mandate, the Roman commander knew very well that his success on the field depended on the quality of provisions and equipment available. Few attempts, in particular at the beginning of the imperial experience, are known to have been made by generals to personalize the equipment of their armies³²⁵. Commanders, however, had to adapt to the structure of the imperial army: only the prince, supreme leader of the military forces and of the state, had enough power to promote more radical reforms in tactical and strategical approach. In other words, while the emperors did succeed in monopolising the supreme command of the army, generals progressively lost their freedom to implement tactical innovations and limited themselves to follow the orders of the *augusti* albeit conserving a certain degree of autonomy in commanding the soldiers in the field. In some respect, only the emperors maintained what appears to have been a prerogative of a commander of the past: renovating the army.

However, emperors until the time of Hadrian had implemented reforms on the organization of the army, enrolling and disbanding units and establishing a permanent and coherent structure of command. Despite archaeological evidence shows that military equipment slowly evolved during time, only Claudius seems to have planned a homogeneous restyling of weapons and armours in use but his attempt had found few witnesses among the ancient authors and his effort has been tentatively reconstructed through different sources³²⁶.

³²⁴ See Charlesworth 1943 pp. 1-10 for the complex relation between emperors' virtues and military victories. See also Mattern 1999 pp. 194-210. For the political relevance and meaning of *genius augusti* and *numen augusti* see instead Fishwick 1991 pp. 375-396.

³²⁵ Dio 57,13,1: because of Drusus was extremely cruel, the sharpest swords were called "drusian". Dio reports it as a sort of slender, it looks indeed a way to shed a negative light over Drusus, but it is possible that Drusus had indeed sponsored a new type of particularly sharp type of sword. Indeed, Suetonius reports that a governor of Britain, named Lucullus (see Conole-Jones 1983 pp. 629-633), had been executed by Domitian for having named a lance after him, an act that have been considered as foreseeing an attempt of seizing power. Drusus could have actually proposed a new type of sword to highlight his relations with the army and to show his power and legitimacy as member of the imperial family.

Contrary, Carter 2006 p. 167 has argued that the sword was intended to be used in gladiatorial combats where, contrary to the most common opinion, non-lethal weapons were often used. Drusus' passion for games is known (Tac. *Ann.* 1,76,5), and Carter has proposed to consider those "drusian swords" as lethal weapons designed for gladiatorial combats, confirming in this way the cruel and sadistic nature of Drusus himself.

³²⁶ Thomas 2004 pp. 424-452.

Hadrian, on the other side, is the only emperor of the High Empire to have been explicitly remembered for having reformed the military equipment and for having introduced new elements for the panoply of the Roman soldier³²⁷. Hadrian's age represents therefore a highly interesting moment for the topic of the present inquiry. The functional couple formed by the emperor and his commander, a couple that is generally shrouded in mystery since the relations between the emperor and his *legati* are often obscure and not examined in depth in literary sources, is mirrored by Hadrian and Arrian and deepened by the literary production of the latter.

Homme de guerre et homme de plume, Arrian was not only a skilled general of his time but also part of that cultural and political élite that gathered at the court of the emperor and that can boast to be particularly near the emperor.

Noteworthy, Arrian's mission in Cappadocia as imperial *legatus* during a particularly delicate historical period is well documented by three works that formed a meaningful unit.

Despite his fame, Arrian's early life and career are still largely unknown today³²⁸. Flavius Arrian Xenophon, as it probably was his complete name, should have started his career as a knight before being adlected in the *ordo senatoris*, albeit the details of his *militiae equestris* are lost nowadays³²⁹.

The friendship that tied Arrian and Hadrian might have started in AD 122 when Arrian was at the service of the *legatus Augusti pro praetore* of Achaia, Nigrinus, while the future emperor was elected archon by the Athenians³³⁰. Both Arrian and Hadrian frequented also the philosophical school of Epictetus³³¹. Before becoming governor of Cappadocia, Arrian was proconsul in Baetica around the AD 125³³², then probably *consul suffectus* four years later³³³, *curator operum publicorum* for the AD 130³³⁴ and the year after, finally, *legatus Augusti pro praetore* of the Cappadocia province.

Cappadocia was a province of a particularly high strategic value, and the *limes* sector that stretched from Trapezus to Samosata, headquarter of the *XVI Flavia Firma*³³⁵, through the

³²⁷ SHA *Hadr.* 10, 7

³²⁸ See Syme 1982 pp. 181-211 for a detailed reconstruction of Arrian's career.

³²⁹ Bosworth 1983 p. 266.

³³⁰ SIG³ 827 according to Plassart 1970 n. 290.

³³¹ SHA *Hadr.* 16,10.

³³² Arrian's proconsulship in Baetica has been presumed on the base of an inscription found in 1971 by Tovar (Tovar 1971 pp. and dated to 2nd century AD. However, Béltran has subsequently challenged the proposed date and argued in favour of a later dating to 3rd century AD. See Béltran Fortes 1988 pp. 91-100 and Béltran Fortes 1992 pp. 176-191 for a discussion on this topic.

³³³ CIL 15, 244 and 552 (brick-stamps Arrian et Severus), PIR² F 219.

³³⁴ CIL 3, 1132.

³³⁵ Dio LV,24,3; Ptol. 5,14,8; ILS 1142

legionary camps of Satala, originally the *castra* of the *XVI Flavia Firma* later replaced by the *XV Apollinaris*³³⁶, and of Melitene, seat of the *XII Fulminata*³³⁷, had been considered the most vital of all the imperial frontiers³³⁸. The chain of fortlets, watchtowers and military camps leaned to the road that crossed the mountains and establish a strong connection between the *Pontus Euxinus*, the internal parts of Anatolia and, via the upper Euphrates valley, to Syria. The land route network provided a solid and stable platform to sustain every military operation in the area: it allowed swift movements for the imperial troops and provided the necessary logistical support for a campaigning army³³⁹. The Cappadocian *limes* was therefore the cornerstone of the imperial military organization in the east, being both a platform from where it was possible to strike the dangerous Parthian kingdom right at its heart and a sort of frontline to block any attack from the mountains range, trough where, despite the evident difficulties in crossing high passes and narrow valleys, attacks were more often launched from both sides. The assignment surely required a man of experience, loyal to the imperial house and renown a commander, but it is unclear if Arrian, whose previous military posts are unknown, was already a renown general at the time.

Why such an important province had been entrusted to Arrian had risen many questions in modern scholarship indeed. A great part of the answer depends on the date of Arrian's impressive literary corpus. Many have seen the "tryptic", that can be surely dated to the time he was *legatus* of Cappadocia, as an ensemble of juvenile works and therefore presumed that Arrian had wrote the *Anabasis of Alexander*, arguably his most famous work, after having held the office of provincial governor. Actually, Arrian disappeared from the political scene at the end of Hadrian's reign, his fame as writer and historian was not established at the time, and Hadrian chose him without considering his humanistic talents³⁴⁰.

It has been argued that Arrian could have fought under the orders of Trajan during the emperor's war against the Parthians³⁴¹ on the base of a passage from Johannes Lydus³⁴², in which the new Xenophons is credited of having a personal knowledge of the Caspian Gates that he described in the 8th book of the *Parthika*.

³³⁶ After having replaced the *XVI Flavia Firma*, possibly in the aftermath of the Parthian War (Dio 67, 19,2), the *XV Apollinaris* legio occupied the stronghold until late antiquity (Dio 55, 23,5; *Itiner. Anton.* 183,5; *Not. Dign. Or.* 38,13).

³³⁷ Jos. Flav. *Bell. Iud.* 7,18.

³³⁸ Mitford 1974 p. 174.

³³⁹ Magie 1950 pp. 561; 570 and ff. Bosworth 1976 pp. 63-78; Reddé 1986 pp. 442 and ff.

³⁴⁰ Bowersock 1969 p. 52. Arrian was indeed known in Antiquity as a philosopher: Souda s.v. Ἀρριανός (Adler alpha 3868); Phot. cod. 58 p.17 b 11.20.

³⁴¹ Wirth 1974 pp. 169-209; Stadter 1980 pp. 135-143.

³⁴² Lyd. *De mag. Imp.* 3,48.

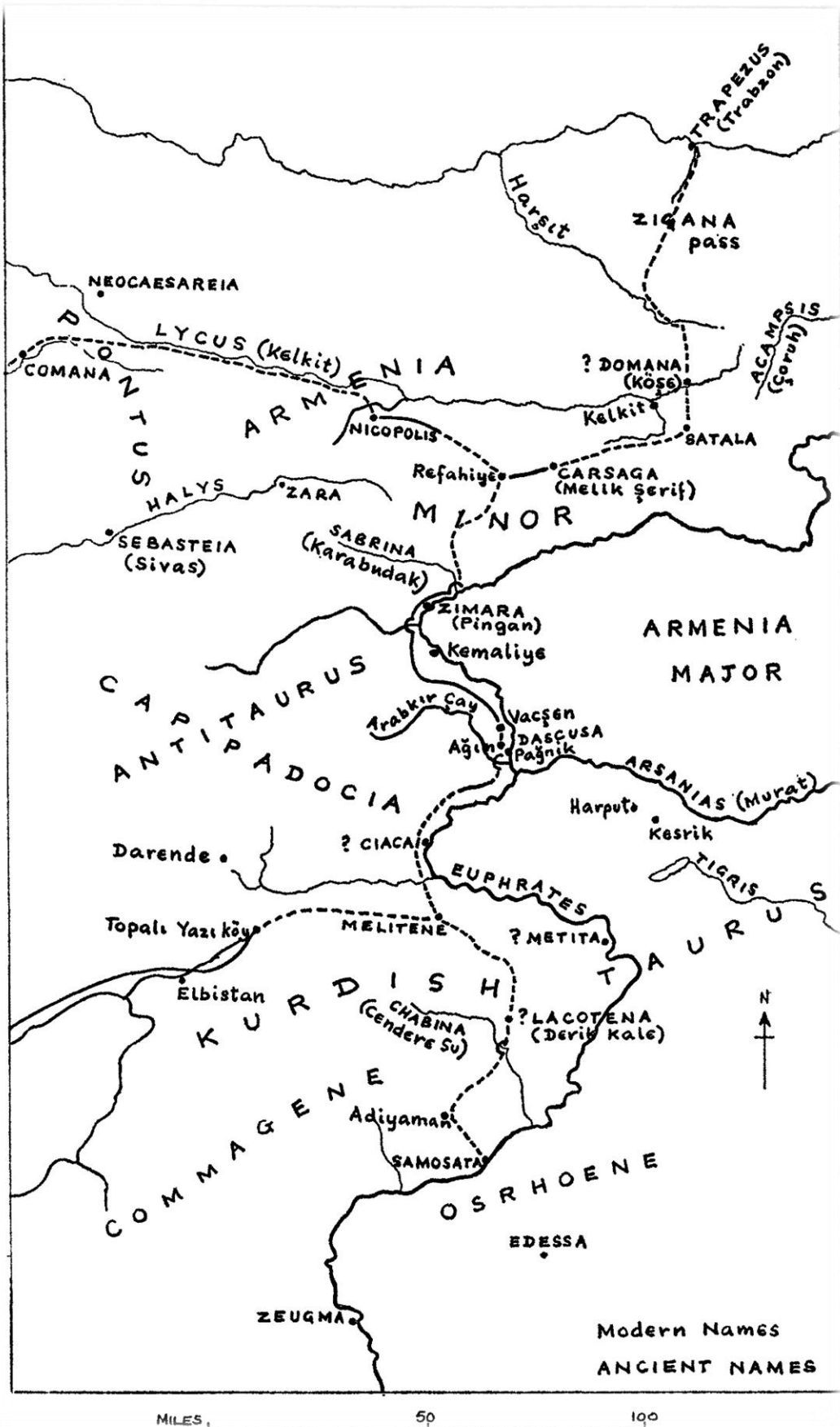


Figure 1 Map of the Cappadocian Limes- From Mitford 1975 p. 161.

Arrian could have visited the region when he was in charge of the Cappadocia's province, there is no need to presume that he had previously fought in East. The *militiae equestres* were not enough for such a prestigious appointment: Roman young officers commanded troops of infantrymen or cavalrymen but had few soldiers under his direct command, and warriors that had the same role and the same equipment on the battlefield and was not the commander in chief of a large army. Ruling a large and powerful province and commanding its army presumed a completely different set of skills and a much deeper knowledge of warfare in every aspect to arrange a large army, organize the logistics and lead a battle fought with thousands of soldiers and with troops that had many and different tactical roles.

Modern scholarship has debated for long to understand if Arrian's career should be considered more a "military one" or a "humanistic one", boosted by Arrian's literary production and by his personal contacts with the emperor.

Ancient authors considered Arrian as particularly striking example of a philosopher in the service of the state, thus highlighting his double nature of savant and politician³⁴³.

Some scholars have highlighted more the military nature of Arrian's career³⁴⁴, while others have accorded a greater importance to his humanistic background.

Bosworth in particular have argued that the texts of "tryptic" did not represent at all a juvenile literary attempt, but they rather showed some elements of maturity in sophisticated structures and in a good knowledge of classical culture³⁴⁵.

Bosworth concluded therefore that Arrian had already wrote and published his *Bythinika*, that was the original context for the *Anabasis of Alexander*, some years before obtaining the prestigious place of *legatus*. Acclaimed by the cultural élites of the empire, Arrian was known for being a talented historian rather for his duty at the service of the state. Hadrian could have chosen his old friend, with whom he shared the same teacher, because of the importance he credited to a solid humanistic formation³⁴⁶.

Despite Bosworth's analysis of Arrian' literary corpus is particularly insightful, it does not logically follow that he could have been really "the new Xenophons", being both talented in war and culture.

³⁴³ Themistius *Orat.* 34 and Lucian *Alex.*

³⁴⁴ Schwartz in *RE*² col. 1230-1236; Roos 1968 and in *PIR*² F 219

³⁴⁵ Bosworth 1972 pp. 163-185.

³⁴⁶ Hadrian and Arrian met each other when Arrian was serving in the entourage of Avidius Nigrinus (Syme 1982 pp. 185-186) and they both were also disciples of Epictetus: *SHA. Hadr.* 16,10.

It does appear unlikely that the emperor, who had in his own turn a solid military career and was reputed a skilled commander, should have entrusted such an important province to a man who had no military experience.

Actually, Arrian shows a deep understanding of warfare in both of his essays of *Contra Alanos* and *Taktikà*. He demonstrates also a deep knowledge of the practice of commanding also in the *Periplus*, in which he appears as a careful and diligent organizer and administrator³⁴⁷. Competent commander and talented writer, Arrian was an asset for the imperial establishment not only as loyal and trustworthy officer, more than capable to implement the imperial will in the area, but also a *savant* who could describe and explain Hadrian's policy to every citizen of the empire.

The "tryptic" of works written by Arrian during his governorship represents surely a *unicum* for modern historiography, providing a formidable insight in imperial frontier policy and strategy in a peripheric region of the Roman world, but it knew also few known comparisons from the ancient world.

The imperial establishment had for sure many propagandistic tools in its arsenal and many ways to communicate its actions and successes, but no other provincial governor has left such a coherent literary corpus that deals specifically with the delicate problems of the frontiers.

Only the epistolary of Pliny the Younger could offer a similar insight of the imperial policy, but, despite the province administrated by Pliny was not so far from Arrian' Cappadocia, Bithynia was a relatively secured region, without a large army and not directly menaced from external threats.

The *Periplus of the Black Sea* represents obviously the starting point for the present inquiry. The structure of the essay itself has however posed many problems to modern historiography. The treatise presents itself in the classical form of a *periplus*, a geographical description that exploit a fictional or a real voyage. The hybrid soul of Arrian's work derives from the juxtaposition of two distinct parts. The first parts, that apparently proceed directly from the dedication and should be the original core of the essay, seems to be the literary version of an official report written by Arrian himself when he was the *legatus* of Cappadocia³⁴⁸. The relation covers the Black Sea shore from Trapezus to Sebastostopolis, namely the areas of Polemonic Pontus and Colchis personally visited by the author³⁴⁹.

³⁴⁷ Arr. *Peripl.* 6,2; Arr. *Peripl.* 9, 3-5;

³⁴⁸ Official reports are mentioned twice by Arrian in Arr. *Per.* 6,2 e 10,1.

³⁴⁹ Arr. *Peripl.* 1-11.

The second part completes the description of the Black Sea, fictionally continuing the voyage to the north and to the west until reaching Byzantium and, with a break, from Trapezus to Byzantium, describing therefore all the costs of Pontus Euxinus.³⁵⁰

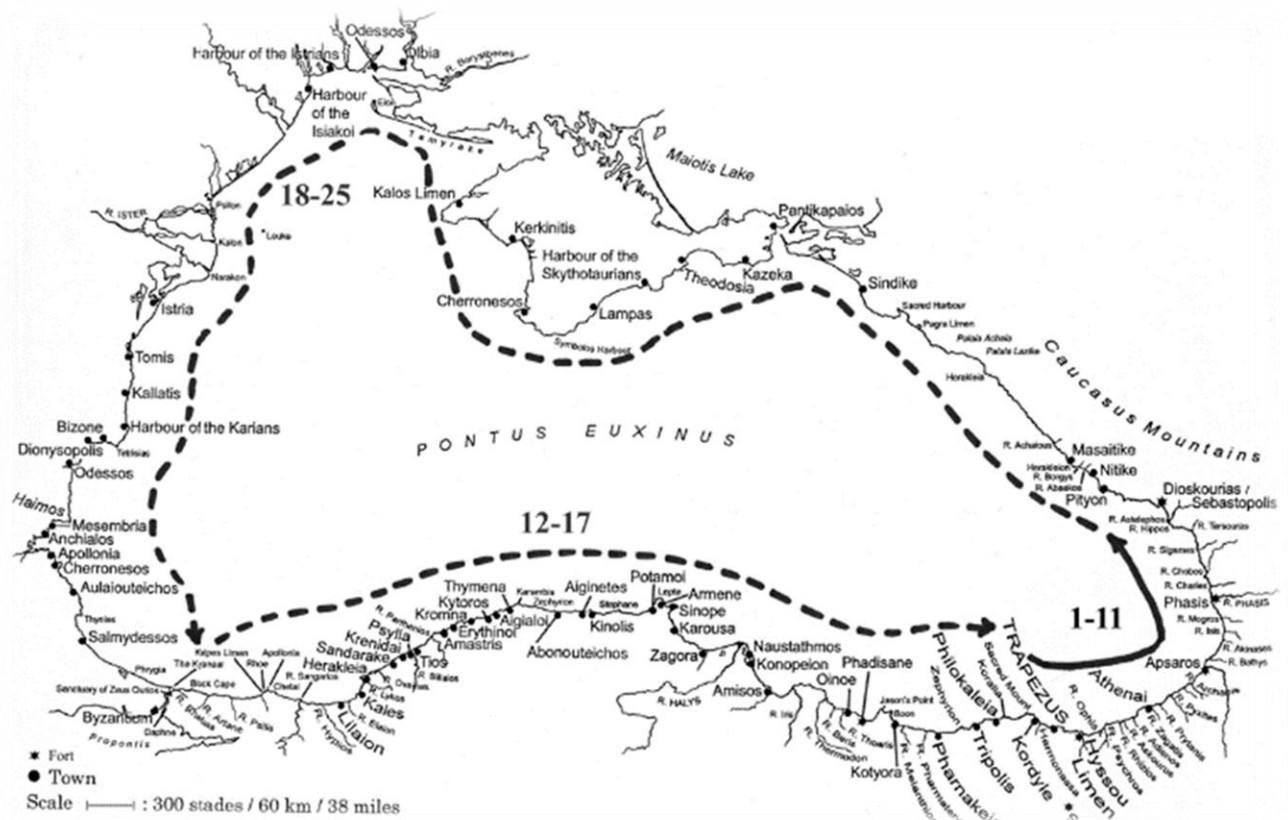


Figure 2 Arrian's Periplus. Combination of Map 1 and Map 2 (pp. 136-139) from Liddle 2012.

The structure appears rather incoherent and many scholars had therefore argued that the Periplus should be considered a spurious work, possibly written by a Byzantine author in the style of Arrian³⁵¹. Recent stylistic analysis has however proved the authenticity of the work and its peculiar structure should be related to the classicist taste of Arrian accordingly to the spirit of the time³⁵².

The original report includes however many meaningful information for the purpose of the present topic. Arrian's mission consisted of visiting a series of military installations along the coast from Trapezus to Sebastopolis in Colchis. It is known that the voyage and the consequent report should be dated to AD 131: while Arrian was on his mission, he was reached by a news

³⁵⁰ Arr. *Peripl.* 12-25.

³⁵¹ For instance, Brandis 1896 pp. 109-126, Chapot 1921 pp. 129-154.

³⁵² Silberman 1978 pp. 160-162; Bosworth 1993 pp. 250 and ff. See also Rood 2011 pp. 136- 140 for the importance of Xenophons both as literary influence and as cultural reference.

concerning the recent death of Cotys the II, king of Bosphorus³⁵³. Cotys' coinage, that stopped around AD 131, provides therefore a useful dating element for the essay³⁵⁴.

If the date of the report is known, the scopes and the reasons of the voyage are more obscure. According to Arrian himself, he decided to complete the description of Black Sea's coasts, albeit he apparently never visited all the regions around the sea, because of the death of the Bosporan king could open a phase of instability in the northern regions and forced the emperor to intervene to settle the situation: the complete *Periplus* had been intended to help the emperor in planning a military action in the Bosphorus by providing an overview of the area³⁵⁵.

The declared intend rises however many doubts since Arrian did not use contemporary sources in his description. The whole structure of the essay seems to indulge more in an erudite taste for classical authors rather than reflecting the necessity of a detailed account of the area. However, also in this respect the essay reflects some of the ruling style of the emperor and not only in the admiration for the past.

It cannot be denied that Arrian's *Periplus* appears to be the mirror of Hadrian's voyages through the empire in a much smaller scale. The principle appears to be the same in both cases: having a direct knowledge of places and frontiers is essential to rule. The supreme authority of Rome, the *princeps* himself, voyaged through the empire until its limits but also a "simple" governor, who shared emperor's power as his delegate and acted according to *princeps'* will, had to be physically present all over the province that had been entrusted to him³⁵⁶.

Ultimately, the *Periplus* exemplified the peculiar ruling style promoted by Hadrian, attesting implicitly the efficacy of the method and illustrating it to a vast public, but elements of continuity can be detected also in other aspects of Arrian's behaviour as governor of Cappadocia and, in particular, as military commander.

Before proceeding further, it should be briefly discussed the most immediate reason that convince Arrian of the necessity of the voyage.

The official report sent back to Rome interested a series of military installations from Trapezus, that at the time relied on a local militia for its own defence³⁵⁷, to Sebastopolis in Colchis: every

³⁵³ Arr. *Peripl.* 17,3. The death of Cotys II is dated to AD 131/132 on the base of Phlégon de Tralles, *Olymp.*, 15 frg. 20 (22) in: F.Gr.H. 111,257 F 17 (= Const. Porphy. *De them.* 11,12).

³⁵⁴ Brit. Mus. Catalogus (Bosporos) pp. 61-64: Cotys II coinage stopped around AD 131-AD 132.

³⁵⁵ Arr. *Peripl.* 17,3.

³⁵⁶ See Syme 1988a pp. 159-170 and Birley 2003 pp. 225-241 for accounts of Hadrian's voyages chronology.

³⁵⁷ Hoplites" from Trapezus are enlisted in Arr. *Alan.* 7. Possibly, the militia was formed by what was originally king Polemo II's army, that, together with the fleet, was inherited by the Romans: Tac. *Hist.* III,47. A garrison formed by a

camp and stronghold described was reached by the sea, since Arrian moved with at least a squad detached from the Pontic fleet, and had therefore a solid link to the sea.

As Reddè³⁵⁸ has already argued, it is unlikely that this military system was intended to be a coastal defence. Not only there was no naval power that could challenge the imperial control on the Black Sea at the time, but even the scattered references to piracy found in the *Periplus* prove to be outdated for the 2nd century AD³⁵⁹.

The Pontic fleet itself, originally arranged by the last king of Pontus, was relatively small and had limited strategical scopes, but was more than enough to deal with piracy³⁶⁰. If a king, backed up by the Empire, was able to arm just 40 vessels it's unlikely that the tribes settled along the coast, with fewer economical resources and without the support of Rome, could really pose a threat to the sea routes.

Furthermore, Roman presence in the area was limited to the thin coastal area and the mountainous inland was not under the direct control of the emperor: with no threat from the sea and with no region to defend beyond the shores, the strongholds visited by Arrian were hardly intended to guard the hinterland against enemies from the sea.

The system rather faced the mountains and the tumultuous tribe settled in the Caucasus. Arrian is indeed particularly scrupulous in taking notes of every river that penetrated from the sea³⁶¹ to the internal regions and dedicated a whole chapter in presenting the communities settled there, their habits and political stances³⁶². Every camp visited lied at the mouth of a river and it was therefore at the conjunction of two worlds: the sea from one side, indisputably domain of the empire, and the Caucasus' mountains and narrow valleys on the other side, a land of not easy access and hard to control.

vexillation from Cappadocia's legions is known only from the time of Marcus Aurelius: CIL III 6745 (soldiers from the *XII Fulminata*) and CIL III 6747 (from the *XV Apollinaris*).

³⁵⁸ Reddè 1986 p.442.

³⁵⁹ Arrian mentions piracy operations in the Black Sea only at *Peripl.* 25,2-3 quoting from Strabo 7,16,1 (the Astae, a population settled near Byzantium, who used to attack ships that ran aground in the coastal trait). More reference to pirates' activities in the area can be found in Strabo 9,2,12; Ovid. *Ex. Ponto* 4,10,25-30; Plin. *Ep.* 10,21,86; Plin. *N.H.* 6,16. Plin. *Ep.* 10,21 mentions a praefectus orae ponticae who was entrusted to patrol the roads along the coast, but he had a limited personnel at his own disposal (only a knight and few *centuriones* are mentioned) and apparently he did not deal with offshore attacks.

³⁶⁰ Tac. *Hist.* 3, 47; Fl. Jos. *Bell. Jud.* 2, 16,4. It has a similar and complementary function to Bythinia fleet: Fl. Jos. *Ant. Iud.* 16,16; Dio 54, 24. Arrian appears to have taken direct control of the fleet, but in absence of the *legatus* the naval squadron was probably commanded by a *praefectus*: CIL 6,41271 =31856.

³⁶¹ Arr. *Per.* 7.

³⁶² Arr. *Per.* 11.

Military units deployed in the sector held what we can nowadays call a bridgehead, they guarded the narrow valleys from where a potential enemy could strike but also they ways through the imperial forces could launch an offensive against the mountainous tribes.

The attention given to landings and their quality confirms that Arrian were evaluating the possibility to exploit the military bases of the sector as strategical and tactical platform for a possible military operation in the area.

In the case of the Athenai on the Black Sea, a former Greek colony that Arrian reached after having visited the camp of Hyssos, Arrian carefully highlights that the anchorage near the ancient fortress left the ships exposed to northern winds³⁶³: the *legatus* may have thought to restore the fortification and improve the harbour to organize a military base. Noteworthy, Arrian gave order to prepare the important stronghold of Phasis, at the delta of the homonymous river, for a long siege and, to strengthen the defences of the place, enlarged the already existing moats to secure a larger landing area³⁶⁴. In this respect, Arrian seems to have carried on a policy already started by Hadrian in the area, who enlarged and improved the harbour of Trapezus³⁶⁵.

If Arrian actually started his voyage at the very beginning of his governorship, the situation was somehow serious enough to require the complete attention of the *legatus*.

Unfortunately, Arrian did not felt necessary to describe the strategic situation beyond the frontiers of his province, confirming the aforementioned opinion of Cassius Dio: political decisions were taken in the secret of the imperial council when the princes ruled over Rome³⁶⁶. Despite imperial frontier policy is not the primary object of the present study, it could be noteworthy to analyse the political context of the *Periplus* to understand the choices made by Arrian.

The abandonment of Trajan's eastern conquest had probably thrown the area in turmoil. The defeat of the Persian empire, that for more than a century had represented a counterweight to the imperial power, threw the small dynasts and kings of the region in a great distress: without the tension between the two mighty empires, the unmatched greed of Rome could easily overturn their dominions and directly rule the area.

³⁶³ Arr. *Per.* 4-5.

³⁶⁴ Arr. *Per.* 9,5.

³⁶⁵ Arr. *Per.* 16,6. Birley 1997 p. 155 suggests that the statue of Hadrian mentioned by Arrian in *Per.* 1,3-4 probably pointed to the harbor the emperor Hadrian has ordered to build.

³⁶⁶ Dio 53,19.

The emperor visited Trapezus and the Cappadocian *limes* in the AD 131³⁶⁷, after having visited Athens, and then he met with the principal lords of the region. Even Osdroe, the Parthian king, participated in this high-profile conference. The imperial diplomatic effort aimed to reinforce the new political and strategical equilibrium in the region by reassuring old and new allies of the good intention of Rome. Particularly noteworthy was the absence of Pharasmanes II, king of the small Iberian kingdom that had an immense strategical value. Pharasmanes should have recently come to the throne when Arrian found himself at the head of the Cappadocian province, succeeding to Mithridates I. Rome had however some reasons to fear this new and strongly independent prince, who had also married the daughter of the Parthian king³⁶⁸.

The small kingdom of Iberia occupied a particularly important position in the Caucasian range and was long known by the Romans. Historically tied to Rome³⁶⁹, while the neighbouring dominion of the Albanians was a traditional ally of the Parthian king, the Iberians controlled the passes that brought to the north and to the steppes inhabited by the Alans.

Rather than a first line of defence against the Sarmatian tribes, the kingdom of Iberia acted as a gate, preventing or allowing the passages of the tribes and their knights to the south. In many occasions, the alliance with the Iberians, or the indirect control exercised by the emperor over the local dynasts and kings, allowed Rome to call the Alans at its side.

The first encounter with the renown Sarmatian knights can be dated to Caesar's *blitzkrieg* against Pharnaces II. After being defeated by Calvinus, the king gathered a force of Scythian and Sarmatian and stormed Theodosia and Penticapeum, capturing both cities, before being defeated on the battlefield by his enemy Asander³⁷⁰.

The alliance with the Iberian kingdom allowed Rome to call the Sarmatians in different occasions during the imperial history.

³⁶⁷ SHA *Hadr.* 13,9. Following the hypothesis of Magie 1950 p. 621, Bosworth 1977 p. 228 dates Hadrian's visit in the region to A.D. 131, while Syme 1988 p. 163 proposes a more cautious judgement. Birley 2003 p. 431 dates the visit to the A.D. 129.

³⁶⁸ Toumanoff 1969 pp. 1-33 (and in particular pp. 11-16) about chronology of Iberian kings. See also Braund 1991 pp. 208-219 about the difficult relations between Hadrian and Pharasmanes the II.

It could be interesting to note that according to the anonymous Georgian Chronicle (chapter 6), Pharasmanes' brother, Mithridates, had married a Parthian princess: because of the rivalry between the two, a the kingdom was thrown into a civil war when Mithridates, backed by the Parthian kingdom, fought against Pharasmanes and his Armenian ally. It appears surprising that Pharasmanes, who victoriously opposed the filo-Parthian faction, refused to meet with Hadrian in later times. As Juntunen 2013 pp. 123-127 has argued, it is possible that the rivalry between the Iberian and the Albanian kingdoms had reached at the time a critical point, and Pharasmanes preferred to risk the support of the Roman empire to settle his rivalry with the Albanians on the battlefield once and for all.

³⁶⁹ Mithridates I had sent his brother, Amazaspus, to fight in the Parthian War alongside Trajan: IGR I, 192 = SEG XLIII, 1015.

³⁷⁰ App. *Mithr.* 120. See also 11,5,8. Noteworthy, Pompey's win over Mithridates brought the Romans in a direct contact with the Caucasian kingdoms, with the first massive diplomatic and military offensive of Rome in the area. App. *Mithr.* 114.

Sarmatians were recorded among the Roman allies under Augustus³⁷¹, and they evidently maintained a friendly behaviour towards the empire under his successor. Under the reign of Tiberius, tensions between the Parthian kingdom and Rome for the control of Armenia escalated quickly. The Iberians struck first and, after having overrun Armenia's defences, blocked the valleys, preventing Parthian allies to join the fight. At the same time, Sarmatian knights moved south, merging with the imperial forces³⁷².

Alans were apparently at the heart of the debate during the reign of Nero, when they are mentioned by Seneca³⁷³, Lucan³⁷⁴, Valerius Flaccus and Martial³⁷⁵ among the others.

They were apparently not involved in Corbulo's military operations, but in the AD 72, when Vespasianus had already seized the power, they were called by the Hyrcanians, who had rebelled against the Parthians. They possibly moved from the Aral lake regions, overrunning the district of Media before entering the Armenian domains of Tiridates, who dared to face them on the battlefield. Armenian warriors fought bravely but could not stop the onslaught of the Sarmatian cavalry, the prince himself, who was recently crowned by Nero, barely saved his life on the field. Aiming to revenge his vassals and allies, king Vologaeses of the Parthians gathered a vast army and asked Vespasian to help him in defeating the Alans but the emperor refused: the Sarmatians struck in the heart of Rome rivals' lands, carefully avoiding empire provinces and allies³⁷⁶.

Historical precedents were in favour of the empire, since the Alans had never shown signs of hostility against Rome, and also the Iberians had apparently remained loyal until that moment. The attention always paid by Rome to his small Caucasian vassal is therefore understandable: the Iberian kingdom was firmly in control of the narrow passes that brought to the lands of the Alans and could therefore call the Sarmatians against the enemies of the Iberians or of their Roman allies. Subjugating these mountainous tribes was probably expensive and difficult, but keeping good relations with the small kingdom was vital: the Flavian dynasty

³⁷¹ Aug. *Res Gestae* 31,2.

³⁷² Tac. *Ann.* 6,32-36; Dio 58,26,1-4. Tacitus speaks more vaguely about Sarmatians, but Fl. Jos. *Ant. Jud.* 18,9 presents them as Alans.

³⁷³ Sen. *Thyest.* 629-636. Seneca appears however imprecise in geographically collocating the Alans.

³⁷⁴ Luc. 8,223-224; 10,454: the war-like people settled north the Caspian Gates.

³⁷⁵ Val. Flacc. 6, 642- 656 and Martial. 7,30 they both collocate them in what is South Russia nowadays.

³⁷⁶ Fl. Jos. *Bell. Jud.* 7, 244-251. According to Flavius Josephus, the war took place immediately after the occupation of Commagene (*Bell. Jud.* 7, 219) in A.D. 72; see also Suet. *Dom.* 2,2; Dio 66,15,3. Bosworth 1977 p. 223 highlights that Vologaeses' prestige was particularly damaged for the destruction suffered by the kingdoms of Media and Armenia, both ruled by his relatives at the time. See Tac. *Ann.* 15,2 e *Ann.* 15,31 about Vologaeses' relations with his brother and the consequent prestige setback.

in particular took care in helping the Iberian dynasts to secure their position³⁷⁷, tying the kingdom to empire fate.

The whole situation deteriorated at the beginning of the 2nd century AD. Possibly, Pharasmanes II was trying to capitalize on the chaotic situation in which the whole region was thrown after the death of Trajan and inaugurated a new policy that was more aggressive and less dependent by the empire.

The behaviour of the young prince worried the imperial establishment, that probably feared the loss of such a vital vassal and forced the imperial forces to closely watch the situation.

The attention gave to the tribes settled near the strongholds and the fortress visited confirm that Arrian was indeed informing the emperor about possible enemies in the region. At the same time, he was probably expecting the involvement of the Sarmatian in the incoming war.

Even with the Sarmatians on his side, Pharasmanes II was not a real threat for the mighty empire. The young king was ambitious perhaps, but not a fool: he was probably aiming to a smaller prey, and he found in the neighbouring kingdom of Albania the perfect target.

Albania had historically been one of the Parthian allies in the region, somehow balancing the Ibero-Roman axe, but arguably Osdroe was not in the position of engaging in a long and difficult war to sustain one of his remote vassals.

Themistius states that Arrian himself was called to settle the dispute regarding some lands Iberian and his Albanian rival³⁷⁸. A bilingual inscription in Greek and Aramaic, found in Armazi, seems to confirm that a conflict between the two kingdoms required an imperial arbitration: the text records the marriage between Serapitides and a man called Iodmangano, who bore an Iranian name but was also the son of a Publicius Agrippa, a dignitary (*pitiahs*) at the court of Pharasmanes II³⁷⁹. Publicius Agrippa was arguably an imperial emissary at the Iberian king's court, sent by Rome to defend its interest and to control its assets in the region. To overcome his rivals, Pharasmanes II called the Alans and the Sarmatian hordes moved south, crushing every resistance on their path, and ravaged Albania. The Alans approached the Cappadocian borders, but the empire was not their target nor a war against Rome was in the mind of Pharasmanes.

³⁷⁷ Vespasian helped reinforcing Harmozica, a key-stronghold for the control of the Darial pass. ILS 8795, IGR III 133 cf. Boltunova 1971 pp. 213-222. The strategic importance of Harmozica was well-known in antiquity: Strabo 9,3,5 e Plin. *N.H.* 6,29-30. Domitian reinforced the defence of the Derbend pass by sending a detachment of the XII Fulminata in a fortress north Baku: AE 1951, 263.

³⁷⁸ Themistius *Orat.* 34.

³⁷⁹ SEG XVI, 781. Tod 1943 pp. 82-86.

Arrian, who was closely watching the Iberian kingdom fearing an aggression from the mountains, moved therefore to repel the invaders but no pitched battle took place since the Alans did not enter the Roman province and moved north instead, returning in their homeland. The imperial establishment was expecting indeed a war against the Iberian kingdom and the Alans, knowing that the Caucasian king could call the Sarmatians from the north in his help, and this could explain why Arrian reacted so fast and apparently started planning the campaign since the very first year of his governorship.

The description offered by Arrian in the *Periplus* and in the *Acies contra Alanos* presents however many elements that point to a development in war science during the Hadrian age. Planning a war campaign on the base of a precise knowledge of places and peoples should not be considered surprising: Corbulo sent to the emperor Nero a description of Armenia and Caucasus, arguably foreseeing future engagements in the area³⁸⁰.

The first element that should be highlighted is the relevance that inspections and drill exercises had in the preparation of a war.

Despite the *Periplus* is the literary version of an official report, Arrian carefully informed the readers of the inspections he did from time to time and proudly stated to have personally supervised soldier's training and equipment³⁸¹.

The details offered by Arrian appear to be excessively technical for a geographical treatise, especially for a work that was originally destined to a vast public, but the presence of such insights can be better understood considering the links existing between the *Periplus* and the *Taktika*, the third and chronologically last work of the tryptic.

The work is divided in two sections. After a brief introduction in which Arrian presents a very schematic definition of warfare through its articulations, he dedicated the first part to infantry fight³⁸². This first chapter appears however to be nothing original, and it follows older Hellenistic manual without adding much in this respect. Due in particular to the striking similarities with Aelian's manual, it has been proposed that the two works were actually review of a previous book³⁸³. More possibly, as it has been proposed by Dain³⁸⁴, both Arrian and Aelian had used the same source for their works and this source could have been the nowadays lost treaty of Posydonius.

³⁸⁰ Plin. *N. H.* 6,40.

³⁸¹ Arr. *Per.* 3,1; 6,2; 10,3.

³⁸² Arr. *Takt.* 1-15.

³⁸³ See Köchly 1851 *passim*, see also Förster 1877 pp. 426-449.

³⁸⁴ Dain 1946 pp. 26-40

The most innovative part is the second one, entirely dedicated to spectacular and complex drills for cavalry³⁸⁵. Exercises are described with many details: the equipment was impressive and particularly luxurious, but it was not heavy as the one used during a real battle³⁸⁶.

Despite the drills described by Arrian surely had a public relevance, being performed in front of the imperial dignitaries and possibly seen by a large public, exercises were intended also to have a practical content. Arrian described manoeuvres and combat styles that had a real application in battles³⁸⁷, such as the “Cantabrian gallop³⁸⁸”, the *xunema* shot³⁸⁹ or the complex *toloutegon* manoeuvre³⁹⁰. The practical purpose of the essay has been however questioned. Bosworth, among the others, has interpreted the work as an antiquarian divertissement, while Wheeler has pointed out that the *Taktika* was written and published in occasion of Hadrian’s *vicennalia*³⁹¹, and Arrian has indeed described a series of complex and spectacular exercises with few practical purposes on the battlefield³⁹². Some of the exercises described in the *Taktika* find however comparisons elsewhere. Practice in hurling javelins on horseback as described in the *Taktika* find comparisons in the famous Lambaesis inscriptions, when Hadrian recognised the superior ability of some troops in performing this complex exercise³⁹³, while the inspection of horsemen in Sebastopolis recalled an exercise mentioned in the *Periplus*³⁹⁴.

Drills and personal training were part of Roman art of war as it has been shown in the previous chapters, but for the first time they were coherently integrated in the imperial image of power. If Arrian’s short trip to the edge of his province mirrored emperor’s voyages to the limits of the Roman world, Arrian’s supervision of mass exercises recalled in mind the spectacular performance of the Africa army in front of the emperor himself. The speech pronounced by Hadrian in such occasion, epigraphically preserved and commonly addressed as *Exercitatio*, fixed the supervision of soldiers’ training in a new canon the duty of a good emperor.

Notably, Hadrian, who had had a glorious career in the army before reaching the imperial throne, diverted from the aggressive and expansionistic policy of his predecessor, opening a relatively peaceful period for Rome.

³⁸⁵ Arr. *Takt.* 16-44.

³⁸⁶ Arr. *Takt.* 34, 2-8.

³⁸⁷ Kiechle 1965 pp. 108-109; Stadter 1978 p. 119.

³⁸⁸ Arr. *Takt.* 40,1.

³⁸⁹ Arr. *Takt.* 42,2.

³⁹⁰ Arr. *Takt.* 43,2.

³⁹¹ Arr. *Takt.* 44,3.

³⁹² Wheeler 1978 pp.

³⁹³ CIL 8, 2532. See also Speidel 2006 pp. 120-122; Busetto 2013 p. 191

³⁹⁴ Arr. *Per.* 10,3.

Hadrian needed however to preserve intact the image of the *princeps* as military leader and, because the absence of great military campaigns prevented him from obtaining a major victory against external enemies, resolved to present himself as the keeper of military discipline and valour. Heir of the Republican generals, who personally took in charge the training of their soldiers, the *principes* of the imperial Rome assumed on themselves the supreme authority over the army, hence reclaiming every victory obtained on the field, even when the emperor was not personally leading the troops and becoming the ultimate responsible for the status of the imperial army. Coherently, Hadrian extended his responsibilities to every other aspects of warfare, presenting himself as the one in charge of the general conditions of the army, comprising supply, payment, equipment and training.

The nature itself of the *Taktika* seems to confirm that training held an important place in the imperial propaganda under the rule of Hadrian. Once again, Arrian mixed classical references and antiquarian taste with contemporary political instances in an essay that it is at the same time technical and literary. This peculiar literary device presented cavalry drills performed under Hadrian in a continuum with the prestigious Hellenist war culture: the Roman army of the 2nd century AD reached therefore the peak of perfection by combining the glorious Greek infantry tradition with the new Roman cavalry warfare, or at least this was the message Arrian intended to give.

While showing himself personally checking forts, equipment and defensive works, Arrian was aiming to multiple goals at the same time.

From one point of view, he was implementing the new imperial policy by demonstrating that the emperor personally cared of his army even in the most remote frontiers through the works of his legates. The ruler of the empire was constantly informed of the situation³⁹⁵, nothing could escape to him and everything was led by his will. Or, at least, that was the way the imperial leadership wanted to communicate his effectiveness.

A member of Hadrian's court and part of the cultural élites of his time, Arrian not only fully participated to the political and military culture promoted by the imperial establishment but he also contributed in defining and developing it.

Both the *Periplus* and the *Taktika* reflect the duties of a Roman commander of the mid 2nd century AD, but it also participated in the debate of the time on the nature and forms of military command.

³⁹⁵ SHA *Hadr.* 11,1.

Demonstrating to the public opinion that the emperor was personally in charge even of the most remote outpost helped the *princeps* to strengthen his control over the army: he presented himself as necessary for the existence itself of the empire and tied the troops to the fortune ruler of Rome, who paid them and managed logistics and provisions.

During the reign of Hadrian, the military provision system progressively and slowly became integrated in the depiction of the imperial power, defining its place in the theoretical horizon of military leadership. The political nature of logistics slowly started to emerge.

The attention paid to military training is particularly noteworthy for the purposes of the present research. Hadrian is credited by the *Historia Augusta* to have introduced new military equipment, in particular a new weaponry for the soldiers³⁹⁶. Well known for being a cryptic source, the collection of imperial biographies present numerous historical inaccuracies and forgeries and it is not easy to evaluate this piece of information.

The intense training could however be explained considering the necessity of learning how to properly fight with the weaponry recently introduced. The change in equipment could have reflected a certain development both in tactics on the field and in the personal fencing style of each soldier. Warriors of the imperial army needed therefore to be trained with the new equipment and the attention paid mass drill and manoeuvres could have reflected this necessity. At the same time, these spectacular forms of mass exercitations were for sure noted by the public opinion and

No major revolution in military equipment has been archaeologically noted, albeit the development of singular pieces of equipment was continuous during time.

Arrian's *Acies contra Alanos* presented some interesting innovations in tactics and equipment employed on the field.

The use of spears by the legionary infantry has been for long debated, also because the preserved text is unclear in describing how the weapon was used.

Clearly, the *legatus* intended to use the bulk of his army, constituted by two Cappadocian legions³⁹⁷, to sustain the main fight. The heavy infantry, deployed in an 8 men deep formation³⁹⁸, held the centre of imperial army and had to resist to the brutal charge of the Sarmatian shock cavalry.

Legionaries were apparently equipped in two different ways, with the *κοντοφόροι* in the first four lines and the rear-guard formed by the *λοιχοφόροι*. It has been often argued that the first

³⁹⁶ SHA Hadr. 10,7.

³⁹⁷ Arr. *Acies* 11,2.

³⁹⁸ An *acies duplex* according to Colombo 2011 p. 183.

lines were equipped with the traditional *pila*, but soldiers used the weapon in hand to hand combat and not as javelins, while the *λογχοφόροι* hurled their *lanceae* to hit enemies from the distance³⁹⁹.

Bosworth⁴⁰⁰, followed by Campbell⁴⁰¹ and by Gilliver⁴⁰², concluded instead that the first lines were equipped the *lancea*, a trust-spear that could be thrown to the enemy, while soldiers of the posterior lines kept using the *pila*, throwing their weapons over the head of their companions, to sustain the fight in front of the formation.

The massive adoption of a thrusting spear by the ranks of the XV *Apollinaris* and the XII *Fulminata* have raised the possibility of a major tactical reform under Hadrian, a development that turned the imperial heavy infantry force into a more static and defensive unit.

Colombo⁴⁰³, who admittedly follow the original hypothesis of Bosworth, dated this tactical development to the year of Trajan when the Roman forces massively clashed with Sarmatian tribes on the European front, obviously in connection with the conquest of Dacia, and with Parthian heavy cavalry in the east.

Colombo notes that the first unit of the imperial army armed with the *contus*, a type of heavy spear that could have been the archetype of the weapons used by Arrian's soldiers, appeared under Trajan in the form of the *ala I Ulpia contariorum milliaria*⁴⁰⁴. The argument in this specific passage of Colombo's paper is not completely clear, in author's words: "Ciò suggerisce di vedere nei *κοντοφόροι* arrianei tanto l'evoluzione tattica dei *λογχοφόροι* attestati in età flavia quanto la risposta di Traiano o di Adriano, escogitata in termini di fanteria pesante, ai *cataphracti equites* dei Sarmati e dei Parthi, il principio basilare rimase il muro di aste da urto, ma scala e scopi mutarono radicalmente⁴⁰⁵".

The argument presents many difficulties that should be considered. The *contarii* of Trajan age were knights and fought as part of an assault unit⁴⁰⁶, while Arrian's *kontophoroi* were infantry men who, at least according to the Acies, adopted a defensive formation.

³⁹⁹ Bosworth 1977 pp. 238-239 footnote n. 92 in particular.

⁴⁰⁰ Bosworth 1977 pp. 238-245.

⁴⁰¹ Campbell 1987 p. 26.

⁴⁰² Gilliver 1999 p. 114.

⁴⁰³ Colombo 2011 p. 166.

⁴⁰⁴ CIL 16, 76; RMD 4, 223; 4, 236; 4, 250.

⁴⁰⁵ Colombo 2011 p. 166.

⁴⁰⁶ Eadie 1967 pp. 166-168.

The spear is generally considered a tactical answer against cavalry charges, so it has been argued that the introduction of this new weaponry reflected the Roman need of better countermeasures against cataphract-style knights⁴⁰⁷.

The basic assumption seems to be that the length of the spear can strike the horse or the knight from a safe distance, but tactical answers in the past proved to be different. Solid and compact formations were not easy to crush for cavalymen. Byzantine army of the early middle age often faced enemies who massively relied on the use of cavalry, both light and heavy, and adopted particularly deep square formation to repel enemy charges⁴⁰⁸. Even in modern warfare, cavalry struggled in charge a compact infantry formation despite the soldiers did not carry anymore the long spears and pikes of the past: an expert cavalryman of the 19th century knew that a horse would consider a group of men as a solid block, like a wall, and thus the animal would never charge into such an obstacle⁴⁰⁹.

Ancient essays on horse combat did not furnish details on this aspect, but historical accounts of battle fought in the past seems to confirm that the spear was not necessary to fight cavalry back.

Crassus' heavy infantry repelled the Parthian cavalry for hours, the endless barrage of enemy's arrows broke legion deployment and the heavy cavalry charged only at the end, when the morale of Rome lines was shattered and the soldiers were tired and blessed⁴¹⁰.

Imperial forces had more occasions to fight against heavy armoured knights during late antiquity, when cataphracts and other heavy armoured knights were in use among the armies of Rome and of its enemies. Many examples show that spearmen were not necessary to deal with cavalry, nor were the key of success in those cases.

The *Mattiarii*, equipped with maces, proved to be particularly efficient against armoured enemies and even against knights, and fought successfully against heavy cavalry in many occasions⁴¹¹.

⁴⁰⁷ Still in Colombo 2011 pp. 166, who does not provide any bibliography on this aspect. As far as I know, the idea that spears are good against cavalry is a well spread tactical conception, but it has no bibliographical basic reference. It seems to be "common sense" knowledge. The effectiveness of Greek hoplites formation and of the Macedonian phalanx against the powerful Persian cavalry has possibly convinced some historians that polearms were the best answer against cavalry, but sources prove a different point.

⁴⁰⁸ McGeer 1988 pp. 135-145.

⁴⁰⁹ Badsey 2008 *passim*.

⁴¹⁰ Plut. *Crass* 24,3 : Persian cavalry could not charge Crassus' heavy infantry because of the depth of the formation and the solid wall of shields. See also Plut. *Crass*. 27,2.

⁴¹¹ Zos. 1, 52, 4 e 53, 2 (Aurelian deployed mace-equipped infantry against Palmyrean cavalry); Nazario, *Pan. Lat.* 4, 24,3.

Imperial cavalry proved ineffective against the barbarian warriors at Strasbourg, and in other cases the answer was found in light cavalry and not in phalanx-type formations⁴¹².

Whatever was Arrians' reason to equip his soldiers with spears, it had been hardly influenced by the peculiar fighting style of the Alans.

According to the *Acies contra Alanos*, the heavy infantry held the line of Roman battle line but Arrian aimed to break the Alan charge before the knights make contact against the Roman infantry⁴¹³. It logically follows that the phalanx was not the most vital element of the plan, the legions acted rather as a back up line in case the barrage of artillery fire, javelins and arrows proved ineffective.

The massive use of field artillery represents instead the most innovative element in the tactics conceived by Arrian.

For the first time, the technological superiority of the Roman army over its opponents found a coherent and homogenous application on the battlefield: instead of facing manoeuvring to win a hand to hand combat, that could prove hard and challenging ever for the disciplined and well equipped imperial legions, Arrian planned to win the battle thanks to the overwhelming fire power of its army.

As the *Periplus* and the *Taktika*, the *Acies* was not merely an essay on tactic but was intended also for a public of non-specialists⁴¹⁴. It is possible that Arrian was once again showing the level reached by the imperial under the leadership of Hadrian, thus celebrating the status of art of his own age, and he was at the same time contributing in the military debate.

Hadrian's court and his top military advices began developing a new sensibility towards military equipment and weaponry. Romans had already realized the importance of a good weaponry in the past and they have surely reflected many times about the necessity to improve the equipment of their soldiers by adopting the arms of other cultures, but this new approach proposed a more coherent view on the topic and more strongly issued a relation between military technology and victory. The introduction of new weapons and the improvement of equipment and tactics slowly became integrated in emperor's duties, it became an important

⁴¹² Amm. Marc. 16,12,22 is particularly explicit: an infantry soldier can easily overcome and defeat a heavy armoured knight in close quarter combat. More in general Amm Marc. 16,12 for the description of Argentorate battle: Roman heavy cavalry is defeated and routed, but Julian's infantry managed to hold against enemy charge and broke enemies' morale after a long fight.

⁴¹³ Arrian. *Acies*. 26.

⁴¹⁴ The use of Xenophons to portray himself represents indeed a clever word-play by Arrian, who adopted in this way a literary device to link his work to the prestigious classical past, and at the same time reclaim his Greek origin: as demonstrated by Stadter 1967 pp. 155-161, Flavius Arrianus Xenophons was indeed the complete name of our author.

part of imperial message: a good *prince* had to continuously improve the condition of the army, improving weaponry and tactics to gain victory over the enemies of Rome.

If accepted, this conclusion would explain well why and how the Roman army, that apparently remained relatively stable during the last decades of the Republic and the first centuries of the empire and then, from the end of the 3rd century AD, started changing at a different rate speed.

The re-emergence of this very same attitude during the 3rd century AD, as it will be seen in the upcoming chapters, seems to confirm that this approach endured over the centuries, surpassing the Hadrian age and became integrated in the strategic culture of the late empire.

The debate on Roman strategic culture was carried out by the military élites of the empire rather than by one man alone, but only the emperor had the authority to implement a radical change in the imperial armed forces.

The attention paid to soldiers' training and to the quality of their equipment seems a defining trait for Hadrian's military policy and characterises his reign.

A care for personal training and drill exercises is actually compatible with the introduction of new equipment or new fighting tactics: soldiers had to become acquainted with new weapons and manoeuvres to be proficient on the battlefield.

Arrian's literary production shows the emergency and development of this new sensibility together with a practical application on the field: Arrian's battle plan to repel the Sarmatian relied on the massive use of eastern bowmen, sling-men and artillery to strength the synergy between the various elements of the army, proposing in this way a slightly new and innovative approach to battle wherein the clash along the frontline was reduced in its importance and in its intensity.

The *Historia Augusta* highlights the main features of Hadrian's policy, from the frequent voyages all around the provincial world to the extreme attention to every details regarding the army. The adoption of new military equipment is also mentioned, but no details are provided by our source⁴¹⁵. It is known that Hadrian faced the progressive loss of ethnic traits of auxiliary units by creating new formations, the *numeri*. Recruited among non-Roman populations, the *numeri* were intended to preserve and exploit war-traditions of foreign cultures, albeit the organization of these troops is not entirely known today⁴¹⁶.

⁴¹⁵ SHA *Hadr.* 10,7.

⁴¹⁶ Southern 1989 pp. 81-140.

At the same time, the creation of new cavalry units implies the application of a coherent military policy that aimed to reinforce and improve the tactical and strategical flexibility of the army.

Hadrian's policy presumed a certain control over the production of military equipment. The inspections of military equipment mentioned by Arrian imply the existence of certain quality standards that, regulated by law or on unclear bases, had to be respected. Documents from Carlisle seem indeed to confirm that military officers were in charge for the quality of their soldiers' equipment⁴¹⁷.

If the progressive standardization of military equipment becomes more and more visible during the 2nd century A.D., spontaneous processes of adoption of new equipment and weapons should be accounted as well. It has been proposed that the standardization could be explained considering that "patterns" were shared by soldiers themselves in different occasions, for instance when an emperor assembled a large army for a campaign or more sporadically when duties put in contact soldiers from different units⁴¹⁸. The case of Sarmatian-style ring sword is particularly interesting in this case.

The ring-pommel sword apparently were adopted by Roman soldiers only in the western part of the empire, surely as a consequence of the Sarmatians' arrival in the area, but it is not clear how long it lasted in use among the imperial army, nor it is completely clear if the pommel-ring was simply adapted to Roman functional type⁴¹⁹. The shape of the pommel itself it is not functional *per se*, so it could have been adopted as a decorative or identarian motif, while different types of blades imply different type of fencing techniques and combat styles.

Fibulae, decorations and fittings that did not have a real tactical purpose on the battlefield were surely subjected to tastes and fashion, thus there were apparently no reason to impose a standard⁴²⁰.

Social factors normally influenced the material culture, determining the persistency of forms and types of weapons used by a community, but proficiency in battle and the exigence for a simplified and more efficient logistics tended rather to the adoption of a more homogenous equipment among the army.

No state-owned workshops are known for this period, but the imperial establishment could have found different solution to control the production. Possibly, more or less organized groups

⁴¹⁷ Tomlin 1988 n. 16 pp. 55-63.

⁴¹⁸ An idea proposed by Bishop 1985 p. 15.

⁴¹⁹ See the studies of Miks 2007.

⁴²⁰ See for instance Coulston 2004 pp. 133-152.

of artisans and blacksmiths were there privileged partners of the emperor to equip the army, and thus the provision system began to rely on a limited number of sites for the production of armours and weapons. Cities were the most likely candidate in this case, having the necessary infrastructures and social organization to carry a larger production. Urban settlements were also firmly in the grip of Roman power and were probably easier to control and manage than scattered rural sites.

If every province had its own manufacturing centres, where civil workshops were particularly numerous, for production and supply of military equipment, crafting new equipment could have been relatively easy to organize for the imperial establishment. If accepted, this progressive development towards large manufacturing centres could represent a step in the evolution from the decentralized system of the first empire to the heavily state-directed organization that characterized the late empire.

4 - An Interlude:

Banditism, Insurgencies and Weapons Control.

Since Roman authors are particularly negligent in providing details about weapons production, it could be interesting to approach the topic from a different point of view. Paradoxically, the study of insurgencies as social phenomena can shed a bit of light on an otherwise obscure aspect of Roman society.

What could be called, in a Weberian way, the monopoly of violence was for sure a necessity for the imperial establishment, and it was for sure a point of Augustus' political agenda.

Civil Wars at the end of Republic left the *res publica* in a state of turmoil. Armies of the defeated rivals were disbanded in mass, both to reduce military expenditure for the state and to prevent insurgencies or any other form of resistance. Many of the discarded veterans turned into banditry, tormenting even the Italian peninsula. Years of violence and instability had also forced rich landowners to arm their servants in an attempt to protect their properties.

The difficult situation is reflected by Suetonius's account, according to which Augustus attempted to resolve this social problem by establishing guard posts around the peninsula and inspecting largest properties to confiscate weapons and equipment⁴²¹. In Suetonius' *Vita*, landowners exploited brigands and armed their bands as well as the *collegia* apparently did and, because of that, Augustus decided to disband all the associations, conserving only the most ancient and legitimate ones⁴²². It is likely that associations and the rich landowners gave refuge to veterans of the defeated parties and the new prince feared a possible recrudescence in the conflict. A severe control over associations was maintained for long, being these structures a potential threat for the imperial power, and it was forbidden to organize a *collegium* without emperor's approval: the Caesarean or Augustean *Lex Iulia de collegiis* stated that all of this kind of association should have been regulated by Senate decisions⁴²³.

The correspondence between Younger Pliny and Trajan confirms that a firm control over association was still in place at the beginning of the 2nd century AD. In this specific case, due to a fire that destroyed large parts of Nicomedia, Pliny submitted to the emperor the request of the Nicomedians to organise a *collegium* of fire-fighters, assuring that the limited number of participants would have made easier to control the *collegium*. Trajan's refusal was however

⁴²¹ Suet. *Aug.* 23.

⁴²² Suet. *Aug.* 32,1.

⁴²³ CIL, 6, 2193 = 4416; ILS 4966.

motivated by the fact that the city itself had been troubled by associations in the past, and the emperor wanted therefore to prevent further insurgencies in the area⁴²⁴.

Evidently, imperial establishment saw potential menaces in those professional or religious/social associations and possibly feared that they could exploit their relation network or their economic power to gain advantages from illegal activities.

It's hardly possible such civil institutions, especially from only one city, could really challenge the imperial control over a province, but the care always showed by emperors in controlling the *collegia* and in limiting their formations demonstrates the strength of these associations.

Surprisingly, Roman laws about weapon possession are noteworthy vague: weapon possession did not constitute a violation per se, but it was illegal when this possession was motivated by malevolent intent.

The *lex Cornelia de sicariis* allowed privates to carry weapons for personal defence and it was considered an offence only if the presence of weapons was motivated by the intention to kill or to harm someone⁴²⁵. The law was vague enough to allow law enforcements and governors to act against potential threats and to prevent the outbreak of an insurgency, albeit it was also probably easy to exploit in time of violent political competition.

A certain freedom in ruling over weapon spreading in the provincial area was probably accorded to provincial governors, and it is therefore possible that many local solutions fell outside the law collections preserved in the late antiquity *codices*.

Managing violence in the provincial world, especially in newly conquered region, posed a specific problem to the Imperial administration.

Disarming the subjugated population was for sure a valuable option to impose the Roman rule. Philo of Alexandria, in his speech against the *praefectus* Flaccus, mentioned the perquisition the latter did among the Jews searching for weapons in their home: Flaccus, according to Philo who intended to demonstrate that the Jewish community in Alexandria was not hostile to the Romans, found nothing, "barely some knives used to cook or for tailoring⁴²⁶".

Philo again stated that Bessus, the previous praefect that ruled over the Roman Egypt, had already confiscated all the weapons and the military equipment among the Egyptian civil society, amassing such a huge quantity of arms and armours that a large fleet was necessary to transport all the confiscated equipment from the Upper Egypt to the Delta. The absence of

⁴²⁴ Plin. *Ep.* 32-33.

⁴²⁵ Dig. 48,8,1.

⁴²⁶ Phil. *In Flacc.* 92.

weapons in Jewish houses is explicitly explained by Philo also in reason of this previous mass confiscation that left unarmed the people of Egypt⁴²⁷.

Quoting an unclear passage of Strabo, in which the geographer of Apamea described how the Gauls "laid down their arms and were now compelled to practice the art of cultivation⁴²⁸", Mac Mullen had proposed that a systematic disarm of a recently subjugated population represented a normal practice for the imperial administration⁴²⁹.

Few other cases are known of defeated population being disarmed by the imperial forces: Tiberius proceeded to disarm the Pannonians as a consequence of their revolt⁴³⁰, Osturius Scapula confiscated military equipment to the Britons suspecting of preparing an uprising against the Roman rule⁴³¹ and few decades later Claudius implemented a similar policy to consolidate his conquests in Britannia⁴³².

Contra, Brunt has noticed that those examples were apparently extreme measures taken in time of need and were not a standard practice⁴³³.

The very Strabo's passage quoted by Mac Mullen could be actually interpreted as a metaphor for the imposition of the *pax romana* over the Gauls: won by the Roman armies and forced to abandon their warlike habits, they turned to more peaceful activities and abandoned their uncivilised behaviours.

It is true indeed that violent outbreaks were not uncommon for the imperial administration but somehow the imperial administration managed to implement a sort of weapon control. Turning again to the *Corpus Iuris Civilis* provides a useful insight about this not particularly well-known aspect of the Roman world. According to Marcianus, the *lex Iulia de vi* forbade to accumulate weapons but weapons merchants were exempted as well as the private guards of a *saltus*⁴³⁴.

The passage is however highly informative. A *saltus* could be situated at the edge of the anthropic space, in areas where the state had some difficulties in fully exercising his control. If armed guards were required, *latrones* were probably active and dangerous enough to threaten private properties and the state, struggling in allocating resources in those remote areas, delegated to private the exercise of violence.

⁴²⁷ Phil. *In Flacc.* 86-91; 94-96.

⁴²⁸ Strabo 4,1,2.

⁴²⁹ Mac Mullen 1974

⁴³⁰ Dio 54,31,3.

⁴³¹ Tac. *Ann.* 12,31.

⁴³² Dio 60,21,4.

⁴³³ Brunt 1975 pp. 260-270.

⁴³⁴ *Corpus Iuris Civilis* (Digestus) 48,6,1.

It logically follows that buying weapons on the free market was actually possible. The *lex iulia de vi*, as explicitly stated by Scaevola, allowed the merchants to have a store of weapons: *Excipiuntur autem arma, quae quis promercii causa habuerit hereditateve ei obvenerint*. Albeit unclear, the passage seems to more properly refer to merchants and retailers than artisans.

It is highly speculative but allowing only to entrepreneurs and merchants to store a certain quantity of weapons could have simplified weapons control: if weaponsmiths and armorsmiths could not store military equipment, it means that they perhaps worked mainly on commission, producing for costumers and for the merchants who could deal with larger orders.

Arm depots are not frequently cited by ancient authors, but some urban centres had probably weapon stores: Vienna had probably an armoury at the time of the 69 AD crisis, when the urban population took the arms in an attempt to repel the Vitellian soldiers⁴³⁵. Only as a consequence of their behaviour, the people of Vienna, who had rightfully kept weapons and armours until that moment, were punished with the confiscation of all their weaponry.

If imperial administration or, in time of desperate situation, also usurpers and their armies proceeded to confiscate and disarm the population, it logically follows that the civil society remained armed in a certain degree.

Some professional categories, not directly linked to security or warfare, daily used weapons or, to be more precise, had tools that could be used also in combat.

According to the Roman laws, hunters had the right to possess and carry their own weapon, and when Philo mentioned the knife and the tailoring tools found by the Romans during the inspection of Jewish houses, he ironically implied that even such working tools arose suspects in the ill-minded governors.

Police forces were not unknown, even if were not homogeneously adopted all over the empire. Furthermore, peoples subjugated by the Empire kept sometimes their weaponry, or at least they still had enough arms and armours to equip their youth during the 1st century AD.

The Aedui, for instance, helped Vitellian forces to crush Marcinus by sending their young men who were evidently equipped for battles⁴³⁶. Gallic peoples apparently kept their militias for a while during the first century of the empire: the Elvetii still had warriors during the crisis of the AD 69⁴³⁷, and also the tribes in Maritime Alps⁴³⁸ and in Noricum⁴³⁹ could field some warriors in case of need.

⁴³⁵ Tac. Hist. 1,66,1.

⁴³⁶ Tac. Hist. 2,61.

⁴³⁷ Tac. Hist. 1,67.

⁴³⁸ Tac. Hist. 2,13,1.

⁴³⁹ Tac. Hist. 3,5,2.

Celtic populations were not the only ones indulging in such war-like activities. Tacitus again mentions a short war between the two African city of Lepcis and Oea but the inhabitants of the second one called the Garamanti in their help and, with this powerful ally, easily overthrew the rivals⁴⁴⁰. The passage is noteworthy for the purpose of the present debate: evidently, the two ancient cities still had some men in arms among their citizens, but they were not a match for a population beyond the borders of the Empire. It seems likely that, while Lepcis and Oea relied more on the imperial protection and therefore had lost during times the tool and the capabilities of waging war, the Garamanti, who were not under the control of Rome, maintained their war habits⁴⁴¹.

Cappadocian hilltribes proved to be a particularly tenacious opponent: already defeated and subjugated, the tribe of the Cieti, formerly under the authority of the Cappadocian king Archelaus, rebelled and held their strongholds against the royal militia, being defeated only when the empire sent an army against them⁴⁴².

This case appears to be partially different from the ones mentioned before since the Cieti were settled in a region not directly ruled of the empire, and so the situation could have been partially or largely different by the one existing in a proper province.

A last case deserved to be mentioned, albeit it is only slightly pertinent to the present discussion. In the year AD 59, as a consequence of *ludi gladiatorii* held in Pompei, a fight between the inhabitants of Pompei and the citizens of the nearby town of Nocera burst⁴⁴³. What could be called a brawl was indeed taken seriously by imperial government and Pompei was harshly punished for the disorder: gladiatorial games were forbidden for ten years and all the professional associations were disbanded and declared illegal⁴⁴⁴.

Because of its nature, this “brawl” did not involve necessarily weapons of any kind, nor proper military equipment, and was more a spontaneous outburst of violence than an organized and planned act. It represented however an event of a certain fame if it was represented on the wall of one of Pompei villas. The scene, that is relatively schematic in the way the action is portrayed, describes a chaotic mosaic of small fights between men who held something in their hands, clubs or blades of some sorts but no one appears to have fought with a full military equipment.

⁴⁴⁰ Tac. *Hist.* 4,50, 4.

⁴⁴¹ At their own turn, Garamanti proved not to be a challenge for the heavily armoured legions during the reign of Tiberius: led by the experienced Tacfarinas, they resorted to a guerrilla style warfare, avoiding pitched battles as long as they could before being defeated by the superior organization and strength of the imperial army: for an account see Tac. *Ann.* 3,54,1 (guerrilla warfare and superior organization of the Roman army) and 4,23.

⁴⁴² Tac. *Hist.* 6,41.

⁴⁴³ Tac. *Ann.* 14,17.

⁴⁴⁴ Tac. *Ann.* 14,17,2.

It appears more likely that men from both sides fought with makeshift means rather than real weapons. Interestingly, the government reacted closing the *collegia*, according to Tacitus, but this last passage proved more difficult to interpret for the modern historiography since the societal life of Pompei appears to have been very dynamic twenty years later, when the volcanic eruption annihilated the urban centre⁴⁴⁵. Since Tacitus spoke of illegal associations as targeted by authorities, it has been proposed that the existence of non-regulated *collegia* was a widespread phenomenon in the empire, but also that their existence was generally tolerated⁴⁴⁶. More noteworthy is the hypothesis of Della Corte, later reprised by other scholars with some variations, who argued that the *Iuvenes Veneri Pompeiani*, the collegium that gathered the sons of local élites, was somehow responsible for the happenings and it was therefore closed by authority⁴⁴⁷.

This kind of association had a relevant role in preparing the youth for a political career and, because military commands were part of this professional path, also train them to fight⁴⁴⁸: Titus was said to have participated in training and mock battles, fought with blunt weapons, with the youth of his native town⁴⁴⁹. The associative world was seen with fear and distrust by the imperial government and episodes such as the fight between Pompei and Nocera confirm the threat the *collegia* could represent for the order.

Pompei was further punished with a ban over gladiatorial games⁴⁵⁰, a harsh and severe measure that has been applied few times during the Imperial history and always as a consequence for acts against the imperial family.

Gladiators, who are generally disregarded and poorly considered by Tacitus in his historical works⁴⁵¹, were in an odd situation regarding the topic under current debate. *Lanistae* presumably bought weapons and armours on the market and a man rich enough to afford the

⁴⁴⁵ Moeller 1970 p. 84.

⁴⁴⁶ Kornemann sv. *collegium* in RE IV, cols. 409 and ff.

⁴⁴⁷ Della Corte 1924 pp. 36 and ff. Della Corte has identified in the *Iuvenis Venerii Pompeiani* the *collegia* punished by imperial authorities for the riot, while Richardson, considering that the association remained in activity after the events, has rather pointed to another group, the *Campani*. Richardson 1955 pp. 85 and ff.

⁴⁴⁸ Youth associations promoted show-fights between young men of different cities and sponsored shows in the arena as part of young-men's training: Dio 66,15,2; Herod. 7,8,5; CIL, 6, 2508, 4286, 4287, 4291, 4302, 4309, 4325 4361, 4374, 4384, 4405, 4413, 4870. Partially *contra* Mohler 1937 pp. 442- 479 and later MacMullen 1963 p. 142 deny that the *collegia iuvenum* were intended to prepare military officers nor that those associations had a predominant role as military academies. See also Kleijwegt 1994 pp. 79-102.

⁴⁴⁹ Dio 66,15,2. Augustus had encouraged Roman youth to participate in games and training fights, but the Senate was openly hostile to those practices: Suet. *Aug.* 43,2,3.

⁴⁵⁰ Tac. *Ann.* 14,17,2. This unusually severe punishment aimed to deprive a city of its status and it has been applied rarely during the imperial history: Byzantium in AD 196/7, (Herod. 3,6,9); Alexandria in AD 212, (Dio 78, 22-23); Antioch in AD. 176 (SHA *Marc. Aurel.* 25,9); again in AD 196 (Herod. 3,6,9) and in AD 387 (Liban. *Or.* 19).

⁴⁵¹ Tac. *Hist.* 2,11,2: gladiators marched together with Otho's legions as a *deforme auxilia*. Tac. *Hist.* 3,76,1.

equipment of many gladiators was surely an alarming threat for the state. Otho was able to recruit thousands of gladiators for his army and, despite the advices of his generals, and employed them into battle against the Vitellian rivals⁴⁵².

It could be interesting to know if the ban included also gladiator schools and *lanistae*, who had therefore to cease their activities, or not.

Possibly to cut expenditures, avoiding private and intermediaries in organizing the games, and to obtain a better control over this potential threat, emperors progressively organized their own *familiae gladiatoriae* in the different provinces to have a constant reserve for games or for training purposes⁴⁵³. Tying the gladiator to the government, supplying and arming them, reduced the possibilities that gladiators were employed against the state or in illegal activities. Gladiators did not perform well against fully equipped soldiers despite their fierce reputation: weapons and armours used in the arena were probably not very functional on the battlefield⁴⁵⁴, it could be argued that they were not used in using this heavier equipment, albeit it is known that gladiator was employed to train soldiers, or that it was not possible to equip them properly in the short time the situation required.

If a community was able to amass weapons, this means that was somehow possible to buy arms and armours on the market or even to produce them. As Brunt noted, some of the population that were disarmed by force by the Romans appeared to be in arms few decades later: the Iceni disarmed by Scapula managed to destroy a legion during the uprising under Nero, and were evidently equipped again at that time⁴⁵⁵.

It could be argued therefore that confiscation policy was not effective nor homogeneous or, as Brunt apparently did⁴⁵⁶, it is perhaps possible to conclude that the market was relatively free from any kind of control. In particular, this last hypothesis can be challenged.

In certain degree, civil society remained armed, but the emperors managed nevertheless to grant themselves a certain superiority in the use of violence, a vital supremacy that conserved their power for centuries.

The imperial establishment, a term that in this case comprises the emperor with his court and all the ruling apparatus, was immensely richer and its total wealth could hardly be challenged by privates or by cities and tribes of the empire.

⁴⁵² Gladiators in Otho's forces: Tac. *Hist.* 2,11,2; Tac. *Hist.* 2,23; 2,36.

⁴⁵³ *Procuratores familiae gladiatoriae*: CIL 10, 1685; CIL 3, 14192,12; EAOR-07, 4; CIL 03, 00249 = CIL 03, 06753 = ILS 01396.

⁴⁵⁴ Carter 2006 pp. 161-175; see also Carter 2007 pp. 97-114.

⁴⁵⁵ Tac. *Ann.* 14,31-32.

⁴⁵⁶ Brunt 1975 pp. 266, 269-270.

Imperial army was for sure the largest and better equipped force inside the Roman borders: the economic wealth and power of the emperors easily explained this matter of fact, but it could have been not the only explanatory reason.

It could be interesting at this point to note that private armies were a reality under the Republic, particularly during the last decades of civil wars, but no civil personality were able to equip an army under the rule of the emperors for a long time.

The analysis of literary sources confirms that imperial soldiers of both legions and auxiliary troops were unmatched during the first centuries of the empire and brigands and rebels struggled in equipping themselves to face the imperial armies in a pitch battle.

The rebellion of the two Gallic leaders Florus and Sacrovir is particularly interesting in this respect. According to Tacitus, the two started recruiting warriors among the Gallic tribes, reaching even the Belgian tribes for support, but placed their headquarter in Augustodunum, the capital of the Aedui⁴⁵⁷.

Here, the rebels started to secretly produce weapons to equip their troop: forty thousand (40.000) men were equipped in this way, albeit only eight thousand (8.000) could march into battle fully equipped in a Roman way. The rest of the the large army was equipped with salvaged and improvised weapons and many of them entered the battlefield just with hunting tools or knife⁴⁵⁸. Rebels were joined by a group of gladiators, named *crupellarii*, of a type that were apparently popular in Gauls and that used a particularly heavy armour in fight⁴⁵⁹.

Secrecy in producing weapons should not be over-read as a proof of a particularly strict controls over local blacksmiths and artisans, but nevertheless it indicates that crafting a huge amount of weapons could and should be noticed by authorities: without any reason, the production of such a large quantity of military weaponry would had been interpreted as a sign of hostility.

Tacitus did not mention particular arrangements taken by the two leaders. Probably, Florus and Sacrovir gathered in the urban centre all the supporter and the artisans for the nearby regions but it is also possible that, since it is unclear for how long they prepared the uprising, the one described by Tacitus was the productive capability of a single city in a certain amount of time. Despite producing enough equipment to provide a full *panoplia* to 8.000 warriors had

⁴⁵⁷ Tac. *Ann.* 43,1.

⁴⁵⁸ Tac. *Ann.* 43,2.

⁴⁵⁹ Tac. *Ann.* 43,3.

been for sure a stunning achievement, the efforts of the rebels ultimately proved to be insufficient⁴⁶⁰.

Failing in obtaining the support of the Gallic auxiliary soldiers, who would have provided the backbone of the rebel army, the Gallic warriors could not oppose a valid resistance against the disciplined and better equipped imperial forces, being crushed on the battlefield.

If spears and swords were relatively easy to obtain, assuming that they were normally bore as hunting tools or self defence weapons, the defeat of Florus and Sacrovir could perhaps be ascribed to the lack of defensive weaponry, the efficiency of which is proved by the brave last stand of the *crupellarii* gladiators. Their armours were so heavy to hinder their movements, making them particularly surrounded by imperial troops, but made them also very resistant against the enemies' assault: the gladiators hold firmly their position when the rest of the army was defeated and routed and imperial soldiers had to strike them with pickaxes and other tools to break through their defences⁴⁶¹.

Helmet and armours required particularly skilled artisans and many hours of their work, resulting probably in expensive products that only the states could buy in large stocks.

Oldenstein had argued that at this stage the supply chain heavily relied on military workshops, but he admitted that urban centres of the Mediterranean area still played an important role in producing military equipment. Augustodunum was however quite far from the *mare nostrum*, nevertheless the town gathered enough artisans and blacksmiths to produce a large quantity of military equipment and local artisans were able to produce functional Roman style pieces of equipment: they probably worked also for the army besides producing for local commitments.

Evidently, also in the western provinces the civil world played already an important role in producing the military equipment, albeit the rapidity in crushing the rebellion seems to indicate that without the support of the army and of its workshops challenging the supremacy of the imperial power was not possible at the time.

Is once again Tacitus who provides us with a useful reference in describing Piso's unsuccessful hostile takeover. The tale of the fall of Calpurnius Piso and his son is well known, being the longest of this type in Tacitus' historical work.

Fearing the influence of Germanicus over the Rhine legions, Tiberius decided to send him in the East to detach the prince from his supporters among the army⁴⁶². The strategical and political situation of the Roman east was however in turmoil at the time, and to prevent Germanicus to

⁴⁶⁰ Tac. Ann. 43,2.

⁴⁶¹ Tac. Ann. 46,3.

⁴⁶² Tac. Ann. 2,5,1; 2,26.

create another solid base of personal support, Tiberius decided to name Piso⁴⁶³, an experienced politician who had been very close to the imperial family since the time of Augustus⁴⁶⁴, *legatus* of Syria.

By sending Piso in Syria, Tiberius probably aimed to control better the situation and to temper the reckless and brave military approach favoured by Germanicus⁴⁶⁵. It is unclear why Piso recklessly provoked Germanicus. In Athens, Piso furiously criticised Germanicus' friendly and sympathetic behaviour towards the Greeks and their culture⁴⁶⁶, and he later refused to obey the prince's orders⁴⁶⁷. Piso's attitude was openly hostile at this point, and he further clashed with Germanicus in the occasion of the dinner offered by the king of the Nabateans, during which gold crowns were offered to all participants⁴⁶⁸.

It is unclear if Piso challenged the young prince so openly because of personal reasons or because he was pushed into this line by Tiberius himself, who feared Germanicus' ambitions over the imperial throne⁴⁶⁹. The situation became rapidly unbearable. Returning from Egypt, Germanicus found that Piso had dismantled all of his work and the prince forced Piso to leave the province, that was entrusted to Sentius instead⁴⁷⁰.

The event quickly escalated apparently because of Piso's ill temperament⁴⁷¹, and a civil war burst: the former *legatus* of Syria called to arms his servants, possibly mercenaries, deserters, and asked the small Cilician kingdoms, among which he had temporarily taken refuge, to send warriors to his cause⁴⁷². He had enough men under his command to form a contingent of a

⁴⁶³ Tac. *Ann.* 3,12,2.

⁴⁶⁴ Piso had been consul together with Tiberius in 7 B.C. (Dio 55, 8,3; Tac. *Ann.* 3,12,2), and it has been argued that he benefitted of Augustus' and Tiberius' personal friendship (see Shotter 1974 p.231; Seager 2005 p. 96). Contra, Rapke has argued that Piso was rather an opponent of Tiberius and championed the political instances of part of the Senate. Rapke 1982 pp. 61-69. Contra Bird 1987 pp. 72-75.

⁴⁶⁵ Shotter 1974 pp. 234-235.

⁴⁶⁶ Tac. *Ann.* 2,55,1.

⁴⁶⁷ Tac. *Ann.* 2,57,1.

⁴⁶⁸ Tac. *Ann.* 2,57,5.

⁴⁶⁹ In the case of the Nabatean banquet, Tacitus seems to imply that Piso was somehow jealous of the heavier and more precious crown given to Germanicus. However, the same topic appears also in the case of Athens. Piso moved a ferocious critic to Germanicus' desire for *luxus*, but behind this accusation lied a more serious attack: Germanicus was behaving not like Tiberius' heir, but as a princeps himself. Tiberius seemed to be particularly worried by Germanicus' voyage into Egypt, where the prince was received with much honor by local population. It could be however argued that the mission was part of Germanicus' routine, without subtle motivations behind.

⁴⁷⁰ Tac. *Ann.* 2,69-70. Germanicus' ill complicated the situation, and Piso openly waited to see if the young prince fell died or not. Suspecting to have been poisoned by his rival, Germanicus finally kicked Piso off the province and declared decayed their friendship.

⁴⁷¹ Tac. *Ann.* 2,78,1. The furious temperament of the Pisones appears to be a well-known trait of the entire family: Tac. *Ann.* 2,34,1-7; 2,43,3; 4,21,1-4. See also Syme 1970 p. 51.

⁴⁷² Tac. *Ann.* 2,78, 2.

legion size, but he lacked the equipment: the result was a poorly armed troop, unable to challenge the Syrian legions in a pitched battle⁴⁷³.

The direct confrontation between Piso's soldiers and the loyalist forces ended quickly when the Cilician auxiliaries broke their position and ran to the safety offered by the stronghold of Cilician Celenderi⁴⁷⁴.

Piso and his son, who sided with the father during this unfortunate adventure, came back to Rome, where they faced the trial and met their doom⁴⁷⁵.

For the purpose of the present topic, the battle between Pisonian forces and Tiberius' loyalist force represents the most interesting passage. Once again, the superior equipment and discipline of regular troops proved the decisive factor on the battlefield, but Piso was an experienced governor and commander and for sure the lack of proper military equipment was not a consequence of his incompetence.

Evidently, and despite the great peril of his situation, Piso was not able to provide enough armours and weapons for his soldiers. Tacitus could have exaggerated the situation, highlighting the use of agricultural tools and other improvised to a dramatic effect to the situation, but the shortage of weaponry was real and sealed the doom of Piso and his sons. Also the Cilician warriors offered by the local dynasts and by the small chiefdoms of the region were apparently so poorly equipped to root immediately after the first stages of the battle.

Cut out from the Syrian legionary bases, in a hurry and in a desperate need, Piso found himself in a region relatively far from the frontiers area and without a dense urban texture: evidently, no weapon storages nor large workshops were active in that part of the Roman world. Settled in a wild region of the Empire with steep mountains and rocky coasts, the Cilicians were, less than a century before the events narrated, infamous pirates⁴⁷⁶ and Tacitus himself stressed the very strong position of the Celenderi's castle, naturally fortified and hard to take by force. There were more reasons to have that part of the world de-militarized, and even if we don't have any information about weapons confiscations among the Cilicians it seems likely to presume that, as in other cases, the imperial authorities carefully over-watched the situation.

The case of the Pisones is particularly noteworthy in his comparison with the rebellion of Florus and Sacrovir: while the uprising Gauls could rely at least on the huge urban settlement

⁴⁷³ Tac. Ann. 2,80,3.

⁴⁷⁴ Tac. Ann. 2,80,4.

⁴⁷⁵ Seager 2005 pp. 94-100 for an account of the trial.

⁴⁷⁶ Tac. Ann. 2,80,1.

of Augustodunum, and had more time available to prepare their revolt, the Pisones had no chance to oppose a strenuous resistance.

A richer and more densely urbanized province had a completely different potential in this respect. During the confused events that led to the fall of Nero, Macer, the legatus of the *III Augusta* in Africa Proconsularis, revolted after Galba showed his intentions and was able to recruit and arm a legion, the I Liberatrix, that he used to occupy Carthage. He was then planning to bring war in Sicily, arguably aiming to control two of the more important grain producer areas of the empire, but he failed to align himself to Galba and he ended up being killed as a traitor⁴⁷⁷.

Despite his attempt to seize power proved to be an unsuccessful one, the case of Macer is noteworthy nevertheless. Being a legionary *legatus*, Macer could fully exploit imperial infrastructure and administration: he probably had competent officers under his command, manpower and economic resources to successfully equip at least one legion. A non-common and particularly favourable platform from which claim the imperial throne or sustain a political claim.

In every case, the enemies of the imperial order were rapidly crushed, but this was not the case of the Jewish revolt started under Nero, arguably the most successive attempt of this type during the first imperial age.

Fortunately, the events have been carefully narrated by Flavius Josephus and are relatively well known and accessible to contemporary researchers.

Once again, the lack of proper equipment represented a problem for the rebels against a better trained and equipped regular army. Josephus seems to have been particularly interested in military equipment, showing a surprising concern for how the rebels and the Roman army were equipped⁴⁷⁸. He carefully noted, for instance, that Herod's army, well equipped and trained and

⁴⁷⁷ The history of Clodius Macer is globally poorly known. According to Tacitus *Hist.* 1,73, Nero sent his mistress, Calvia Crispinilla, in Africa, but the purpose of the mission is not completely clear. It is known that Rome suffered of a serious famine during the year AD 68, and when a cargo arrived from Africa full of sands for the emperor's arena instead of grain, the civil population was on the verge of the uprising Suet. *Nero* 45. It has been debated if Nero asked Clodius Macer to block the shipment of grain to cause the famine, in order to exploit the situation to prostrate his opposition and control the city, or instead if Calvia pushed Macer to the revolt, and the *legatus* occupied Carthage to exploit a strong position from where it could threaten the imperial power. See Bradley 1972 pp. 451-458; Morgan 2000a pp. 467-487, Morgan 2000b pp. 210-222. Details concerning Macer's policy can be deduced from the coins he minted during his short period of power, Hewit 1983 pp. 64-80. Macer apparently aimed to control Africa Proconsularis and Sicily as well, controlling grain shipment to Rome in this way, and successfully recruited a legio I Macriana to reinforce his army. Clodius was in the end killed and his army disbanded by Galba and recalled in service by Vitellius (Tac. *Hist.* 4,49; *Hist.* 2, 97).

⁴⁷⁸ Josep. Flav. *Bell. Iud.* 3,70- 97.

with a certain experience in fighting alongside the Romans, had a huge advantage against the “brigands” who supported the claims of his rival Antigonus⁴⁷⁹.

Josephus highlighted more than once the difference between Herod’s forces, that comprised many Roman elements sent in his aid by Marcus Antonius, and the lightly armed bands of the supporters of Antigonus, who did not have a proper military organization.

Brigands were a well known problem in the area, and local powers often faced them and tried to solve the situation using the force. The case of the *sicarii* deserves a further mentions considering the impact they had on the society of the period.

Sicarii, according to Josephus⁴⁸⁰, stroke their victim in public places, murdering them with knives and blades concealed under their vests and then disappearing in the crowd, camouflaging themselves with the witnesses. The use of daggers was determined by their peculiar way to act, they needed weapons small enough to be hidden under the cloth, but this approach could also have been chosen because it was extremely efficient and required simple weapons instead of expensive and hard to find military equipment to succeed.

When the confrontation on the field became inevitable, the Jewish rebels found themselves in a desperate need of good weaponry. Despite the lack of military equipment, Jewish rebels managed to defeat the royal soldiers who were garrisoning Jerusalem by outnumbering them⁴⁸¹. Once again, the *sicarii* fought armed only with knives, but the rebels needed better weapons to have a chance against more heavily equipped foes. Exploiting the favourable momentum, the rebels, led by Menahem, stormed the fortress of Masada and opened the former Herod’s armoury. Suddenly, the rebel forces could count on a core of well-armed warriors, some of whom formed the bodyguards of Menehem himself⁴⁸².

Josephus carefully noted from time to time the equipment available to the rebels, realistically describing the situation and explaining how the rebel leaders faced the problem. The inadequacy of the Jewish army became more evident during the assault of the Antonia fortress, in Jerusalem. The lack of siege equipment brought the operations to a stalemate, and even direct assaults to the rampart resulted in heavy loss for the rebels evidently due to poor defensive equipment, since the defenders were able to repel every attack hurling projectiles from above⁴⁸³. The keep was ultimately taken when the royal garrison accepted a safe passage and

⁴⁷⁹ Josep. Flav. *Bell. Iud.* 1,49.

⁴⁸⁰ Josep. Flav. *Bell. Iud.* 2,252.

⁴⁸¹ Josep. Flav. *Bell. Iud.* 2,425.

⁴⁸² Josep. Flav. *Bell. Iud.* 2, 408.

⁴⁸³ Josep. Flav. *Bell. Iud.* 2,435.

the Roman soldiers subsequently retreated to more defensible positions. The imperial camp was sacked and destroyed⁴⁸⁴.

Roman counterattack led by Cestius resolved in a rout: according to Josephus, the imperial general arrested the assault on Jerusalem for unclear reasons when the city was ready to fall in his hands and commanded a strategic retreat to consolidate his position before renovating the attack⁴⁸⁵. The rebels continuously engaged the rear-guard, tormenting the Roman army, and kept following Cestius without engaging a real pitched battle⁴⁸⁶.

Weighted down by the baggage train, Cestius abandoned many supplies to the enemy but refused to leave behind the artillery pieces and the projectiles: the Jewish rebels did not have war engines, nor could they easily produce them, and the imperial general intended to conserve his advantage over the enemy⁴⁸⁷.

The uprising in *Palaestina* was incredibly successful, but elsewhere the rebels had more difficulties. In Alexandria tensions between the Jewish community and the Greek one escalated into a violent confrontation and the imperial governor ultimately decided to employ the vast military resources under his command, the bulk of which were the two legions garrisoned in the town and two thousand soldiers recently came from Africa to join the war in *Palaestina*. The rebels opposed a strenuous resistance, holding firmly their neighbours for a while. The confrontation developed in a direct battle in the end, when the Jewish rebels formed some improvised ranks and tried to resist the Roman charge. Difficulties in finding weapons emerged again: the better armed among the rebels occupied the centre of the formation, but had no hope to resist against the legions and the Jewish battle line rapidly broke⁴⁸⁸.

Some notable elements emerge in the account of the first stages of the rebellion. Under the supervision of the Empire, Judea was carefully ruled by the kings who managed somehow to effectively control the weapons among the civil population. The absence of weapons in Jerusalem is noteworthy: kings' weapon storage was secure in the heavily fortified stronghold of Masada, where it could be easily guarded against an internal or an external threat. The ancient army of Herod was evidently not particularly large if many of the rebels were still lightly armoured during the siege of the Antonia fortress and the subsequent fights against Cestius' army.

⁴⁸⁴ Josep. Flav. *Bell. Iud.* 2,430.

⁴⁸⁵ Josep. Flav. *Bell. Iud.* 2,439-440.

⁴⁸⁶ Josep. Flav. *Bell. Iud.* 2,546.

⁴⁸⁷ Joseph. Flav. *Bell. Iud.* 2, 553.

⁴⁸⁸ Joseph. Flav. *Bell. Iud.* 2,493-496.

Despite the turbulent city of Jerusalem was relatively unarmed, and this could explain why the *sicarii* developed their peculiar guerrilla warfare, there were clearly enough workshops to equip the rebel army in case of need.

Exhausted the enthusiasm of the first moments of the war, the rebels retreated to their capital and started preparing themselves for the imminent imperial counterattack, probably knowing that the confrontation would rapidly turn into a long war of attrition.

Many towns and urban settlement started to produce arms for the rebels⁴⁸⁹. In Jerusalem, in particular, many workshops started producing military equipment and pieces for war engines to defend the city against the imperial forces⁴⁹⁰.

Evidently, the lack of weapons among the civilians was not due to the absence of workshops or manufacturing centres but rather to an efficient control by local and imperial authorities. Despite Jerusalem was bursting out of activities and preparations, producing and training an efficient army required time, time that the Jews did not have enough.

The assault to Ascalona put in evidence all the deficiencies of the rebels' army: the Jewish soldiers were lightly armed and unexperienced, their troops appeared to be not well organized on the battlefield and struggled to face the disciplined infantry and cavalry of the Romans.

The equipment of the rebel soldiers remained lighter during all the war and despite the huge mobilization of the Jewish communities, and the experience slowly matured in combat, they never managed to field an army that matched the highest standard of the imperial one. The fact could provide an insight on how difficult was to form a professional army at the time, especially without the bureaucracy, the resources and the infrastructures of a state.

Despite the lighter equipment, Jewish soldiers could prove effective on the battlefield. During the siege of Iotapata, Josephus adopted a "hit and run" tactics, commanding his soldiers to attack Roman trenches and retreated without engaging mass fights: because the rebels had much lighter equipment, imperial heavy infantrymen could not pursue them and the Romans resolved to repel their assaults with a barrage from their Arabian archers and other skirmishers⁴⁹¹.

The harsh comparison between the rebels, generally defined brigands by Josephus, and the Roman soldiers appears to be as a sort of *fil-rouge* of the whole account. The *Sicarii*, the *Zaelots* and all the other factions and peoples that joined the revolt constantly experienced a

⁴⁸⁹ Joseph. Flav. *Bell. Iud.* 2, 583.

⁴⁹⁰ Joseph. Flav. *Bell. Iud.* 2, 649-650.

⁴⁹¹ Joseph. Flav. *Bell. Iud.* 2,207; 211-212.

tactical inferiority on the field, suffering heavy losses and defeats in multiple occasion due to the general disorganization of their forces⁴⁹².

Weapons were possibly more common in the countryside than in urban towns. Brigands infested the country and, in order to defend their property and their lives, the wealthiest men of Iudea armed their slaves against them⁴⁹³.

Apparently, citizens who inhabited the urban settlements, even the largest in the region, were relatively unarmed in comparison. The Jewish community of Alexandria was not the only one to have been slaughtered by the Roman in consequence of its rebellious behavior, also the Jewish population of Cyrene, incited by a certain Ionata, was massacred by the imperial forces while attempting a revolt⁴⁹⁴.

Also the citizens of Jerusalem, the propulsive heart of the revolt, were unarmed in comparison to the more aggressive factions. According to Josephus, Jerusalem was torn apart by the rivalry of the two main factions during the siege: from one side, Simone had ten thousands men and thousands of Idumeans under his command, on the other side, Iohannes had many Zaelots among his ranks but less supporters in general, and he firmly held the temple area, that was heavily fortified⁴⁹⁵.

The rest of Jerusalem population were somehow caught in the mid of this internal war, often robbed or even slaughtered by one of the two factions⁴⁹⁶. The Idumeans however entered the city from the countryside, it logically follows that only Iohannes' men and the Zaelots were armed inside the capital, and they surely represented a relatively small part of the citizens.

The case of the Idumeans is particularly interesting. Josephus made numerous reference to "brigands" roaming the countryside⁴⁹⁷, but Idumeans were not among them, despite Josephus presents them as violent and savage people⁴⁹⁸.

Historically characterised as a frontier region, Idumea was not only a region plagued by brigands and *latrones*, but also a land wherein veterans from kings' armies were settled and

⁴⁹² Joseph. Flav. *Bell. Iud.* 3, 307-315 (massacre of the Samaritans who were on the verge to join the rebellion); *Bell. Iud.* 4, 419-425 (battle of Bethennebris).

⁴⁹³ Joseph. Flav. *Vita* 28.

⁴⁹⁴ Ionata reached Cyrene when the revolt was already exhausted and was almost defeated, thus the most prominent men of the community denounced the situation to the authorities, who hastily proceeded to crush the uprising: during the confrontation, the mob appeared disorganized and almost unarmed: Joseph. Flav. *Bell. Iud.* 7, 439-440.

⁴⁹⁵ Joseph. Flav. *Bell. Iud.* 5, 248-251.

⁴⁹⁶ Joseph. Flav. *Bell. Iud.* 4, 573 (civil population, unarmed and undefended, called Simone and his men against the Zealots lead by Iohannes); 4, 309-333 (Zaelots and Idumei fought among them but the Idumai attacked also the civil population, killing and slaughtering many citizens); 5, 98-105; 5, 439-441 (the clash between Iohannes and Simone was polarizing the citizens, who joined in turn one faction or the other one)

⁴⁹⁷ Joseph. Flav. *Bell. Iud.* 3, 138 for instance.

⁴⁹⁸ Joseph. Flav. *Bell. Iud.* 4, 231.

border militias were organised⁴⁹⁹. In comparison to other rebels, Idumeans appeared indeed better equipped and represented more formidable foes, resembling a more “standard” army in many respects.

Evidently, royal and Roman authorities managed to impose a firm control over weapons proliferation in Jerusalem, assuring somehow that the vast majority of citizens were unarmed and that few of them could amass military equipment in huge quantities.

Blacksmiths, swordsmiths and other artisans were for sure present in the city and were able to craft military equipment in some extents: the lack of weapons among the citizens could perhaps be explained, as it has been tentatively prosed before, considering that workshops produced mainly on commission, reducing in this way the possibility of gather many weapons.

Josephus noted further that the internal war between the different rebel factions stopped the production of equipment and defensive measures, assuring a huge advantage to the Romans: Vespasian himself, in a dramatic speech to the troops, highlighted the lack of preparation among the defenders⁵⁰⁰. The quote stressed the importance of a constant flow of military equipment in war and it can be considered a proof for the phenomenon of attrition known in modern warfare but generally simply assumed or not discussed for the ancient history.

Flavius Josephus’ historical work represents the best available account for what had been one of the larges revolt in the Roman empire, proving therefore to be a vital source for this kind of studies.

In general, it appears clearly that rebels greatly struggled against the disciplined and superiorly armoured imperial legions: even after years of preparation and with the possibility to exploit highly defended strongholds that once were occupied and equipped by a well-organized kingdom, the Jewish rebels never arrived to field a completely functional army.

Despite the loss of details, it could be concluded that control over weapons distribution, in particular in key and densely populated urban areas, was effective: the uprisings were unsuccessful in Jerusalem, under the formal authority of kings but with a Roman garrison, and in Cyrene as well not only because of the numeric strength of the Roman garrisons but also because of the absolute lack of proper equipment.

Surprisingly, we have arguably less information for the 2nd century AD, partially due to the loss of many literary sources of the period. The Bar-Kochba rebellion under Hadrian, that involved again the Jewish communities settled in the eastern part of the empire, represented one of the

⁴⁹⁹ Gihon 1967 pp. 27-42.

⁵⁰⁰ Joseph. Flav. *Bell. Iud.* 4,374. See also *Bell. Iud.* 4,45: Romans win their battle thanks to their superior *disciplina*.

major engagement at the time: to deal with the uprising, Hadrian was forced not only to dispatch many troops and legions in the Syrian war-theatre, but also to recall his best general from Britannia and sent him in the East⁵⁰¹.

Despite its evident importance, that lasted many years and required a huge effort to the empire and its armies, only Cassius Dio, whose work is known for this part in the *excerpta* collected and edited by the byzantine monk Xiphilinus, provided us with a brief account of the war. Because of emperor Constantinus XI's scarce interest in military facts⁵⁰², Xiphilinus' epitome focused more on anecdotes: due to the lost of the original source, and in many occasions because of the absence of comparable accounts, it's not always clear how much Xiphilinus added to his source, especially for the most curious and "sensible" detail.

Carefully avoiding a detailed description of military operations, Xiphilinus mentioned however a highly useful detail about rebels' preparation for the uprising. According to Xiphilinus, who's supposedly citing Cassius Dio, the empire required military equipment from local weaponsmiths and armoursmiths but the Jews, already planning the revolt, produced weapons and armours of such bad quality that the Roman army refused to buy the products and the rebel forces slowly equipped themselves⁵⁰³.

I saw no reason to discard the passage as non-trustworthy: Xiphilinus would not have added a military anecdote, knowing that tastes and desires of his public were not warlike oriented. If he kept the information, it was probably because the whole account recalled the style and purpose of *stratagemata* books of the past, collections of military stratagems that exalted shrewdness and trickery. The principle at the base of the anecdote, the very idea of a quality control on weaponry produced or purchased by the army, is realistic and has a useful reference in the already quoted Carlisle tablet, in which weapons used by the soldiers have been labelled as conform to prescription.

If considered a quote from the original Cassius Dio's work, it could be used to understand how the imperial army was supplied of military equipment at least in Syria during the first half of the 2nd century AD. Civil workshops were massively involved in the supply chain: only numerous local artisans could match the demand of the imperial army. The anecdote is not completely clear, it seems strange that imperial administrations did not react since rejecting entirely, as the passage seems suggest, weapons stocks would have left Roman soldiers in

⁵⁰¹ Eck 1999 pp. 76-89.

⁵⁰² See Mallan 2013 pp. 610-644.

⁵⁰³ Dio 69, 13- 14,3.

desperate need. It looks more possible that only part of the stock was from time to time rejected, albeit it ultimately proved to be a part substantial enough to equip the rebel army.

It also makes evident that the army needed a constant flow of weapons even in relatively peaceful periods. Roman army was evidently not able to recycle and re use entirely the military equipment, for example by passing the pieces from discarded veterans to fresh recruits. It could be also presumed a tie with Hadrian military reforms: if the emperor was implementing a changing in military equipment, the demand of weapons could have been massive for a while, boosting local economies and employing numerous artisans to satisfy the request.

If considered valuable, Dio's passage has sense only if presuming that Jewish artisans produced not only "simple" weapons, like swords and spears, but also the whole range of military equipment, namely projectiles and the expensive defensive weaponry that for so long had granted an indisputable superiority to Roman forces.

Military workshops could have thus played a minor role in this part of the Roman world, a part that knew a relatively dense urban pattern and a long state tradition, but the passage attests nevertheless that Romans relied on the civil world where possible, even purchasing huge quantity of weapons and armours on the market. Local producers evidently knew how to craft the particular pieces needed by the Roman army.

An interesting passage deserves to be mentioned in this moment. Suetonius indulges in some rumours spread when Galba finally decided to enter the fray for the imperial power and, among other omens that foretold the success for the usurper, reports that a cargo-ship from Alexandria had been seen arriving in Spain, near a town that Galba was preparing as his head-quarter for the upcoming war, with a stock of weapons and armours but with no men on board⁵⁰⁴. Its arrival was providential indeed because Galba, who commanded a province with only one legion and few auxiliary troops, was recruiting as much soldiers as he could.

The fact that Suetonius spoke of cargo full of weapons implies that such ships were relatively common at the time. The tale is clearly fictional, and should not be over-read, but it attests nevertheless that private or public productions of military equipment existed during the 1st century AD and were capable of fill relatively large demands.

The problem of know-how and skills lead to a parallel topic that had a certain importance in Roman historiography from the 1st-2nd century AD onwards. Romans were comprehensively jealous of their military technology and slowly started appreciating it as a decisive winning

⁵⁰⁴ Suet. *Galba* 10.

factor in war. However, we don't have direct information about how Romans protected their superior technology, but various authors and sources offer an insight on the situation.

As it has been mentioned in the previous pages, field and siege artillery required highly skilled and well-trained engineer to be projected and built. Roman army had trained officers and engineers to deploy artillery in the field, but many enemies of the imperial order did not have the same possibility. The intense use of field artillery planned by Arrian confirms that those weapons could assure the complete supremacy to Roman forces in case of pitched battles, and it is likely that the empire tried to preserve this advantage as long as he could. Somehow, the empire managed to conserve the lead in this domain, but deserters and traitors could threaten the situation. During the first century of the empire, both rebels from within the empire and external enemies did not have the same equipment of the Romans and still adopted their traditional fight style or, in case of desperate need, fought with makeshift means. In this earlier historical context, deserters appeared as potential threat because of their military training, but they were more a political problem than a strategical one. Deserters could for instance sustain the claim of a usurper or back the rebellious acts of their commander if situation required. Piso in Cilicia was reached by deserters of the Syrian legions, according to Tacitus⁵⁰⁵, because of his popularity among the soldiers and his reputation as a competent commander. Florus and Sacrovir tried also to recruit Gallic soldiers among the auxiliary troops, but failing in this project doomed their uprising⁵⁰⁶.

The revolt of Iulius Vindex is less clear on this aspect. Vindex was commanding a "defenceless province" according to Tacitus⁵⁰⁷, but his army was considered of one hundred thousand men strong in the speech reported by Plutarch⁵⁰⁸ and pronounced by Vindex himself. Arguably, Vindex had the support of the élites not only of the Lugdunensis, but of the whole Gallic provinces⁵⁰⁹: without the Gallic aristocracies would have been impossible to field the large army that fought near Vesontio under his direct command. Tacitus says the whole army of Vindex had been destroyed in battle, but Plutarch, who calculated the strength of Vindex' forces in one hundred thousand soldiers, assured that "only" twenty thousands Gauls perished on the field⁵¹⁰. The gap has been variously interpreted, but it is possible that Julius Vindex was hoping to join forces with the armies of the Germanic provinces, who had their own reason to

⁵⁰⁵ Tac. *Ann.* 2,78; Tac. *Ann.* 2,79,2-3 Piso and his allies try to bribe soldiers of the VI Legion.

⁵⁰⁶ Tac. *Ann.* 3,42,1.

⁵⁰⁷ Tac. *Hist.* 1,16,2.

⁵⁰⁸ Plut. *Galba* 4,3. Vindex was ready to support Galba with such a large army.

⁵⁰⁹ Joseph. *Flav. Bell. Iud.* 4,440.

⁵¹⁰ Plut. *Galba* 6,3.

be hostile to Nero. The Gallic uprising was indeed the beginning of the end for Nero: with this first challenge to the imperial power it became evident that the emperor was losing control on the state and soon many others were ready to revolt and claim the throne for themselves.

Usurpers are in a strange spot in relation of the present inquiry because in many occasions they were previously provincial governors or commander that could exploit, as in the aforementioned case of Macer, administrative and productive infrastructure to reach their goal. In particular, when a pretender was supported by a strong provincial army he could simply turn the imperial war machine against Rome itself: obviously, the governors of most armoured provinces, where soldiers and legions were gathered in great numbers and that had probably more logistic structures, represented much higher threat to the imperial power because of their possibility to mobilize a larger and stronger army. In case of civil wars, that occurred relatively often during the history of the Roman empire, the imperial troops lost the tactical advantage against their opponents: with the same equipment and the same tactics, battles proved to be more difficult and dangerous for the Roman soldiers and civil wars had an ill reputation for being a bloody affair.

Deserters however threatened to put the Roman soldiers in the same danger even against external threats. The topic of deserters is particularly present at the beginning of the 2nd century AD, when Trajan engaged two long and difficult wars against the Dacian kingdom of Decebalus. Unfortunately, the original accounts of Trajan and of his personal physician, Crito, are nowadays lost as well as the very first life of the *Historia Augusta*, determining in this way the descent of a curious shadow over the events of one of the greatest military engagement of the imperial history. The reasons that convinced Trajan to wage war on the Dacians are not clear for the contemporary historiography. For sure, the defeats suffered under the rule of Domitian represented an open wound to the imperial pride that Trajan had to close: besides strategical and economical considerations, the emperor was compelled to offer a military answer to what appeared to be a political problem. Dio's historical work represent the main source for this war but, again, the original books have not survived and the account can be read only in the form of Xiphilinus' epitome that, due to his author's preferences, it is largely uninterested in tactical and strategical details.

There is however a topic that emerges more often than other and, because it has been preserved in all the later sources on the war, could reflect a genuine preoccupation of the imperial establishment at the beginning of the 2nd century AD. Among the many demands the

Empire advanced to Decebalus to sign a peace treaty was also the handling over of deserters⁵¹¹. The detail is noteworthy and deserves more attention. Domitian's Dacian wars ended with an arrangement between the two rival powers, the details of which had been discussed for long by contemporary researchers. Domitian recognized Decebalus' sovereignty over his people, limiting the imperial interference in the area to a more or less vague form of alliance or vassalage. Decebalus received however a military contingent of, according to Crito, fifty men strong.

The figure is however odd, and no similar unit is known in the imperial army. It has been proposed to recognize in this small unit not a combat formation but rather some form of technical support: possibly military engineers or experts sent to reinforce the Dacian army improving fortification, training and equipment of Decebalus' soldiers⁵¹². Dacians kingdom was protected by impressive defensive works, among which were particularly strong towers large enough to function as artillery platforms. Field and siege artillery required skilled engineers to be planned and built but also well-trained crew to operate them. Domitian could have sent to his new, albeit treacherous and disloyal, some military advisors to improve his army and thus secure this strategic region north to the imperial frontiers. It remains however unclear if, or why, those soldiers decided to remain among the Dacians.

The presence of Roman deserters among the Dacian army was perceived as a great threat by Trajan, who repeatedly asked for their restitution as part of the peace negotiations. Arguably a minor detail in the account of the Dacian wars, the topic of Roman deserters is however noteworthy in detailing the attention paid to military technology at the time of Early empire. Roman generals at the time of Trajan acknowledged the importance of a superior weaponry and tried to preserve their advantage against any foes. Evidently, deserters potentially threatened to steal this advantage to the Roman forcing by training enemies' soldiers and by teaching them how to fight with imperial-style equipment.

When not collaborating with external foes, deserters were nevertheless a social problem. After years in the army, those veteran soldiers knew how to fight and were ready to exploit their deadly abilities for living, turning themselves into a life out of the laws.

The case of Maternus is particularly noteworthy and exemplifies well how dangerous veteran soldiers could be when they turned to brigandage.

⁵¹¹ Dio 68,9.

⁵¹² Russu 1972 pp. 111-172.

Former soldier himself, Maternus fled the army because of some “crimes” he committed and he convinced some fellow soldiers to follow him. It would be interesting to know if they managed to flee with their own weapons, but they proved nevertheless particularly efficient: they pillaged the countryside in Gallic and Spanish provinces, destroying the fields and assaulting villages. Maternus and his band became immensely rich and started attracting more and more brigands until they were numerous enough to assault even “the most important cities”. Herodian stated even that they were at this point a real army rather than a band of brigands⁵¹³. Unfortunately, our sources do not clearly say if they pillaged weapon storages. They however stormed numerous prisons and, after having freed prisoners and criminals, forced them to join their rank⁵¹⁴.

Evidently, Maternus was able to equip his men and managed to find a way to live off the land, but, as clearly stated by Herodian, his warband was not strong enough to face the imperial army in a pitched battle: Maternus and his band split in smaller groups and, through different roads, reached the Italian peninsula and then Rome, where Maternus attempted to kill the emperor himself when he was betrayed and executed⁵¹⁵.

Maternus represented an extreme and exceptional case in the history of the Roman empire. Evidently, deserters’ skills and training gave to the band an immense advantage against the provincial communities but without state infrastructures they could not dare to face the imperial army in a pitched battle. The host of deserters and brigand remained something in between a proper army and civil society.

Maternus’ tale could also be seen as a sign that something was slowly changing during the 2nd century AD. The imperial establishment had managed to effectively assure the monopoly of violence, fielding the supreme armed forces, until that moment, but for the first time the authority of the princeps was challenged not by a commander, who could rely on vast forces and an extensive network of infrastructures and productive facilities, but from a more or less spontaneous movement.

Compared to the unsuccessful Gallic rebellions of the past, Maternus’ tale, albeit it could have been exaggerated by Herodian in his extent, proved to be surprisingly successful. The case maintains a noteworthy comparison with the events of the 3rd century AD, particularly with the years of the so-called military anarchy, when centrifugal forces successfully challenged the central authority and managed to threaten the Roman order for more than fifty years.

⁵¹³ Herod. 1,10,1.

⁵¹⁴ Herod. 1,10,2.

⁵¹⁵ Herod. 1,10,3.

In this lap of time, the provincial world evidently underwent to some changing that, despite having be neglected by literary sources, could have deeply altered the nature of the Roman empire.

5- The missing link.

The 3rd century AD as a transitional moment.

The end of the Severan dynasty, whose last member was assassinated in AD 235 by Maximinus Thrax, coincided with the start of a long and complex period of troubles and political uncertainty globally known in modern historiography as “military anarchy”. The rise of Diocletian to power is conventionally interpreted as the end of this age of usurpers and seemingly endless wars. The empire that arose from the ashes of the “military anarchy” presents many interesting new features for contemporary historians, and it is generally considered that the “late antiquity” started with Diocletian. The Roman state undoubtedly underwent some deep and radical changings through these 50 years of military and political weakness, but how this changing was produced, or even if it was produced, it is unclear: evidently, something that happened during the 3rd century AD forced the Roman empire to change, to evolve and to adapt.

For the purpose of the present inquiry, the 3rd century AD represents a meaningful turning point. During the first two centuries of the imperial history, as it has been argued in the previous chapters, civil productions progressively shaped their own role in military logistics, ultimately being placed side by side with the military *fabricae*. Some urban settlements became logistics hub of primary importance, and many towns probably produced weapons and equipment for the army, and we have few and scattered information about special occasions during which communities of the empire were called to produce in much larger quantity for the army but, as far as we know, for a limited period of time. We have however no clear indication about an organised system in which the Empire directly played a role in the production of the equipment. It seems more likely that the empire regulated the affair from a certain distance, relying on private artisans and entrepreneurs and probably regulating quality standards and form.

The implementation of military reforms, whose nature remained unfortunately known in vague details, during the 1st and the 2nd century AD implied a certain state control over production and a central expenditure policy. The imperial establishment could impose the adoption of a certain equipment and could implement a military reform by commissioning the production of weapons and armours, as well as the emperor could rely on the civil society to produce the equipment needed for a freshly recruit unit, but this form of control did not necessarily take the form of a direct involvement in the productive chain. Despite the existence

of state workshop and private manufactures would have had a similar outcome (the production of enough weaponry for the Roman army even in time of massive warfare and during major operations), it can not simply be assumed that the Empire had developed already during the first centuries the complex system of state controlled productive centres that it is known for late antiquities.

Evidently, the events of the 3rd century AD played a determinant role in the evolution that ultimately led to the establishment of the *fabricae* for mass production known by the *Notitia Dignitatum*.

But the 3rd century AD represents nevertheless a fascinating historical problem for the study of the Roman empire. In comparison with other moments of the Roman history, this age remains rather obscure and largely undocumented especially in his political and military aspects⁵¹⁶. Generally known and considered as a period of troubles and difficulties, the very notion of crisis appears nevertheless to be blurred and of not easy application in this case.

There is no consensus nor on the duration of the crisis nor on its nature. For instance, it is interesting to note that the 12th volume of the Cambridge Ancient History of the 1939 bears the title of “The Imperial Crisis and Recovery: 193-324 AD⁵¹⁷”, implying that the crisis started somehow with the Severan dynasty, but a chapter of the same collection, written by Alföldy, proposed a different cronology for the crisis: “The Crisis of the Empire 249-270⁵¹⁸”.

If the political and military difficulties of the second half of the 3rd centuries AD, when the whole empire seemed to fell apart for usurpations and huge defeats suffered on the battlefield, are arguably undeniable, the whole notion of crisis has been questioned in multiple occasions.

Alföldy argued that men and women who lived during the troubled years of the third century had a clear perception of the crisis and feared the imminent collapse of the Roman world⁵¹⁹. Relying mostly on Christian authors⁵²⁰, Alföldy reached the conclusion that Roman political and economic structures was not only on the verge of collapse, but also that the limits of the system itself became evident for contemporary observers. Without offering a clear definition of crisis, this *stasis* of the empire assumes the trait of a deep deterioration of the imperial structures under the unbearable pressure of external and internal threats.

⁵¹⁶ Rostovzev 1976 pp. 507-513.

⁵¹⁷ Cook, Adcock, Charlesworth and Baynes 1939.

⁵¹⁸ Alföldi 1939 pp. 165-231.

⁵¹⁹ Alföldy 1989.

⁵²⁰ See for instance Alföldy 1974 pp. 89-11.

Strobel has more recently conclude in the opposite sense⁵²¹. For the German scholar, literary sources reflected and lamented specific episodes of the Imperial history and were paying attention to contingent situation rather without judging the condition of the whole empire. According to Strobel, a crisis can be properly recognised only *a posteriori* and it should have been therefore very difficult for contemporaries to clearly figure out the political and economic picture of the time.

If the notion of “crisis” has assumed a more central place in the argument of Alföldy, many other scholars have argued that the whole theoretical concept does not fit the reality of the 3rd century AD. Due to the differences between the various provinces of the empire, it has been proposed to speak of “crises”, implying a more geographically limited meaning of the term, rather than a global crisis that affected the empire. Provinces far away from the troubled frontiers, where the endless state of warfare progressively eroded the social and economic texture, knew not only a more stable period of peace but also a certain wealth.

Some urban settlements could also have benefitted of the situation: large concentration of soldiers represented for sure an interesting market for many kind of productions, and emperors, or usurpers, who chose a city as headquarter, were surely prepared to locally invest their resources.

Archaeological evidences also provide a blurred image of the period.

Witschel, who have focused his attention on monumental projects funded by the imperial establishment in Italy, has concluded that there is no clear evidence for a third century crisis⁵²². The central government slew down in monumental projects, restoring and building slightly less than in previous century but the difference is not appreciable enough to justify the assumption that the third century had been a period of economic stagnation. The theoretical notion of crisis has been variously questioned by different scholars, its place apparently being taken by a slower and progressive development and changing, as proposed for instance by Potter in his work on late antiquity⁵²³.

Drastically changing the point of view, in a perspective that partially resembles the *long durée*, risks however to shade the unique peculiarities and the specific nature of the third century AD. *Contra* this minimizing interpretation, other scholars have pointed out the manpower shortage that crippled the imperial establishment and its power during the period in question. In this case, the focus has been put on the possible lasting effects of the Antonine plague. Because of

⁵²¹ Strobel 1993.

⁵²² Witschel 1999 *passim*.

⁵²³ Potter 2004 *passim*.

the scarcity of documents available, evaluating the reach of the pestilence is not an easy task for contemporary historians. While Lo Cascio⁵²⁴ has estimated that nearly 20% of the imperial population died because of the plague, ultimately provoking the crisis of the 3rd century AD, Strobel⁵²⁵, who is also sceptic about the whole notion of crisis, has concluded that the plagued did not impacted heavily on the Roman world.

Egypt proved in this case to be a good case study. Scheidel⁵²⁶ in particularly has studied the case, focusing his attention on land parchments in order to analyse the fluctuation of prices during and after the plague. Bagnall⁵²⁷ has subsequently re-worked on the same material highlighting that price fluctuation of land followed the same model of price fluctuation in Europe after the Black Plague of the Middle Age, implying as a consequence that the plague seriously impacted the ancient world.

Those conclusions have been however questioned by other authors, Greenberg⁵²⁸ among the others, who challenged the very idea that the plague killed millions all over the Roman world. A relevant theoretical problem lies exactly in a comparative model that ties together the Antonine and the Black plague. Europe after the epidemy showed decisive signs of recovery and the terrible years of pestilence were followed by a period of prosperity and of cultural and economic growth. Nothing comparable happened in the Roman world and, *au contraire*, the empire appeared to be doomed⁵²⁹.

Because of this difference in the aftermaths of the two pestilences, every historiographic model derived by the much more documented case of the Black Plague struggles and fails in understanding and predicting the subsequent decay of the empire.

Many scholars have therefore risen doubts about the deadly effects of the pestilence, rather considering the Antonine plague as a more limited phenomenon.

For the purpose of this topic, it should be considered that a shortage on manpower, as it has been prospected by Boak⁵³⁰ for instance, could have crippled the logistic organization of the empire and disrupted the productive chain. The absence of an agreement on those points complicates the present inquiry, but the adoption of a theoretically stronger definition of crisis could resolve the impasse and allow the present inquiry to continue.

⁵²⁴ Lo Cascio 1991 pp. 701-731.

⁵²⁵ Strobel 1993 *passim*.

⁵²⁶ Scheidel 2002 pp. 97-114. See also Minnen 2001 pp. 175-177. Contra Bruun 2003 pp. 426-434.

⁵²⁷ Bagnall 2000 pp. 288-292; Bagnall 2002 pp. 114-120.

⁵²⁸ Greenberg 2003 pp. 413-425

⁵²⁹ Bruun 2007 pp. 206-207.

⁵³⁰ Boak 1955 *passim*.

The pioneering work of Koselleck⁵³¹ has masterfully detailed the evolution of the concept of crisis itself, debating and analysing how it has been presented during the centuries. The word itself derived from Greek *κρίσις*, in its turn rotted the verb *χρίνω* which had the meaning of “to separate/to divorce” but also “to make a choice, to judge or to decide” and also “measuring someone, to fight⁵³²”.

Quite surprisingly, the concept evolved until being used in a medical sense: it indicated both diagnosis and prognosis, putting in particular evidence a moment in which the sickness has reached a crucial point for the patient. At that moment, the physician was forced to intervene and only if its action was correct a life could be saved.

This double meaning, of judgement and of action, defined the concept in later ages. Some authors have conserved the medical use, thus using the term to indicate a crucial moment or situation in which a decisive action is required. In this *nuance*, the idea of crisis has been declined in various way and applied to economic, political and military history.

Following a more or less parallel course, also the idea of crisis as supreme judgement has been maintained. In this second case, the influence of Christian culture, in which the Apocalypse and the Judgement represent *de facto* de supreme crisis, has played a major role in reshaping the concept⁵³³. The aforementioned approaches shared a definition of crisis as a transitional moment in which the course of decisively change. The concept bears a further and logic development in considering the crisis as permanent condition during the human history or an immanent but recurrent state that is from time to time resolved by actions bearing a large impact over the whole history. Ultimately, the concept of crisis could more simply indicates an immanent transitional phase at the end of which the society as its whole appears to have been substantially changed.

The concept of crisis as a judgement, wherein social structures were tested and stressed until their breaking point, forces however an historian to take a strong stand and formulate in its turn a judgement over a specific condition. This will ultimately create a discrepancy between the observer, who describes a past crisis according to his own categories, and who lives the supposed crisis perhaps without recognizing it.

The idea of transitional change from a condition to another is apparently intuitive and easily to apply, but structural changes in historical societies are progressive and continuous. In this second case, it appears hard to distinguish and define a real crisis in opposition to a slow,

⁵³¹ Koselleck – Richter 2006 pp. 357-400.

⁵³² Koselleck – Richter 2006 pp. 358-360.

⁵³³ Koselleck – Richter 2006 pp. 370-380.

but normal, development. An abrupt and sudden event could however stimulate or even impose a certain change in a society or in one of its segments, but those events are not necessarily negative *per se*. Military reforms discussed in previous chapters, for instance, imposed a rapid development of Roman military forces but, since the term brings a negative bias, it seems odd to define those moments as crisis rather than natural, even if hastened, developments. It seems therefore impossible to escape the trap of subjective judgement in crisis analysis, but some ideas that lie at the heart of the concept may be usefully applied to the conditions of the empire during the 3rd century AD, in particular to the aspects the imperial society that are of highest interest for the present topic.

However, at least three meanings of crisis fit in describing the political and military situation of the empire during the “military anarchy”. In the case of the Roman empire after the Severan dynasty, an abnormal pressure along the frontiers have stimulated a certain reaction by the imperial authority: it is hard to establish nowadays if this pressure was not different, in nature as well in strength, by what the empire had experienced before, but it is hard to deny some consequences of the prolonged and difficult state of warfare that interested the western provinces for more than 50 years. As a result, the political and military sub-community of the Roman society started crumbling and falling apart. As Braudel would have argued, it probably did not change a lot for small tax-payers in the deepest part of the Roman world, but it meant a lot for not only for the political élites, who were compelled to take a side during the attempts of the various usurpers to seize the supreme power or to create a new political entity for their own.

As it has been argued many times, a crisis do not necessarily involve every aspect of the society: in the present case, it looks like only a segment of the Roman society was directly stroke by the new events, albeit the segment involved represented the political élite and, because political power was strongly connected with military commands, also the army from the highest officials to the lowest ranks.

The Roman establishment struggled in maintaining the unity of the empire and, at least from modern historians’ point of view, was on the verge of collapse. In the words of the crisis: the empire could survive as political unity or decade into multiple entities born and grown upon its ruins. As in a proper crisis, a part of the Roman world was treated to change or disappear. If the definition of crisis as a period of radical and coerced changing appears to fit the historical period, also the ideas of judgement and action have their place in the present discussion. Forced in an uncomfortable situation, not only the imperial establishment had to take serious

decisions, but also a galaxy of characters, each one in a position of power, were called to take a side and their decisions deeply influenced the period to come. It cannot be denied that the contemporary witnesses probably did not fear for the imminent fall of the Empire, but they probably had a certain perception of the immense difficulties that the empire was facing.

Maximinus Thrax, who conventionally is considered to have started the crisis, took a radical decision in seizing the power by killing Severus Alexander⁵³⁴, issuing a season which nature was perceived as radically different by our sources.

While Herodian, who wrote few decades after the reign of Maximinus, saw a barbarian who for the first time succeeded in seizing the imperial throne, thus inaugurating a long age of decadence and political struggle⁵³⁵, it is possible to individuate a literary tradition which proposed a different explanation.

This secondary narrative line, arguably rooted in the Latin tradition of *Kaisergeschichte*, highlighted a different element of disruptive novelty: Maximinus was the first emperor to have grown through the military ranks, the first humble soldier to have reached the imperial throne and the precursor of a long series of generals and commanders at the head of the state⁵³⁶.

Ancient historians thus recognised, perhaps exaggerating it, a radical change in the nature of the supreme political power of the empire by stressing the renovated importance of the army and its commanders. The last words of the dying Septimius, who advised his heirs to keep the army happy to conserve the power⁵³⁷, became grim and prophetic for the future of the empire. If it is impossible to speak of a complete and total “crisis” of the Empire, it is probably safe to assume that a radical changing, that can arguably be defined as a crisis, affected the establishment and forced the Roman leaders to adapt.

⁵³⁴ Herod. 6,8,1-2; SHA *Max. Duo* 7.

⁵³⁵ Herod. 6,8,1: born in a Thracian village, Maximinus was a *μιζοθάρβαρος*. A similar concept can be found in the *Historia Augusta*, where Maximinus is labelled as a *semibarbarus* (SHA *Maximin. Duo* 2,5), in Aurelius Victor *Liber de Caes.* 25,1 and in Ps. Aur. Vict. *Epitome de Caes.* 25. See also much later authors as Joan. Antioch. 164,2; Zonaras 12,15. Curiously, despite labelling Maximinus as a Thrax, the *Historia Augusta* states also that Maximinus' father was a Goth, and his mother was an Alan (SHA *Max. Duo* 25,1). A Gothic origin of Maximinus has been proposed by Jordanes also (*Romana* 281; *Getica* 175), while Syncellus (p. 681 ed. Bonn), possibly misreading the original passage from Herodianus, has attributed a Mysian origin to Maximinus,

⁵³⁶ Aurelius Victor (*Liber de Caesaribus* 25,1) presents Maximinus as a Thrax, but also the very first to have risen until the imperial throne from a humble career through the army. The *Epitoma de Caesaribus* obviously mirrored the information (25,1). Because of many similarities between Latin sources, and in particular between Aurelius Victor's work and the *Historia Augusta*, it has been argued that the information could derive from a lost source, the so called Ennman *Kaisergeschichte*. See for instance Bersanetti 1940 p. 77. It is noteworthy to signal that Christian authors generally did not stress a “barbaric” origin of Maximinus Thrax: Eutropius 9,1; Orosius 7,19; Hieronymus, *Chronicon* 2250; Cassiodorus *Chronic.* 931; Johannes Malala 12, 4-5; Eusebius of Caesarea, *Hist. Eccl.* 6, 28. Possible non ethnic- based interpretations of Maximinus' reign represent a historiographic problem of difficult solution. A forthcoming paper on the subject will be published in the *Rivista Storica dell'Antichità* with a longer debate.

⁵³⁷ Dio 76,15.

From the perspective of the present inquiry, the point is theoretically relevant: if the crisis forced a resolution, the measures taken by the government during this period should have had a long lasting influence on the Roman world, shaping the late antiquity as we know it. Unfortunately, the study of the decisions taken by the imperial establishment is complicated by the relatively poor status of available literature. Few first-hand sources have survived until present and one of the most important sources of information remains the *Historia Augusta*, whose complex genesis and mischievous information are notoriously known. A common tendency can be however highlighted and regarded as a trustworthy element: the same attention to weaponry and logistics that has been already noted during the reign of Hadrian was not only kept alive but also reinvigorated during the third century, being firmly established as an important part of the imperial concepts of power.

Describing the army assembled by Severus Alexander for his campaigns in the East, the *Historia Augusta* highlighted how well equipped was the army⁵³⁸. Severus Alexander, an emperor who despite his flaws was functionally described as a positive and rightful leader in contrast with the tyrannical usurper Maximinus⁵³⁹, was praised as a competent commander who completely fulfilled his duties.

Historia Augusta paid a great attention in emphasising his competence and provided an impressive array of details. The emperor had a complete record of army status, with the lists of every soldier still in service, and he took particular care of army logistics, prescribing the use of mules and camels for the baggage train⁵⁴⁰.

Soldiers marching through imperial provinces for long distances represented a huge organizational problem but Severus Alexander, praised the biographer, succeeded also in managing the complex logistics system and arranged a network of depots wherein supply could be stored, partially sparing locals from potential abuses and coerced requisitions⁵⁴¹. Discipline was overall exceptional in Alexander Severus' army, once again a striking element of comparison that contrasts with the despicable conditions of the Roman army under the rule of later emperors, but the attention paid to military equipment is particularly noteworthy as well. Not only Alexander took care of providing good weapons to his soldiers⁵⁴², he also carefully described Parthian super heavy cavalry style equipment to the Senate and probably motivated

⁵³⁸ SHA *Sev. Alex.* 50,3.

⁵³⁹ SHA *Sev. Alex.* 50,1.

⁵⁴⁰ SHA *Sev. Alex.* 47.1.

⁵⁴¹ SHA *Sev. Alex.* 45 in particular.

⁵⁴² SHA *Sev. Alex.* 50,3 and 50,5

its adoption among the Roman army in reason of its effectiveness⁵⁴³. The introduction of heavy cavalry and shock cavalry in the Imperial army can be dated to the early 2nd century AD and it has been mostly implemented by Hadrian⁵⁴⁴. It is therefore hardly to understand why the Senate wanted to be informed about the Parthian *clibanarii*: super heavy cavalry, deployed on the battlefield both by the eastern kingdoms and by the Sarmatian hordes, were already well known and Romans had faced it multiple times on battle.

If *Historia Augusta* passage is trustworthy, it could represent the memory of Severus Alexander propaganda. The last *princeps* of the Severan dynasty, whose military prestige was argued more than once during his reign, could have resumed some elements of Hadrianic propaganda and exalted his military leadership highlighting tactical improvements. *Historia Augusta* is noteworthy difficult to use and often misleading, but in this specific case it could have conserved a honest insight of that age.

Herodian, who was not a military expert nor particularly closed to the imperial establishment⁵⁴⁵, gave however an interesting insight about the German campaign prepared by Alexander and later personally lead by Maximinus. Praising the young Alexander for having assembled a large and mighty army⁵⁴⁶, Herodian noted the presence of many Palmirean archers and Numidian javelinmen among the imperial troops: those weapons, said Herodian, were particularly effective against the lightly armoured German warriors who, evidently, had not enough protection against this kind of wounds⁵⁴⁷.

It is possible that Herodian, who does not provide other similar insights in the rest of his work, derived his information from a previous sources, an author who was probably more competent in military matters, but the passage shows nevertheless a peculiar and perhaps new sensibility for this aspect of warfare. Javelins and bows were obviously not a novelty at the time, it is hard to believe that their role had been never appreciated before and the passage could thus attest their meditated use on the battlefield: the good general Alexander purposely deployed them in huge numbers to overcome German lines with a barrage of projectiles, exploiting a specific weakness of the enemy. Echoes of Arrian's tactics against the Sarmatians could perhaps be

⁵⁴³ SHA *Sev. Alex.* 56,5: *clibanarii* are preseted among the greatest foes the emperor ad his amry have won on the field.

⁵⁴⁴ Eadie 1967 pp. 161-173 for an account of the evolution of mailed and heavy cavalry in Roman army.

⁵⁴⁵ Herodian has offered very few information about himself in his work, and his career is overall unknown. In 1,2,5 Herodian states that he had worked for the state, but it is unknown which office he held. See also Cassola 1957 pp. 213-223.

⁵⁴⁶ Herod. 7,2,2: the strong army gathered by Alexander was further improved by Maximinus.

⁵⁴⁷ Herod. 6,7,8 and again in 7,2,2

detected, being both battleplans focused on missiles instead of close combat actions, and once again the right choice of weapons appears as the decisive winning factor in an engagement.

Herodian gave however another interesting details: right before revolting and seizing the power, Maximinus, who at the time had already a renowned commander and soldier loyal to the Severan dynasty, was put in the charge of the recruits during the campaign⁵⁴⁸. The appointment is utterly strange and apparently unknown. Following a hypothesis originally advanced by Bang⁵⁴⁹, it has been supposed that Maximinus was appointed as *praefectus tironibus*: Herodian had therefore simply tried to translate in Greek a technical term that was probably not familiar to him. The title is attested in just two inscriptions but in both cases the *praefecti* are low ranks officers, respectively a centurion and young equestrian officers⁵⁵⁰, and it looks strange that Maximinus, a top-level commander and skilled general, was entrusted with such a minor appointment. Speidel⁵⁵¹ has subsequently argued that Herodian, who was openly hostile to the *mixobarbaros* emperor, deliberately attempted to diminish the importance of Maximinus' command, describing him a low officers and a demagogue who had no serious claim to the imperial throne. The future emperor could have rather put in command of *vexillationes* and detachments from the armies of the Danubian provinces. It is also possible that recruitment procedures had been implemented before the campaign, possible as a preparation for it, and therefore Maximinus was entrusted with this special command or put at the head of some newly formed contingents. Contemporary scholarship has not reached a universal consensus on this matter, every possibility should be therefore taken in consideration but if Maximinus was really preparing the recruits to the fight, perhaps only as a temporary command, it follows that this large assemble of soldiers joined the rest of the army fully equipped and ready to fight. It was not, in other words, the unit that recruits were supposed to join to provide the equipment but, evidently, a different kind of system was put in place.

War preparations became an important issue in Herodian pages, being mentioned multiple times. References are arguably vague, and Herodian did not provide many details. War preparation are generally labelled as long and difficult both when war was directed against external threats and when the empire was tore apart by civil wars. Despite his strong starting position, Severus prepared for long the war against his rival Pescennius Nigrus⁵⁵², but the

⁵⁴⁸ Herod. 6,8,2.

⁵⁴⁹ Bang 1906 pp. 300-303.

⁵⁵⁰ ILAfr 473; CIL 11, 6011 = ILS 2691

⁵⁵¹ M. A. Speidel 2016 pp. 348-349 in particular.

⁵⁵² Herod. 2,14,6 – 2,15,1.

campaign in Britain required a hard effort as well.⁵⁵³ Severus accused Albinus to more or less openly preparing his forces to wage war against his rule⁵⁵⁴ and Herodian further explains that Albinus commanded the governors loyal to him to send moneys and supply for the army⁵⁵⁵.

The overall image, that could vaguely recall some passage from Tacitus, is that of a world burning out of work, moving and investing huge amount of resources to wage war against foreign enemies or even usurpers.

Stronger the enemy, larger the preparation: Severus Alexander army sent against the Parthian demanded a tremendous effort and the whole Roman world participated to mobilize a force that could stand against the mighty Sasanid dynasty⁵⁵⁶.

Weaponry is not directly and clearly mentioned, Herodian usually refers to general provisions and supply. The desperate defence of Rome by Iulianus represents a noteworthy exception to this rule. Iulian, whose power rested mostly on the Roman garrison and on the swords of the praetorian guard, found himself in a weak position in comparison of the provincial armies and their commanders: provincial legions were more numerous, well trained and equipped than his forces⁵⁵⁷. The emperor arrived even to beg his own soldiers to take the arms and commander the whole town to start producing weapons and “everything was needed for the fight”⁵⁵⁸.

Once again, the passage in Herodian echoed older description of cities preparing weapons and equipment for an imminent campaign, but it could be nevertheless considered a trustworthy description of war preparation in the Roman world rather than a mere literary *topos*. When the city of Rome itself arose in open rebellion against the rule of Maximinus, the population, lead by a senator from Carthage whose name was Gallicanus, not only freed the gladiators from their barracks, who joined the fight with their characteristic weapons, but also stormed the city arsenal that was however full with parade weapons and armours⁵⁵⁹. The city itself was not completely unarmed: citizens grabbed swords and spears in their homes but also in the workshops and rushed to repel the soldiers still loyal to Maximinus⁵⁶⁰.

These passages from the seventh book of Herodian’s work are highly informative for the purpose of the present research. Rome was evidently capable of sustain even an intense warfare activity: city had workshops and craftsmen to produce military equipment, probably

⁵⁵³ Herod. 3,14,3 and 3,14,5.

⁵⁵⁴ Herod. 3, 6,3.

⁵⁵⁵ Herod. 3,7,1.

⁵⁵⁶ Herod. 6,3,2.

⁵⁵⁷ Herod. 2,9,2; 2,9,12 (Septimius Severus); 2,7,4 (Pescennius Niger in Syria).

⁵⁵⁸ Herod. 2,11,9.

⁵⁵⁹ Herod. 7,11,7.

⁵⁶⁰ Herod. 7,11,8.

not only in case of need. With a ten thousand strong garrison, the Roman garrison provided work for many families and entrepreneurs. Furthermore, due to a relatively comfortable headquarter and an arguably less dangerous military service, the praetorian guard soon started attracting soldiers from the Italian municipalities: coming from richer families and payed more than “common” soldiers, praetorians had a comparably higher purchasing-power that did not fail to attract skilled artisans who were eager to work for those wealthy customers. The city garrison represented for sure one of the richest markets in the empire for weaponsmiths and armorsmiths of talent.

Praetorian guardsmen had dagger decorated with gold and silver as status-symbol weapons, according to Herodian⁵⁶¹, that were probably crafted by local artisans. Besides the Praetorian guard, the *equites singulares*, the *cohortes urbanae* and even the firefighter corps of the *vigiles* represented a strong force that had to be equipped and armed for duty. Soldiers from provincial armies came and go frequently, sometimes remaining in Rome for a while, and probably had occasion to buy locally some parts of their equipment⁵⁶². Because of the singularity represented by Rome itself, the largest and better documented city of the Empire, the arsenal of the Urbs will be discussed in a further appendix.

Herodian’s unique attention could be seen as unexpected and bizarre, but it was rather logical and coherent. Severus’ campaign against the Germanic tribes highlights once again a clear key of interpretation. Pointing out the lack of defensive equipment among the barbarian warriors, who were therefore exposed to the deadly launch of missiles by the imperial troops, Herodian not only fully participated the idea that a superior equipment could grant the victory on the battlefield, but he also wisely identified in the logistics the key of imperial military power, an element that the imperial establishment had to preserve to maintain his advantages over its numerous foes. The theoretical horizon of Herodian appears even more clear if the passages regarding the wars against the Parthian kingdom are taken into consideration.

The difference between Roman military logistics and Parthian organization is stunning: while all the Roman world was bursting of activity to prepare the campaign, the Parthian had difficulties in swiftly gathering his forces⁵⁶³. The eastern king relied, according to Herodian, to

⁵⁶¹ Herod. 2,13,10

⁵⁶² *Frumentarii* soldiers were summoned from all the provinces of the empire and garrisoned in the *castra peregrina*, on the Caelius Mons. For the *Castra Peregrina* see Collini 1944 pp. 240-245, see also Reynolds-Ashby 1923 pp. 152-167 and Reynolds 1923 pp. 168-189. About *frumentarii* soldiers and their mission in Rome see Rankov 1990 pp. 176-182. For a general account on Roman imperial garrison at its full strength see Busch 2007 pp. 315-342.

⁵⁶³ Herod. 6,5,2: Severus Alexander and his entourage thought that a swift march into enemies’ territory would have catch the Persian forces by surprise. Weakness of the Parthian army are detailed also in Alexander Severus’ speech in 6,3,7. Alexander Severus’ campaign ultimately resolved in a disaster and the emperor was forced to accept a truce. In

weaker system that could be simplistically stylised as feudal because he had to call his vassals and aristocrats to mobilize local forces and joining the army⁵⁶⁴. A swift attack by the Roman forces, that could rapidly march into Parthian regions and penetrate into the deepest area of the kingdom, represented for sure a deadly menace for Ctesiphon. Herodian was surely well aware of the impressive logistics advantage of the Roman armed forces and recognized this superior organization as key factor in wars against the eternal eastern rival of Rome.

Despite this favourable starting position, Alexander Severus' campaign resolved in a partial disaster⁵⁶⁵. Sources are generally unanimous in attributing to Alexander Severus the greater responsibility for the loss, while many historians have credited Maximinus of many victories and brave deeds during the war⁵⁶⁶. The young emperor even abandoned a whole army, sent to invade the enemy country from the north in an aggressive pincer movement, to the Parthian counter-offence without crossing the Euphrates and relieving his fellow soldiers from enemies' assaults⁵⁶⁷. The abrupt defeat surprised the witnesses of the time⁵⁶⁸: despite the Parthian kingdom had been for long a formidable opponent, the imperial armies had historically obtained numerous success in the area. For the first time after Trajan's campaign, the advanced of the Roman forces was unexpectedly halted and reversed.

The defeat suffered by Severus Alexander foretold and opened a season of great instability along the eastern front. While Maximinus was more engaged in the western front, Gordianus chose to commit on the east again. It is interesting to note that sources differ greatly on this war. In the pages of the *Historia Augusta*, Roman forces, lead by Gordianus' father-in-law Timesitheus, managed to repel the enemies and restore the imperial authority over the Near East, but Sasanid documents provide a different version of the events. According to the Iranian inscription known as the *Res Gestae Divi Saporis*, as well as the official Sasanid iconography of the time, Gordianus III lead armies against the Persian kingdom two times, and he was defeated in both occasion and he lost his life on the battlefield. The praetorian prefect Philippus, who is credited of Gordianus III's death in the *Historia Augusta* and who later became emperor, was obliged to pay a huge tribute to the Parthian king⁵⁶⁹. Few decades later, while the Empire was

this occasion, Herodian states that the emperor was worried: Persians could not organize an army rapidly as the Romans, but they could exploit the period of peace to prepare their forces (Herod. 6,7,1).

⁵⁶⁴ Herod. 6,5,3.

⁵⁶⁵ Herod. 6,5,10; 6,6,3.

⁵⁶⁶ See however Vitiello 2015 pp. 199-219 on the topic. It is noteworthy to signal that some Christian authors have instead credited Maximinus, while Alexander had instead lead the army in a competent way.

⁵⁶⁷ Herod. 6,5, 5-10. See also Herod. 6, 5,8-9 in particular: Alexander Severus was influenced by his mother.

⁵⁶⁸ Dio 80,4.

⁵⁶⁹ *Res Gestae Divi Saporis* lines 6-10 (first campaign) and 10-19 (second campaign). See also Guey 1955 pp. 113-122.

going through the peak of the political and military crisis that tore apart the unity of Rome, Shapur obtained another series of stunning success: after having pillaged and plundered the rich provinces of Syria and Cappadocia, the Parthian king won over a strong army led by the emperor himself and captured Valerian⁵⁷⁰.

The military struggle along the eastern front was for sure at the heart of public debate during the central decades of the 3rd century AD, and Herodian fully participated in the debate of his own time.

The date of Herodian's work is unclear and, since the author has not given many hints about himself or about when he wrote his historical work, the date has been object of debate. It has been recently proposed to date the work to the time of Gallienus rather than to the immediate decades after the ruin of Maximinus, whose rise and fall did constitute the important apex of its narrative structures, when Gordianus III or Philip the Arab were ruling over the empire⁵⁷¹.

The multiple references to Parthian wars perfectly fit the cultural context of those decades: after the serious defeat suffered by Gordianus and Philip, Roman society surely urged to debate a find a solution. The same could however be said regarding Gallienus, whose father was vanquished by the eastern foes. In this second case, however, more evidences could be added in support of the hypothesis.

In the context of the present research, it could be enough to mention that Gallienus promoted a reform of the army that advocated a larger use of shock and heavy cavalry⁵⁷². The adoption of *clibanarii* and cataphracts of eastern origin was part of this program, the attention paid by Herodian to the differences between Parthian and Roman military equipment could be understood from this perspective: the success in this long and difficult confrontation could be assured by the adoption of enemy's tactics and weaponry. As a matter of fact, a very interesting passage from Herodian's work can be read under this very same light. After the defeat and death of Pescennius Niger, captured and beheaded near Antioch⁵⁷³, many of the soldiers who have backed him during the civil war passed through the Tigris and fled among the Parthian⁵⁷⁴.

The situation must have been serious if Septimius Severus, newly crowned emperor, hurried to proclaim and amnesty to have them back⁵⁷⁵. Herodian insisted on the topic and gave even more information, clearly stating that "because of the many deserters, the Parthians acquired the

⁵⁷⁰ *Res Gestae Divi Saporis* lines 19-36.

⁵⁷¹ H. Sidebottom 1997 pp. 271-276. *Contra* Polley 2003 pp. 203-208.

⁵⁷² *SHA Gall.* 15,1 M.R. Alföldi 1957; Pflaum 1976 pp. 109-117.

⁵⁷³ Herod. 3,4,6.

⁵⁷⁴ Herod. 3,4,7.

⁵⁷⁵ Herod. 3,4,7.

ability to face the Romans in the battlefield⁵⁷⁶". Our author adds that the Parthians learnt how to fight in the Roman way but he does not specify if they adopt just the Roman tactics or if they implemented also the organization of the imperial army, thus developing a better and more functional logistics.

Even more noteworthy is the further passage wherein Herodian mentions many artisans who fled the empire and settled among the barbarians. Because of this huge mass of deserters, the Parthians learnt how to craft Roman weapons and how to fight with them⁵⁷⁷. It is not completely clear if those artisans were soldiers who worked in the units *fabricae* or if they were civilians who worked for the army, craftsmen who had helped Pescennius in preparing the war and who were therefore fearing a punishment from the new emperors. Both interpretations lay on solid ground. The aforementioned list of soldiers exempted from daily duties that is preserved in the *Digestus* can be dated to the Severan age, attesting that this peculiar organization were kept alive at the time, but it is also known that eastern armies relied on the numerous and prosperous urban centres for logistics and equipment production. We do not have traces of a strict regulation to prevent artisans to move away from the Roman empire and open activities among neighbouring powers. The idea this movement of specialised skills could represent a threat for the Empire has already emerged in the Roman history. Cassius Dio affirmed that Trajan asked Decebalus to surrender deserters, prisoners and fugitives as part of the peace treaty of AD 102⁵⁷⁸.

As it has been detailed in previous chapters, Dio represents a difficult source to use because of the loss of the original work and because his epitomators were apparently not particularly interested in military and technical details. It can be thus difficult to appreciate if a passage could be considered trustworthy, or if the information has been distorted during the transmission of the work.

Due to multiple references to deserters and captives in Xiphilinus' work, it can be argued that the topic occupied an important place in the work of Dio⁵⁷⁹.

It is not impossible that Trajan and his advisors were indeed concerned about the potential presence of Roman deserters in Dacia: they were probably well aware of the technical superiority of the Roman army, and they intended to maintain this advantage over their enemies.

⁵⁷⁶ Herod. 3,4,8.

⁵⁷⁷ Herod. 3,4,9.

⁵⁷⁸ Dio 68, 9, 4-5.

⁵⁷⁹ See Harrington 1977 pp. 159-165. According to Harrington, Dio was indeed a competent commander and politician, he could have rightfully

The hypothesis has some solid fundamentals: the emerging of a new sensibility to weaponry in general clearly emerges during the reign of Hadrian, but it was likely the development of concepts deeply rooted in the Roman strategic culture. Trajan was indeed a skilled commander and highly reputed for his knowledge of warfare, he was for sure well aware of the danger represented by a military prepared Dacian kingdom, whose strong centralised authority and impressive natural defences make it an impressive foe already.

It is however also possible that Cassius Dio chose to highlight the topic, thus interpreting the event according to the sensibility of his time. The attention paid by Herodian to the topic confirms that the subject held a central place in the debate of the time and it is likely that Dio gave more importance to the information he found in older sources.

On the contrary, it is less likely that the whole point has been made up by Xiphilinus. Some additions to the original Cassius Dio's narrative bulk are known, but those extensions are always erudite digressions and debates or fictitious speech added to create dramatic moments⁵⁸⁰.

Since the topic is indeed present in the literature of the 3rd century AD, as it has been previously discussed, it is more possible that Xiphilinus, who was indeed a competent scholar⁵⁸¹, purposely gave importance to a theme already relevant in Cassius Dio's work.

The loss of the largest part of the 3rd century AD literature prevents modern historiography to dig further in this direction, but the quality of armaments and their role in warfare survived as a topic in later ages and maintained its relevance in the literature of the late antiquity.

As mentioned before, the *Historia Augusta* necessarily represents the privileged literary source for the period under analysis, but, despite the relatively good amount of information offered, those biographical accounts pose many problems.

The source used by its author, or authors, are frequently unclear. Many of the historians quoted in the biographies are suspected to have been bogus authors⁵⁸² and many passages seem to have been purposely invented to bend the historical truth to a politically and morally oriented narration of events.

Speech and letters in particular arise many suspects among historians and generally considered spurious addition as narrative devices⁵⁸³.

⁵⁸⁰ Mallan 2013 pp. 617-625.

⁵⁸¹ Mallan 2013 pp. 612-617.

⁵⁸² Syme 1983 pp. 98-108. See also Momigliano 1954 pp. 22-46. According to Marriott 1979 pp. 65-77, stylistic and statistic studies on the *Historia Augusta* confirm that the work was written by only one author.

⁵⁸³ See for instance Syme 1983 pp. 1-11 and 98-108. Rohrbacher 2016 provides also a very interesting perspective on the topic.

Considering the specific problem that this very complex source poses, the most meaningful passages for the purpose of the present inquiry will now be taken in consideration.

In general, *Historia Augusta* tends to consider the care for military logistics among the duty of a good general and competent commander. Despite the overall condemn of many historical characters, even those among them who were renown as commanders are praised for the care they dedicated to military logistics. The life of Trajan, that probably opened the collection, is famously missing in the surviving text, but it is noteworthy to highlight that Hadrian is known for having renovated the military equipment in use, reforming the *panoplia* of weapons and armours in particular⁵⁸⁴.

As discussed in the previous chapter, this information proves to be relatively accurate: Hadrian did indeed propose a wide reform of the army, implementing the adoption of new weapons and thus developing new tactical approach. The *Historia Augusta* adds also that Hadrian was particularly attentive to soldiers' training and disciplines, a trait of his military policy that once again is confirmed by epigraphic sources, and to an efficient management of resources: the emperor personally inspected and visited storage facilities to be sure that everything needed was available to the soldiers. Despite the long and difficult war Marcus Aurelius fought during his reign, it is necessary to wait for the life of Avidius Cassius before finding new information about this topic. Considered also by Cassius Dio a veteran and skilled commander⁵⁸⁵, Cassius is described in the *Historia Augusta* while inspecting soldiers' equipment, reviewing in particular weapons and armours conditions. Furthermore, he commanded his troops to practice every six days in large training battles, highlighting once again that at the time a solid connection between quality and nature of military equipment and a constant practice with it⁵⁸⁶.

A further detail is particularly worthy to be mentioned: the biographer quotes an official document, a letter, in which Marcus Aurelius commands his prefect to provides supply for Avidius' army, that at the time was marching against the Parthians in the east⁵⁸⁷. Logistic responsibility appears to be somehow a concern for the *Historia Augusta*, whose authors or author constantly show interest for the topic and frequently make references to it. Various officers appear to have been involved at different level and the hierarchy does not appear particularly clear in the pages of *Historia Augusta*. Under the praetorian prefect, whose role in military logistics emerges in the life of Marcus Aurelius, also provincial governors, procurators

⁵⁸⁴ SHA *Hadr.* 10.

⁵⁸⁵ Dio 72,22.

⁵⁸⁶ SHA *Avid. Cass.* 6

⁵⁸⁷ SHA *Avid. Cass.* 5.

and even military commanders, who probably had a coordination role between the provincial resources and the military forces, appear to have been involved in military logistics. In the life of Severus Alexander the emperor himself, who was personally leading the army against the Parthians, is praised many times for having proficiently managed the logistics: his army did not pillage the provinces it passed through and supply regularly flowed to the soldiers⁵⁸⁸.

As every good commander in the *Historia Augusta*, also Severus Alexander personally inspected soldiers' quarters, maintained a rigid discipline and he even had records and documents for every soldier in service⁵⁸⁹.

In contrast with the poor fame he had among the army, the young emperor appears in the *Historia Augusta* as a surprisingly meticulous general, completely devoted to his task. Even more interesting, the biographer highlights that the soldiers were happy: the emperor had provided them beautiful weapons and horses with saddles and bridles⁵⁹⁰.

This last passage is particularly noteworthy. Severus Alexander had gathered soldiers and troops for all over the empire⁵⁹¹, men who were surely armed when they joined ranks. Biographer probably exaggerated the situation, purposely giving the impression that the whole army was equipped with new and beautiful arms. It is however meaningful that the emperor is considered the supreme responsible for military logistics: it is thanks to him if the army is well equipped, it is thanks to him if every soldier has weapons and armours to face the enemy with. Even if the passage is clearly exaggerated, the biographer could have caught an insight of the 3rd century AD culture. Herodian, who is among the main sources for the lives of Severus Alexander and Maximinus, highlights many times in his work how long and difficult war preparations were: proficiency in generalship involved at the time also a careful management of logistics. The passage was probably intended to highlight the differences between Severus Alexander, a benevolent ruler and competent administrators of the empire, and Maximinus, a brutal man completely devoted to war⁵⁹².

Globally, the passage from the *Historia Augusta* can be considered trustworthy, it preserves something, even if the correct details are lost and the emphasis exaggerates the reality of facts, of the 3rd century AD cultural approach to warfare.

⁵⁸⁸ SHA Sev. Alex. 47.

⁵⁸⁹ SHA Sev. Alex. 21 and 51.

⁵⁹⁰ SHA Sev. Alex. 50.

⁵⁹¹ Herod. 6,4,7-5,1.

⁵⁹² SHA *Maxim. Duo* 12,3. He was feared by the senate for being bloodthirsty (15,1-2 and 20,1) and the death of such a cruel man was cheered all over the empire (24). See also SHA *Maxim. Duo* 13,3: Herodian, whose harsh judgement towards Maximinus is well known, is considered in the *Historia Augusta* as to favourable to the emperor.

Developing further an idea already born in the previous century, when Hadrian proposed a new image of the emperor who became a sort of chef de guerre even in peacetime by tirelessly training and inspecting the army and the condition of the provinces, the imperial culture of the 3rd century more coherently outlined a new point of view for the management of the empire according to which a more sophisticated and cautious use of provincial resources.

It is not a coincidence that skilled generals in the *Historia Augusta* are always portrayed as very scrupulous and proficient in organizing the supply system for their armies as well as prudent in exploiting the provinces. Ballista, a skilled general who attempted to usurp the imperial throne during the reign of Gallienus, was highly reputed for his ability in finding provisions for his army: he took care of placing garrisons and fortified camps only where the land was rich enough to provide supply and provisions for the soldiers, without exploiting the provincial world too much⁵⁹³. Misiteus, prefect of the praetorian guard and father in law of the young Gordianus, carefully inspected soldiers' equipment but he also prudently overlooked the peripheral defences of the empire: he visited camps, guardposts and praesidia and valla, he even checked that every town along the frontiers had enough provisions to hold firmly in case of siege⁵⁹⁴.

The emperor Probus inspected military equipment of his soldiers as well, *manipulus* after *manipulus*⁵⁹⁵. Probus is indeed one of the most interesting characters in the pages of the *Historia Augusta*. Together with Claudius II Gothicus, he represents a sort of teleological end for the historical narrative proposed in the collection of biographies. Brave soldiers and competent commanders, Probus and Claudius II, and Aurelianus to a lesser extent, incarnated a true Roman reaction to the crisis: faithful to the Senate and defenders of the Roman traditions, they represent the teleological end of the historical narrative proposed by the *Historia Augusta*⁵⁹⁶. The lives of previous emperors and usurpers should be thus read as the deeds of antagonists or of heralds who forewarned the arrival of the heroes who ended this period of trouble. The fact that Probus inspected equipment of his men is highly meaningful for the importance that this aspect had in defining the idea of generalship in the late antiquity.

Despite being a formidable commander and a man of war, Probus is described in his biography as man who deeply loved peace: he dreamt a world without soldiers, a world that has stopped to produce weapons and equipment for an endless war⁵⁹⁷.

⁵⁹³ SHA *Trig. Tir.* 18.

⁵⁹⁴ SHA *Gord. Tres* 28.

⁵⁹⁵ SHA *Prob.* 8.

⁵⁹⁶ SHA *Tacit.* 41,1. See Burgersdijk 2010 pp. 83-84 in particular.

⁵⁹⁷ SHA *Prob.* 20.

The image of the world massively producing weapons and armours for the war appears to be a recurrent *topos* in Latin literature, it exemplifies the economic burden the civil world had to bear during hard and difficult wars.

It is tempting to read the passage as an evidence of the role played by civilian workshops. Evidently, the idea of regions and provinces providing men and equipment for the war persisted from the 1st century AD, when Tacitus employed the image describing the morbid preparation for the civil war in AD 68, to the late antiquity. If the image maintained its strength during those centuries, it could be therefore deduced that the civil society never stopped to contribute to the army not only by taxation systems or for mere food supplies.

However, the specific passage in Probus' life in which the emperor imagines a peaceful world is more likely a rhetoric construction of the *Historia Augusta*, it does not seem likely that the biographer found this kind of information in a previous, and surprisingly well documented, source. More realistically, those lines reflect the culture of the author or the authors, who probably wrote during the 4th if not the 5th century AD. Nevertheless, the information remains precious in confirming the resilience of the image as literary *topos* and as powerful metaphor for the economic burden of war. Another element should be highlighted. In the *Historia Augusta*, the peculiar link between the condition and the quality of military equipment and soldiers' discipline appears to be surprisingly strong.

This aspect is not a complete novelty from the *Historia Augusta*, and it appears indeed well established in the Imperial culture of warfare.

It appears already in Republican sources, when the commanders of the past took in charge the training of the soldiers under their command, and it was reaffirmed by Hadrian, who firstly proposed a coherent vision for it: the emperor held the supreme responsibility for the efficiency of the Roman army, he overlooked the discipline and the training of the soldiers as well as the material conditions of life in the army, from provisions to equipment to camps and barracks.

The *Historia Augusta* develops the same topic in a broader historical narrative. Good emperors and renown generals are always presented as interested in improving the discipline among the soldiers and highly concerned with their equipment.

Hadrian provides the conceptual archetype in this sense: discipline, training and equipment inspections merge in his biography into a sort of meaningful archetype. Inspecting both the equipment and training of soldiers are traits that define the leadership of Avidius Cassius and in the life of Probus as well.

The most stunning and interesting comparison is however between Severus Alexander and his murderer, Maximinus. The two historical figures constitute a narrative unit in the *Historia Augusta* as they did in Herodian's work: while the young Severus, despite some shadows the biographers casted on him, is generally described as a conscientious emperor who tried his best for the empire, Maximinus is guilty of having thrown the empire in a state of despair and crisis. While Herodian had however presented Maximinus solely as a barbarian usurper, the *Historia Augusta* seems to combine two distinct narratives and Maximinus is presented at a same time as a cruel barbarian⁵⁹⁸ and a warlike soldier, the first to have reached the imperial throne after a humble career in the army⁵⁹⁹. The alien nature of Maximinus is thus to be researched in his humble origins: far from the political and cultural instances of the Roman élites, Maximinus represented that provincial and military world that was slowly growing a clearer perception of itself.

Extreme poles of a delicate political equation, Maximinus and Alexander Severus forms also a dichotomy in terms of leadership and military command. While the last emperor of the Severan dynasty follow the same paradigm of the "positive" emperors of the past, thus checking at the same time soldiers' equipment and their discipline, Maximinus adopted a different approach. The Thracian emperor knew his power lied on the shoulders of his men and indeed when he lost the support of the army he lost his life also: The *Historia Augusta* says that he never took the food ration to a soldier, nor he allowed his soldiers to work as smiths or to engage in similar activities while serving in the army⁶⁰⁰. The exact mentions of blacksmiths is obviously meaningful for the present topic, but the nature of the *Historia Augusta* itself as a source keeps representing a problem for the analysis. The reign of Maximinus is poorly known and the earliest literary source still available to us, the historical work of Herodian, does not transmit such and information.

A comparative analysis is thus hard because of the scarcity of available accounts, and the knowledge of the very short reign of Maximinus relies more on archaeological and epigraphical evidences rather than on the words of contemporary witnesses.

Because Herodian does not present this very piece of information, and assuming that it has not been invented by the authors of the *Historia Augusta*, it could be deduced that the information came from a different and nowadays lost source.

⁵⁹⁸ SHA *Maxim. Duo* 1,5-7.

⁵⁹⁹ SHA *Maxim. Duo* 8,1.

⁶⁰⁰ SHA *Maxim. Duo* 8,2. It is unclear if it can be argued as a consequence that Maximinus relaxed the discipline among the soldiers. The *Historia Augusta* seems rather to state that he kept the army in good order: SHA *Maxim. Duo* 7,7.

There are indeed some reasons to presume that the information is correct in his general value. Maximinus was indeed strongly tied to his army and much beloved by his soldiers. It looks thus logical to imagine that the usurper, who received the power from his loyal men, was trying to secure his support, relaxing the rigid discipline of the army and conceding some advantages to his troops. The passage perhaps echoes the complains made by the veteran legionaries during the reign of Augustus: soldiers lamented the despicable and harsh conditions of military service, the endless *corvéess* and the incessant expenditures required for supply and equipment⁶⁰¹.

Tacitus passage is generally considered as a trustworthy source to understand how military logistics worked at the beginning of the imperial history. *Historia Augusta* passage does not seem however to quote the *Annales* and there are no direct references to the harsh reality of soldiers' life: on the contrary, it seems rather that Maximinus was freely improving service conditions to his men, but there was no complain to deal with. The interpretive key could be seen instead in the different behaviour of the two commands: while Tiberius and Drusus, after having recognised the objective difficulties of the legionaries, managed to improve the situation while conserving a rigid discipline among the ranks⁶⁰², Maximinus apparently granted many privileges to his comrades, relaxing in this way the structure itself of the army.

The passage deserves probably more attention. A useful, albeit surprising, comparison can be attempted with a well-known passage from the *Epitoma Rei Militaris* of Vegetius. Referring to the poor and despicable condition of the imperial army during the late antiquity, Vegetius affirms that the Romans slowly abandoned and disregarded their revered military tradition of fielding a strong heavy infantry as core of their armies⁶⁰³. The chronological reference is not clear in Vegetius' concise Latin: this changing could be addressed to the emperor Gratian himself or perhaps it took place some years later⁶⁰⁴.

It has been proposed to read in this vague allusion of a defeat suffered by the Romans a reference to the disastrous battle of Hadrianople, but it remains particularly unclear if late Roman army was truly ill equipped in comparison of legions of the past⁶⁰⁵. Archaeological evidences apparently confirm that military equipment did change during the century but defensive weaponry was not abandoned even during the most intense military crisis of the 5th century AD and remained in use among the imperial soldiers for long and it seems that our

⁶⁰¹ Tac. *Ann.* 1,17.

⁶⁰² Tac. *Ann.* 1,29-30.

⁶⁰³ Veg. *Epit.* 1,20,2.

⁶⁰⁴ Charles 2003 pp. 128-129.

⁶⁰⁵ Charles 2008 pp. 222-229.

author had highly exaggerated the claim about unarmoured infantrymen, probably misreading older sources⁶⁰⁶. Vegetius was more a pamphleteer than a military expert, but it is nevertheless unclear why he should have completely and purposely worsened the situation.

In a further chapter of his essay, Vegetius stressed the complete autarchy of ancient Roman legions⁶⁰⁷. While the soldiers of his own days wore defensive weaponry manufactured in state-ran *fabricate*, he said, the warriors of the glorious past of the empire were trained in producing their own equipment, thus achieving the goal of a perfect army who could operate without any form of support from the civil society. As it has been argued in the previous chapters, the imperial army never reached such a degree of perfection but Vegetius could not have been the only one to see in a third century AD development a remote origin for the “crisis” of late antiquity imperial army. Arguing that Maximinus prevented soldiers to work as weaponsmith to win their favour, *Historia Augusta* could have simply kept memory of a slow process started in the 3rd century AD and, whether rightfully or not, attributed to the Thracian emperor. The logic structure appears somehow coherent. Military logistics started to be considered at the same time as a key-factor in obtaining victory in war and an aspect of military discipline. If the idea of undisciplined imperial army progressively grew in the culture of late antiquity, the two aspects could have been combined by different authors in different moments of Roman history: the “new” logistics that started to be developed during the 3rd century AD, and that continued to shift military logistics from a de-centralize system to a system organized around larger hubs, was accused of having corrupted the discipline of the past, ultimately weakening the imperial army.

Compared to the good emperors and commanders, who assured the good equipment to their soldiers and maintained the highest discipline standards among the ranks, the “negative” figures of the imperial history, or at least who attracted the blame of a part of ancient historiography, were accused of having slowly eroded the strength of the imperial army. *Historia Augusta* and Vegetius reflected therefore a similar point of view on this aspect of military history, they shared the same historiographical bias on a logistic development that evidently took place during the 3rd century AD. Details of this evolution went lost for the authors of late antiquities and this could explain why details and chronology of this evolution are blurred. Reducing a slow and progressive progress to a “reform” and addressing it to known

⁶⁰⁶ Charles 2003 pp. 127-167.

⁶⁰⁷ Veg. Epit. 2,11.

figure, as the *Historia Augusta* seems to do with Maximinus, could have been an attempt to theorize and understand the phenomenon.

The core of the information, the *mise en place* of a new logistic system, could however be considered as trustworthy. Roman Empire did have some reasons to develop a more centralized logistic system at the time. The unfavourable political momentum weakened the imperial establishment, crippling the efficacy of Roman foreign policy and momentarily shattering the unity of the empire itself.

Started at the end of the 2nd century AD, the prolonged state of warfare had for sure a wide impact over the economy of the Imperial regions and stressed the productive network. As it has been shown in previous chapters, Roman established reacted to similar occasions in the past by concentrating the productive and logistic efforts in functional “hub”. Those logistic bases functioned in previous occasion for a limited time, apparently disappearing when war was resolved, but in a different context, in which the imperial forces found themselves engaged against multiple enemies and in a virtual state of endless context, those bases could have slowly turned into more stable structure.

Military reforms promoted during the 2nd century AD could have already anticipated the formation of such an organization, since implementing wide reform of military equipment required a sort a coordination in the use of resources and workforce.

Differently from Hadrian, who ruled in a peaceful and prosperous moment of the Roman history, and other rulers who promoted more or less radical reforms and reorganizations of the army in the past, the *principes* of the 3rd century AD found themselves limited by unfavourable circumstances and they often exercised a much weaker power than their predecessors.

The case of Gallienus represent however an interesting case study in this respect. Gallienus ruled over an empire crippled by usurpers and shattered in multiple entities and his authority was therefore limited to a small portion of the Roman east⁶⁰⁸.

Despite the objective difficulties of his reign, the *princeps* was able to promote and implement a significative military reform, whose details are unfortunately poorly known nowadays. Apparently, Gallienus anticipated Diocletian’s and Constantin’s reform of late 3rd century AD-early 4th century AD, increasing the use of cavalry and mobile assets in battle. The increasing importance of cavalry commanders during the “military anarchy” crisis, many of whom became emperors in their own turn, means however that this transformation process had already

⁶⁰⁸ Lo Cascio 2008 pp. 158-162 in particular for a brief account.

begun before Gallienus' reign and it is more probable that this emperor brought this process to its coherent end.

Gallienus were however able to implement his reform with comparatively less resources: evidently, the imperial leadership at the time had at its own disposal a solid system of infrastructures and a productive network to work with and within. Unfortunately, very few sources shed a light on the situation but some epigraphical documents provides a useful insight for this complex process. The most ambiguous one refers to a centurion from one of the Danubian legions (both the *III Augusta* and the *III Flavia* are mentioned) sent in an unknown occasion to buy some *loricae* in Gallia (*in Haeduis consistentes et vico Brivae Sugnutiae*):

*M(arco) Ulpio / Avito [(centurioni) / leg(ionum) III Aug(ustae) / III Fl(aviae) / opifices lori/cari(i) qui in (H)ae/duis consist(entes) / et vico Brivae / Sugnutiae res/pondent quiq(ue) / sub cura eius fu/erunt erga ips[um] / b(ene) m(erentem) po[suer(unt)]*⁶⁰⁹.

The document evidently contrasts with the idea that logistics was still centred around military workshops or productive facilities active in *vici* and *canabae* or with settlements who had a strong relation with military *castra*.

Transporting huge number of heavy goods, such the various pieces of defensive weaponry were, was probably not easy nor cheap. We do not have further details on the mission: it is unclear if the *centurio* was sent directly from a base in the Danubian area or if he was in the Gallic region for other purposes; it is also unclear how many armours he bought, for who or in which occasion. With the scarce information we possess, it is hard to estimate the value of this information. It is possible that his workshop represented some sort of archetype of late antiquities state *fabricae*: the area was well connected to the Rhine frontier and hosted a weapon production facility in the late antiquity.

A second document seems to mention one of these early logistic hubs. In this case, a military officer is sent to overlook the recruiting and training of new levies and the production of military equipment for the new troops in Milan: *tir(onibus) legend(is) et arm(is) fabr(icandis) in [ur(be)] / [Me]diol(anio)*⁶¹⁰.

The text of this *ex voto* is fairly fragmentary and not easy to read. A dedicace *[pro] salute a[et]que / [incolumitat]e et victo[ria] / [d(omini) n(o)stri] Imp(eratoris) G]ordiani Pii [Fel(icis) Aug(usti)* provides a dating element for the inscription, but it is unclear when this officer, whose the only readable part of the name is Annianus son of Lucius of the Fabia tribe, was sent to Milan

⁶⁰⁹ CIL 13 2828 = ILS 7047.

⁶¹⁰ CIL 13, 6763.

or in which occasion. Annianus's career mixed administrative and military offices in Italy and in Germania.

The inscription seems to indicate some kind of difficulties, but it is extremely hard to link the inscription to a specific moment of the imperial history and it is therefore unclear if the recruits were going to form a new unit or if they were intended to reinforce existing units.

The document confirms nevertheless how much a prolonged state of warfare stressed the imperial productive network: recruiting and arming new soldiers forced the empire to organize a logistic hub and rely on it for the whole process, it could be thus deduced that this solution had been adopted in multiple occasions and progressively it became a more permanent solution. Furthermore, Milan was well connected to the peripheral areas of the empire but nevertheless relatively far from the frontiers. If the imperial establishment felt the need of organize a hub in this important city, it could be imagined that the new logistic system relied less on local manufactures and more on a large network of structures.

The attention paid by 3rd century authors to soldiers' weaponry, an approach that has been echoed by the *Historia Augusta* and that remained in later sources, reflected this complex and slow evolution. Forced by a difficult situation along the frontiers and compelled to exploit natural and financial resources in a more efficient way, the empire progressively developed a new logistic organization that was probably more flexible and assured to the establishment a deeper control over the whole supply chain.

This theorised evolution is surprisingly compatible with sociological models developed to account the evolution and development of nations in modern times. As it has been proposed by Mann⁶¹¹, communities that underwent a prolonged period of military difficulties experienced a financial crisis as well, that can turn as "chronical" crises as well. Paying soldiers and their equipment could really cripple a local or a state economy, forcing the élites to devise new and improved ways to assure resources and manpower to the own survival of the states⁶¹².

The imperial establishment was therefore forced to extend its administrative structures, developing a more complex and extended bureaucratic apparatus, to assure a higher degree of control over the strategic assets of the state.

The model accounts and explains how the relatively "light" administration of High Empire developed into the comparatively more structured administration that characterizes of Empire

⁶¹¹ Mann 1986 and Mann 1993 *passim*.

⁶¹² Mann can be considered aligned to the "bellicist" theory of nation-building: modern nations, at least in Europe, are the results of the intense series of wars that characterised Europe during the modern age. Only the states and kingdoms that managed to succeed in reshaping their administrative structures ultimately managed to survive at the expense of all the other states and political entities. See Malešević 2020 pp. 671-691 for a debate on the topic.

during Late Antiquity, it is however hard to follow the development of imperial military structures and organizations through those years of instability and difficulties.

The study of field artillery offers however an interesting perspective on the topic. Martino has consistently demonstrated that Roman forces adopted developed and adopted the *onager* partially as a substitute of older *ballistae* and *cheiromballistae*⁶¹³. Despite the old *ballistae* models, described by Vitruvius⁶¹⁴ and later improved by Heron of Alexandria⁶¹⁵, were superb machine of war, the *onager*, that appear in literary sources only from the 4th century onwards⁶¹⁶, was much easier to use and simpler to build. The *onager* represented indeed a practical and efficient solution to the difficulties the imperial army was experiencing at the time: the mechanic parts could be realised without requiring highly specialised *architecti* and the *onager* could be used by common soldiers.

The introduction of the *onager* attests a specific tendency to simplification of logistics organization, possibly an approach the privileged fast and massive production over highly specialised and extremely technical weapons, but it confirms also that the imperial establishment was able to maintain a certain degree of control over the military productive infrastructures even during the military anarchy. It is otherwise impossible to understand how Gallienus, whose reign was troubled by numerous usurpers, was able to implement a complex and ambitious reform of the army in few years.

Gallienus is credited with the creation of new cavalry formations (labelled as *illyriciani*: *equites dalmati*, *promoti*, *mauri*, *scutarii*, and the *stabliesiani* also) that are mentioned in the *Notitia Dignitatum Orientalis*⁶¹⁷ and that responded to the need of the emperor to have at his own service a fast and hard hitting force to oppose to his numerous enemies⁶¹⁸. Evidently, and despite his difficulties, Gallienus was able to equip such a strong contingent of cavalymen and he could have exploited some logistic hubs under his control to craft all the weaponry needed. On the other end, the emerging of centrifugal power could have shown the weakness of this new system and, at the same time, the political crisis and the frequent usurpations and temporary secessions could have boosted the process. A governor or a commander powerful

⁶¹³ Martino 2007 pp. 141-154.

⁶¹⁴ Vitr. 10,10,1-6.

⁶¹⁵ Wilkins 1995 pp. 5-60.

⁶¹⁶ Amm. Marc. 23,4,4-7.

⁶¹⁷ *Equites Dalmatae Illyriciani*: Not. Dig. Or. 32,21; 33,25; 34,18; 35,15; 37,16. *Equites Mauri Illyriciani*: Not. Dig. Or. 32,16; 33,26; 34,21; 35,17; 37,17. *Equites Promoti Illyriciani*: Not. Dig. Or. 33,17; 34,19; 35,16; 36,20; 37,15. *Equites Scutarii Illyriciani*: Not. Dig. Or. 32,19; 33,16; 34,20; 36,19; 37,14.

⁶¹⁸ See M. R. Alföldy 1959 pp. 13-18; Hoffman 1969 pp. 251-252 in particular; M. P. Speidel 1974 pp. 541-546 (*equites stabliesiani*), Dziurdzik 2017 pp. 447-462 (*equites dalmatae*)

enough to seize the control of a portion of the empire could proficiently exploit the existing logistic infrastructure and turning their production for his own advantage.

Usurpations during the troubled period of the military anarchy proved to be surprisingly successful in comparison of earlier attempts, and in many cases the central authority had to engage in long and difficult conflicts to overcome these centrifugal forces.

Banditry as well appears to have been more resilient at the time. While the bandits in the Isauria mountains could not face the imperial army on the open field⁶¹⁹, nor they could attack the most fortified cities⁶²⁰, the Bagaudi managed to organise themselves in such a way they not only resisted to the imperial forces but succeeded in repelling group of barbarian warriors⁶²¹.

The success of usurpers and the difficulties in the various civil wars surely reflected the weakness of the central power, but it would be interesting to know if the emerging regional powers exploited the logistic hub for their own purposes or if they develop further the system. Provinces with strong garrisons had for sure all the necessary infrastructure already, and the shift from a network of small and local manufactures to a network focused on larger hub could have not represented a major change in the mid-term strategy of local usurpers, but other peripheral areas could have exploited the situation or even put in place a new productive system to sustain the military activity. The case of Proculus could be interpreted as an evidence of the first type. The Ligurian usurper, according to the *Historia Augusta*, was able to equip two thousand of supporters just with his own finances, a wealth he had cumulated also because of his activities as pirates⁶²².

Proculus appears as a sort of “outlaw king”, lord among the tribes settled in the Alps and chief of brigands, and he resembles in this respect other figures, like Bulla Felix⁶²³ or Maternus, albeit much more successful than every other brigand in the imperial history. *Historia Augusta* could however be purposely misrepresented Proculus, degrading him to a vile bandit. It is however interesting to highlight that he was apparently able to equip a sort of regular army: he could have exploited infrastructures and productive facilities in a way it had been impossible before.

Marius could represent the most prominent figure in this respect, but his reign and life are unfortunately shadowed by a labyrinth of misleading information. Available accounts present very short notices about this usurper, but they tend to agree on few details. Marius’

⁶¹⁹ Zosimus 1.69.

⁶²⁰ Zosimus 4,20.

⁶²¹ Zosimus 6,53; Rutilius 1,213; Sidonius *Carm.* 2,8; Giov. Antioch.frg. 201,3.

⁶²² SHA *Proc.* 12, 1-2. See also Rostovzev 1976 p. 620.

⁶²³ Dio 75,10; Zonaras 12,10.

reign had been very very short. The *Historia Augusta* puts him after Victorinus and says he reigned for just three days. Marius' reign in Eutropius'⁶²⁴ and Aurelius Victor's⁶²⁵ accounts is even shorter: both authors speak of just two days of reign. A similar information can be found also in Orosius⁶²⁶, according to which Marius was immediately killed.

The first source to have speak about this extreme brevity of reign derives should be the lost collection of biographies known as Enman Kaisergeschichte. The information appears however suspicious and it is not confirmed by numismatic evidences. Marcus Aurelius Marius, the real name is known thanks only to the *aurei* and the *antoniani* he emitted during his reign, ruled enough to mint 20 separate series from two different sites, one of which was Cologne and the other remains still un-identified⁶²⁷. Marius were proclaimed *augustus* by the soldiers in the context of the "Gallic empire" born as a consequence of Postumus' usurpation: when Postumus died fighting Laelianus, a rival who was killed in the same conflict, soldiers offered the title to Marius⁶²⁸.

Coins reflected this difficult start: the series of the *concordia militum*⁶²⁹ celebrate the renovated unity among the army of the Gallic empire after the brief civil war. Evidently, Marius remained in power for more than a couple of days. The information is however present in every source on the period, and thus it cannot be discarded as a mere mistake. The "*Les Belles Lettres*" edition of Aurelius Victor mentions an interpretation proposed by Chastagnol, without pointing to a work in particular, according to which those two or three days were a sort of inter-regnum: two days passed between the death of Marius and the proclamation of Victorinus⁶³⁰.

Besides the trouble chronology of his reign, Marius represents a key figure for the present topic because of the few information we posses about his military career.

⁶²⁴ Eutr. 9,7.

⁶²⁵ Aur. Vict. *Liber de Caes.* 33,12.

⁶²⁶ Oros. 7,22.

⁶²⁷ Besly 1984 pp. 228-233. Cohen 1859- 1862 VI pp. 87-89.

⁶²⁸ See in general König 1981.

⁶²⁹ Cohen 1859 VI p. 87 number 3 *recto*.

⁶³⁰ Dufraigne 1975 p. 161. Another hypothesis proposes instead a different interpretation: Marius was proclaimed somewhere away from Cologne and it remained there for a while before coming to the city. He remained there for a few days before being killed. The few days were somehow the days of "effective" rule in the seat of power, they do not describe the whole reign of Marius.

While in Eutropius he was just an *opifex*⁶³¹, both the *Historia Augusta*⁶³² and Aurelius Victor present him as a *ferris opifex*, a blacksmith who was still not renowned among the soldiers⁶³³, but the *Historia Augusta* mentions that he was an officer in the army⁶³⁴.

Historia Augusta account is most detailed and interesting, but it apparently diverts from the others because of the general evaluation of the character.

While Eutropius and Aurelius Victor saw in this humble man came from the ranks a sign of the despicable condition of the imperial authority, the *Historia Augusta* seems to present him as an energetic man and competent commander: in this teleological narrative, Marius represents the opposite of the weak and immoral Gallienus and he is thus a positive character.

Marius had for sure some qualities to be accepted by his comrades and the *Historia Augusta* could have been right in highlight his strength and his hardness: both are quality frequently put in evidence by emperors and commanders with a solid relation with the soldiers⁶³⁵. Aurelius Victor in particular advances some clear parallelisms between Marcus Aurelius Marius and Gaius Marius, the famous republican general and vanquisher of the Germanic tribes⁶³⁶.

Both Aurelius Victor and the *Historia Augusta* mentions some jokes about Marius⁶³⁷, but it is possible that the unusual background of Marius was indeed part of his propaganda. The Gallic emperor presented himself as a restorer of the Roman power, a vanquisher of the barbarian foes who will dress the Romans in clads of iron⁶³⁸.

The connection with the famous general of the Republic remains however utterly strange, at least to me. It is known that Gaius Marius was indeed a *homo novus*, but no source mentions he worked as a blacksmith and it is therefore unclear on which basis this parallelism had been issued. It is more likely that the parallelism had been established on the base of Marcus Marius' real career. The emperor purposely projected his experiences on the illustrious republican homonymous, presenting himself as a "new" Marius, came to save the Romans on the verge of the disaster. The parallelism between the two Marius had been therefore part of the official propaganda, exploited by the Gallic emperor and by his supporters and by his enemies as well. It follows that there are few reasons to doubt that Marcus Marius was for real engaged in

⁶³¹ Eutr. 9,7.

⁶³² SHA Trig. Tyr. 8,1: *Victorino, Lolliano et Postumo interemptis Marius ex fabro, ut dicitur, ferrario triduo tantum imperavit.*

⁶³³ Aur. Victor *Liber de Caesr.* 33,9

⁶³⁴ SHA Trig. Tyr. 8,3.

⁶³⁵ For instance, Maximinus' exceptional strength is often highlighted in the *Historia Augusta*: SHA *Maxim. Duo* 2 and 3; 6, 6-9.

⁶³⁶ Aur. Vict. *Liber de Caes.* 33,11.

⁶³⁷ Aur. Vict. *Liber de Caes.* 33,11; SHA Trig. Tyr. 8,2.

⁶³⁸ SHA Trig. Tyr. 8-13.

activities connected with the production of military equipment and more specifically with weaponry.

In the *Historia Augusta*, Marcus Marius is killed by a soldier who had been mistreated by him when Marcus was still a commander or when he had been already proclaimed emperor, the biographer seems to have doubts on the point⁶³⁹. This uncertainty is interesting. If Marcus Marius ruled for just three days it looks suspiciously strange that a soldier had been treated unfairly by him: more likely, the original source said more clearly that Marcus Marius' reign was longer than just a couple of days and the information went evidently corrupted during the process. While striking, the soldier who killed Marcus Marius pronounced the following words: "*Hic est gladius quem ipse fecisti*"⁶⁴⁰. The *Historia Augusta* account seems to imply that Marius really started as a humble blacksmith, the soldiers who killed him was indeed labelled as a former fellow worker in the same workshop, but it is unclear how he arose to such a high position. The image of Marius personally forging the sword to defend the empire was strong, but also the metaphor of the emperor betrayed by his own weapons was a powerful way to describe the critical situation of the Roman state.

If the metaphor was indeed part of the official propaganda, the links with the debate on logistics appear in a clear way: personally producing the way represented the exaggeration of the same rhetoric that defined other emperors, who presented themselves as constantly engaged in inspecting and checking the material condition of the imperial army.

Exceptionally strong, a war demiurge in every sense, Marcus Marius coherently showed an efficient image of himself. His life could however be read also as another proof of the renovated importance of this aspect of military logistics at the time. Despite being relatively poorly known to the rest of the army, Marius had been an officer before assuming the title of Augustus but surprisingly no source mentions his tactical and commanding skills.

If Marius held a logistic office instead, for instance if he was put in charge of a very important workshop for weapon production, it could explain both the lack of tactical skills and the poor fame he had among the soldiers.

Marius could have been not a unit commander, but an officer charged with equipment production and other logistic tasks, possibly head of supply hub in the Gauls, and he had been subsequently chosen as Augustus in a temporary power vacuum.

⁶³⁹ SHA *Trig. Tyr.* 8,6.

⁶⁴⁰ SHA *Trig. Tyr.* 8,7.

Not a simple blacksmith then, even if his beginning were humble for sure, but an archetype for a figure that was destined to become much more important in the late antiquity.

Appendix I: The Arsenal of Rome.

Specialization in Production of Military Equipment.

According to Herodian, some soldiers loyal to Maximinus were still in Rome when the Senate, worried by emperor's brutality in dealing with the Carthaginian revolt of the Gordianus, gathered to discuss the events in a meeting. Those veterans, too old and sick to actively serve in the army, reached unarmed the curia to assist the meeting and, apparently, they had no harmful intentions⁶⁴¹.

Senators were however scared because of the situation, and they evidently feared a revenge from the emperor for having backed the African revolt. Many of them were openly armed⁶⁴² as a consequence of this difficult situation. When a couple of soldiers, eager to know the senate decision, walked too much into the curia, a Carthaginian senator, Gallicanus, stroke them to death with his sword and the revolt suddenly exploded⁶⁴³.

Soldiers retreated in their quarters, but the crowd was bloodthirsty: Gallicanus invited the people to grab weapons of choice, they freed the gladiators from their barracks and many rushed the public arsenals, so they are labelled by Herodian, they forced the gates and stole the equipment conserved there⁶⁴⁴.

Herodian states however that the arsenal was intended to keep only parade equipment. Soldiers had their own weapons and armors in the camp, but around the city there were workshops and atelier that produced and sold weapons. Probably because the information is limited, the passage from Herodian's historical work seems to have not attracted the attention of modern research. It offers nevertheless a very interesting insight on the topic.

Herodian established a clear distinction between weapons used in war and their parade counterparts, implying that the latter ones were not really efficient in close quarter fight. Stormed by the enraged crowd, the soldiers managed to repel the attackers and brutally counterstroke, routing the untrained and ill-equipped opponents.

Gathering all the weapons for war in a safe place, as the army barracks and quarters should have been, was for sure a measure of social security. It is unclear how cities and communities

⁶⁴¹ Herod. 7,11,2.

⁶⁴² Herod. 7,11,4.

⁶⁴³ Herod. 7,11,3.

⁶⁴⁴ Herod. 7,11,7.

of the ancient world managed to keep weapon, but it is possible that some kind of arsenals were from organized to collect and gather all the weapons available in a certain town.

The arsenal of Rome appears again in a brief passage of Tacitus, who is also the author to have provided more information about this topic overall. Tacitus is describing the last hours of Galba's brief reign, Otho is already exciting the soldiers in Rome and he's preparing his forces to strike. The moment is crucial and the usurper is addressing the troops in the *castra praetoria* and, when the *legio I Adiutrix*, originally recruited by Nero among the soldiers of the fleet, finally decided to side with him⁶⁴⁵, Otho invited the soldiers to open the *armamentarium* and grab weapons and armors: soldiers rushed the arsenal, hastily equipping themselves without respecting the proper distinctions between weapons used by auxiliary soldiers and by legionaries⁶⁴⁶.

Apparently, at least two distinct state *armamentaria* existed in Rome: the one in *castra praetorian*, wherein a proper military equipment was stored, and another one wherein weapons for parade and festive occasions were kept. Epigraphic documents from Rome confirm indeed that the state officials managed the public arsenals: scribes are mentioned in an inscription dated to the 2nd century AD⁶⁴⁷, but a weapons storage for the gladiatorial games apparently existed as well⁶⁴⁸.

Other cities appeared to have public arsenals in that period.

Tacitus again states that Otho summoned in Rome the XVII *cohors* from Ostia, and soldiers started packaging weapons and armors that were stored in local *armamentarium*⁶⁴⁹. Ostia was garrisoned indeed by a *cohors urbana*, but other urban settlements of the empire evidently had enough weapons and armors to equip troops of man at arms. Several Gallic tribes (the Treviri, the Lingoni) and towns (among which Tacitus mention Colonia) offered their support to Vitellio, promising weapons and money for the imminent attempt to seize the imperial power⁶⁵⁰, and in the forthcoming tumultuous period of conflict and political insecurity, some tribes and towns were forced to surrender their weapons⁶⁵¹ or take a stand and marched to war once again⁶⁵².

⁶⁴⁵ Tac. *Hist.* 1,36,3.

⁶⁴⁶ Tac. *Hist.* 1,38,3.

⁶⁴⁷ CIL 6, 999.

⁶⁴⁸ CIL 6, 10164.

⁶⁴⁹ Tac. *Hist.* 1,80.

⁶⁵⁰ Tac. *Hist.* 1,57.

⁶⁵¹ Tac. *Hist.* 1, 64 (Aedui) and 1, 66 (Vienne).

⁶⁵² Tac. *Hist.* 1, 68 (Elvetii).

Keeping weapons in a store room or in arsenal is not advocated by ancient authors in time of war, and it was instead suggested to let soldiers sleep nearby their equipment to prevent night panic and to be ready in case of danger, but Rome remained relatively safe from external menace for many centuries, and it can be argued that also other towns far from the imperial borders benefitted of a relatively high security through the first centuries of the current age. The population of Rome had however a very particular relation with the emperors: being extremely near the seat of the power, citizens of the *Urbs* were extremely influential and represented a potential threat for the emperor himself.

Despite the *principes* ruled over an immense territory, each emperor had to win the heart of the people of Rome to keep the power: if a revolt in a far province represented already a serious challenge to the Roman power, an uprising just outside the gates of the imperial palace could be deadly threat.

Even the strong city garrison, as the passage from Herodian clearly shows, could be challenged by the furious crowd. Unstoppable in a pitched battle because of their superior equipment and training, soldiers emerged victorious in the first fight but when they tried to pursue the attackers and to venture into the urban textures, that the soldiers did not know well, they found themselves in a very difficult situation and they were ultimately wiped out by the supporters of the senate.

Somehow, the praetorians and the civilians in Rome represented two faces of the same coin, everyone balancing the opposite and both representing a vital support and a fatal threat for the *principes*. Disarming the huge population of the city was therefore a priority for the emperors. The arsenals mentioned by Tacitus and by Herodian perfectly fits the situation sketched: storehouses were locked and probably guarded but nevertheless full of useless weapons, while the effective weaponry were safely kept among the soldiers.

Another brief passage is noteworthy to be signaled in the present discussion. According to Herodian, citizens “grabbed everything they could find in houses and workshops”: not only working tools and improvised weapons, but also spears and swords⁶⁵³. Evidently, Roman citizens were not only normally armed, even if just with light weapons intended for personal defense, but it appears clear also that weapon-smiths were active in the city.

This aspect deserves probably a little digression. The presence of artisans and weapons producer in an urban settlement of the ancient world is not surprising at all: virtually every town and city had its own productive quarters and even the smallest community had a

⁶⁵³ Herod. 7,11, 7-8.

possibility to produce the weaponry needed by its warriors. Because of Roman soldiers had to buy their own equipment during the centuries of the Republic, a conspicuous presence of artisans and blacksmiths in the city or in surrounding towns should be considered as highly possible.

A *centuria fabrum* is known from ancient literature⁶⁵⁴, albeit it is unclear when this *centuria* was really introduced in the army, whose reform has been traditionally addressed to the king Servius in an anachronistic way, and which function it really had. In any case, the passage can be considered as a clear evidence of the presence of wood and iron workers in the city since remote ages.

It is unfortunately unknown how the situation changed after Marius' reforms and after the creation of the imperial army under Augustus. A greater intervention of private actors (the great generals of the last centuries of the Republic) or of the state (that supposedly started acquiring the equipment needed for the imperial army from the time of Augustus onwards) should have drastically re-shaped the situation, and also the increasing presence of the army in far provinces or along the frontiers of the empire could have impacted in the distribution and specialization of productive centers.

Sources and witnesses do not allow us to understand how much the new regime impacted on the artisan population of Rome. The Urbs probably remained the most important and rich market in the west even when the legions were deployed abroad: the city garrison was impressive and soldiers for sure had a need for skilled artisans and competent weaponsmiths, but the wealthy senators and equites and the social world connected with the imperial court represented a sophisticated and immensely rich clientele as well.

The city surely continued attracting the most talented artisans, who were eager to work at the heart of the empire for the richest and the most powerful buyers, but we have comparatively few information about this class. Possibly, the production shifted from something more "affordable" and intended for Roman citizens who wanted to join the army, to something more specialized as the production of luxurious parade equipment and the finest weapons for the praetorian guardsmen.

The necessity of limiting the diffusion of weapons could have influenced the development of Urbs market. Weapons control in imperial Rome could have been a particularly delicate topic. If a rebellion in a remote province of the empire represented a serious challenge to the princeps' authority already, an uprising right at the gates of the imperial palace could be

⁶⁵⁴ Cic. De Rep. 2,39; Dion. Halic.4,17; Liv. 1,43,3.

a deadly threat for the emperor. As it has been discussed in previous chapters, Romans apparently lacked a real legislation on the topic: having weapons was apparently allowed, the intention in carrying it or in accumulating it was however sanctioned.

Limiting the access to weapons to the population were a necessity, but it is unknown how this was implemented. If the production of “real” military equipment, weapons and armors to be used in war, was indeed controlled or even concentrated in the garrison *castra*, this could

The attestation of an *architectus armamentarii imperatoris* has been read as the evidence for huge centralized workshop, a sort of state *fabrica ante litteram* located in Rome:

C(aius) Vedennius C(ai) f(iilius) / Qui(rina) Moderatus Antio / milit(avit) in leg(ione) XVI Gal(lica) a(nnos) X / tran(s)lat(us) in coh(ortem) IX pr(aetoriam) / in qua milit(avit) ann(os) VIII / missus honesta mission(e) / revoc(actus) ab Imp(eratore) fact(us) evoc(atus) Aug(usti) / arc(h)itect(us) armament(arum) Imp(eratoris) / evoc(atus) ann(os) XXIII / donis militarib(us) donat(us) / bis ab(!) divo Vesp(asiano) et / Imp(eratore) Domitiano Aug(usto) Germ(anico) / [655

Vedennius Moderatus was a man of experience indeed, with a solid career in the army: he started as a legionary in th *XVI Gallica*, after ten years of service he was transferred to the *IX praetorian cohort* in Rome. Discarded *honesta mission*, Vedennius was recalled in service probably by Vespasian, under whom he fought in Judea and in Dacia as *revocatus* and later *evocatus* obtaining military decorations in both wars. Vedennius was clearly a man of war, a highly trained and experienced soldiers appointed to the office of *architectus armamentarii imperatoris* by Vespasian probably because of his vast knowledge of warfare⁶⁵⁶.

The appointment is however unknown and the inscription represents the only source about it. Domaszewski has argued that Vedennius was in charge of a central military workshop in Rome in which military equipment was produced and then sent to different locations⁶⁵⁷. The hypothesis is tempting but supplying all the soldiers scattered in the empire from it's heart should have been an impossible task considering the technology of the time: orders from every units from every provinces should have arrived at Rome, processed at the workshop and then the pieces sent to the various units, with a delay of months.

Passerini already highlighted the point, demonstrating the impossibility of such a solution, and he argued instead that Vedennius could have worked just for the praetorian cohorts and the other units garrisoned in Rome⁶⁵⁸.

⁶⁵⁵ CIL 6, 2725 = 6, 37189 = ILS 2034.

⁶⁵⁶ Forni 1981 pp. 176-177.

⁶⁵⁷ Domaszewski 1908 p. 25.

⁶⁵⁸ Passerini 1969 p. 74.

Due to the privileged status the praetorian guardsmen held in the Roman army, it does not seem impossible that their equipment was entirely provided by the emperor, while more common soldiers had to deposit part of their salary for supply and provisions. A workshop active just for the Roman garrison appears to be a more solid option considering also that *Urbs* was still able to recruit new units in case of need in the early empire, when the city was still not menaced by the barbarians but occasionally was under the threat of a civil war⁶⁵⁹.

It is unknown, in this second case, what had been the fate of civilian artisans in the town, who cannot compete against a state *fabrica* for the control of the most valuable market in the region: the imperial garrison itself. Because the *architecti* were put in charge of military infrastructures and even artillery pieces⁶⁶⁰, Vedennius could have been especially appointed by the emperor to be part of his general staff, for instance planning and organizing field works during a campaign lead by the emperor himself or by another high officer, or he could have even worked to develop artillery and war machines.

The idea of a central office in which schemes for weapons and artillery pieces were kept and developed is fascinating but probably highly anachronistic. A smaller workshop that produced for the urban garrison remains however a real possibility even if we lack a definitive evidence for that.

The picture that emerges from the rich corpus of inscriptions from Rome, and from Italy in general, is much more complex and multi layered.

Despite the productive world linked to weapons production and iron working remains somehow under-represented in comparison of other economic fields, Rome and Italy have restituted a unique abundance of epigraphic documents. Some inscriptions cannot be precisely dated, but from the whole corpus it appears clearly that imperial Rome was still rich in iron workers and knew a high degree in specialization.

Sword-makers are the most conspicuous group in the epigraphic corpus. The term *gladiarius*, gladius-maker, appears more often in Rome and in the rest of Italy. In the *Urbs* itself it is known by two inscriptions, two *tituli sepulcrales*:

CIL 6, 9442 = CIL 10, 1089, 152: *Dis Manibus / L(ucio) Novio L(uci) l(iberto) Felici / gladiario / Apollonius l(ibertus) patro/no bene merenti*⁶⁶¹.

The artisan appears to have been of relatively low social status, he was a freedman, and no

⁶⁵⁹ The organization of the legio I Adiutrix, originally recruited by soldiers of the fleet, decided by Nero as an extreme measure to face critical situation of the A.D. 68 seems to confirm that Rome had at the time vast resources in term of productive capabilities. For the legio I Adiutrix. See Lörincz 2000 pp. 151-158.

⁶⁶⁰ About field artillery and the role of Vedennius Moderatus see Cambpel 1984 p. 77, Evans 1994 p. 147.

⁶⁶¹ See also by Sinn 1987.

information about his place of work can be deduced. He was thus a civilian for sure, not a soldier, and it appears more likely he worked in workshop of some kind.

A *gladiarius* appears also in a list of freedmen of unknown date, together with a *cassidiarius*, an artisan specialized in crafting helmets:

CIL 6, 1952: *T(itus) Lessius T(iti) l(ibertus) Clarus / M(arcus) Antonius M(arci) l(ibertus) Dionysius / Q(uintus) Pinarius Quartio / C(aius) Manneius C(ai) l(ibertus) Chius / C(aius) Pulmonius C(ai) l(ibertus) Hilarus / T(itus) Fadius T(iti) l(ibertus) Philodamus / M(arcus) Viseri(us) Q(uinti) et l(mulieris) l(ibertus) Liccae(i) cas(s)ida(rius) // P(ublius) Trebonius P(ubli) l(ibertus) Eros / L(ucius) Modius Proculus praeco / L(ucius) Vibius L(uci) l(ibertus) Anteros / T(itus) Publilius T(iti) l(ibertus) Agathemerus / L(ucius) Novius L(uci) l(ibertus) Philemo / T(itus) Trebonius l(mulieris) l(ibertus) Priamus / M(arcus) Caedicius l(mulieris) l(ibertus) Felix gladiarius.*

The inscription simply presents a list of names of *liberti* and their wives. Among the names, two *liberti* are presented as a *cassidiarius* and a *gladiarius*. Once again, the two artisans were of a low social status and they were likely employed in some workshops of the city. Because of they do not appear as *liberti* of a same previous master, it seems unlikely that they worked together.

The inscription has been quoted as an evidence for the presence of *gladiarii* in the imperial Rome, but the huge presence of Greek names is suspicious, and the inscription shall perhaps be retro-dated to the Republican age.

One inscription dated to the imperial age from Rome seems to attest also the presence of *spatharii* in the city:

CIL 6, 9043 = CIL 11 156,16: *Salvius / Antoniae Drus(i) / spatarius.*

The short *titulus*, dated to the first half of the I century AD, does not provide many information, but it is noteworthy to highlight that the qualitative differences between the long *spatha* and the shorter *gladius* evidently required artisans with different skills and background.

Spatharii and *gladiarii* were active also in the rest of Italy during the Imperial Age. A *spatharius* is attested in Cividale del Friuli and *gladiarii* are known from Clusium and Capua, albeit many inscriptions are not easy to date⁶⁶². An inscription mentioning a *parmularius* has been interpreted as a reference to a shield-maker, although the term could refer also to a gladiator⁶⁶³. The presence of a *porticus Pallantiana Venationorum parmulariorum*⁶⁶⁴ could perhaps refer to an association of artisans in Rome. Once again, because the *parmula* was a small shield used in

⁶⁶² CIL 5, 1787 = 5, 8655; CIL 9, 7125.

⁶⁶³ CIL 6, 2196 = ILS 4969.

⁶⁶⁴ CIL 06, 9719 = ILS 7492

particular by gladiators⁶⁶⁵, it is noteworthy to signal the high level of specialization of those artisans and their presence near the richest and most prestigious market for their peculiar product.

A side note should be dedicated to the figure of the *hastilarius* that it is attested exclusively in Rome⁶⁶⁶ but for a single attestation from Timacum Minus, a military castrum overlooking a mine district in Moesia superior⁶⁶⁷.

The title appears in connection only with mounted units: beside the corps of the *equites Augusti*, that has restituted 17 inscriptions on a total of 18 evidences, the other military unit that had had at least an *hastilarius* during its history is the *cohors II Aureliana Dardanorum* that was *equitata* and *milliaria*.

Tarruntienus Paternus enlisted the *hastilarii* among the *immunes* spared from daily works, providing a solid ground to consider the *hastilarii* as weaponsmiths of some sort, possibly as spear-makers⁶⁶⁸.

It has been proposed that the *hastilarii* were attached to the *equites Augusti* to repair and maintenance of lances and other weapons⁶⁶⁹. Their absence from sources outside the two cases is however surprising and hard to explain, it could possibly due simply to a casual loss in the documentary corpus from the imperial provinces while in Rome a larger number of inscriptions fortuitously survived.

Rome and Italy demonstrated therefore a certain continuity with the Republican age: the pre-imperial productive network had not been completely replaced under the rule of the *principes* and the civil world continued to provide weapons and armors for the army.

The heart of the empire has provided a more abundant corpus than the rest of the empire in this respect. Few more mentions of sword makers come from the ancient province of Syria, where a *gladius* is known from Beyritus⁶⁷⁰, and from the Germania Superior, where a *gladius*-makers is attested in Vindonissa⁶⁷¹. Both inscriptions are dated to the 1st century AD. A *spatarius* is attested in Salona during the late antiquity, but the inscription is only vaguely dated⁶⁷². Slightly more recent are the already mentioned evidences of a *negotiator gladius*

⁶⁶⁵ Junkelmann 2000 pp. 76 and ff. See also Junkelmann 2000b pp. 113-117.

⁶⁶⁶ Denkm 557 = AllRoma 4, 6; CIL 6, 32848; CIL 6, 31153 = ILS 9079; ILS 2183; CIL 6, 31151; CIL 6, 31149; CIL 06, 31148; CIL 6, 31147; CIL 6, 31145; CIL 6, 31144; CIL 6, 31143; CIL 6, 03913 = CIL 6, 32807; CIL 6, 3284; CIL 6, 3226; CIL 6, 3192; CEACelio 34; BCAR-1993-01-157.

⁶⁶⁷ IMS-03-02, 48 = ILJug-3, 1304 = AE 1910, 00093

⁶⁶⁸ Breeze 1969 p. 54.

⁶⁶⁹ Breeze – Dobson 1993 p. 69.

⁶⁷⁰ AE 2005, 1579.

⁶⁷¹ CIL 13,11504.

⁶⁷² Cil 3, 8759.

from Mogontiacum, a retired veteran who opened an enterprise to sell swords to his former comrades during the 2nd century AD⁶⁷³, and the *loricarii* attested in Gauls, who could have worked in a sort of archetypical *fabrica* already in the 2nd century AD⁶⁷⁴.

In conclusion, if the presence of a true state arsenal cannot be confirmed beyond any doubt, despite it remains a fascinating working hypothesis, Rome provides a nevertheless a good case not only for the economic vitality of the civil society still under the rule of the emperors but also of the level of specialization reached in this peculiar aspects of the old world. Rome was probably the largest and richest of productive hub of the ancient world, but in a much smaller scale also other urban settlements of the empire could have had a similar productive pattern of specialized craftsmen and weapons-maker. At the same time, this early urban model could have furnished the model adopted to developed later logistic hubs, that apparently had maintained labor divisions and specialized skills in the productive chain.

⁶⁷³ CIL 13, 6677.

⁶⁷⁴ CIL 13, 4048 = Gallia 2011 – 317. See Also CIL 13, 2828 = ILS 7047 and CIL 2, 3359 (unclear, from Baetica).

Part II: The (cutting) edge of the Roman world.

Another methodological introduction.

The original idea for the present work was to account military workshops and other structures linked to military logistics in Roman Dacia, covering the whole period of imperial occupation of the Transylvanian plateau.

A surprising lack of logistic infrastructures and related data has emerged from the province since the very preliminary researches. Very few military workshops had been identified beyond any doubt and thus how the army deployed in the area was equipped and provided with all the necessary weapons and armours remains relatively unclear.

Because of the absence of systematic studies on the phenomenon, a strong methodological approach has been felt as needed as a preparatory step to introduce and discuss the material evidences found in Dacia. The first part of the present work has been thus dedicated to the analysis of literary evidences in order to provide a reasoned historical context of the development of military logistics during the first three centuries of imperial history. Written sources of different nature attest a rather complex development of military logistics.

No systematic nor coherent organization had been apparently adopted at the begin of the empire, and the army relied on various solutions depending on the provinces wherein troops were garrisoned. Even in later stages, local adaptations and exceptions appear to have been relatively common but general trends can be noted, however.

In the previous part, an approach based on the concept of strategic culture has been consequently proposed to frame the analysis of those general trends.

A certain tendency to adopt a more standardised equipment slowly emerged, reaching some peaks under the rule of those emperors who implemented ample military reforms. The necessity of assure the “monopoly of violence”, the need of more efficient use of natural and financial resources and increasing difficulties to manage external threat along the frontiers have obliged the imperial leadership to slowly develop a more centralized system in which larger logistic hubs played a much more important role.

The ultimate result of this evolution had been the state *fabricae* of late antiquity, but the steps of this development can be recognized in minor innovations adopted during the 2nd and the 3rd century AD. Large civilian manufactures became increasingly involved in military logistics, naturally evolving in supply bases for the army. This process appears to be more evident for the 3rd century AD, when archetypical logistics hub started appearing in inscriptions.

It is noteworthy to signal that this development appears to have been coherent with Roman approach to warfare at least as it appears in available sources. Gathering resources and workforce in well defended city or fortified position to sustain a prolonged war effort was a solution the Romans had adopted since the Republican times: it was evidently part of their strategic culture.

It can be therefore deduced that the imperial establishment adopted similar solutions to face similar problems, concentrating productive activities in temporary military bases to sustain prolonged and difficult engagements. The evolution from temporary hubs to more permanent solutions appears as a coherent response from Roman leadership to the military crisis of the 3rd century AD. The process itself had left traces in the continuous process of strategic culture construction, framing Romans response to problems from time to time.

A theoretical frame needs however to be tested on the ground to prove effective in analysing and interpreting the reality of the ancient world. For the case of the present study, the information from written and literary sources have been compared with the material evidences from the Roman Dacia. The approach adopted in the present work aims to provide a theoretical background for a specific historical context, using a greater paradigm as interpretative frame for an historical reality without proceeding in a rigid deductive way.

6. Romans and Dacians: a historical context.

The history of Dacia before the Roman conquest could appear of scarce importance in the present context, but a brief presentation of it can nevertheless be worthy to understand what the empire expected from that relatively remote and poorly known part of ancient Europe. According to Strabo⁶⁷⁵ Dacians, Thracians and Getae spoke the very same language, or at least dialects with a very same origin. Contemporary scholars recognized the three people as part of the same cultural family, but if differences really existed in the past, ancient authors were uninterested or incapable to appreciate them. According to Dio, who wrote in the 3rd century AD, Getae was the term employed by the Greek while Dacians was the word preferred by Latin authors, but the two terms applied to the very same peoples⁶⁷⁶.

While the Latin world was quite far away, the Hellenic civilization took contact with the Thracian world relatively soon: Thracians controlled the lands north-east to the Classic Greece, their kingdoms and tribes stretched from the Bosphorus to the Danube Delta. They were already known to Herodotus⁶⁷⁷ and Thucydides⁶⁷⁸, who both provided crucial information for the early history of those tribes. The Getae were settled further north, living off the lands along the Danube from the Haemus Mountains to the Black Sea. Getic tribes roamed also the plains from the Carpathian plateau to the Danube, the nowadays Oltenia, Banat and Muntenia in present day Romania, and the steppes north the Delta⁶⁷⁹.

Clear boundaries for those groups are unclear, as well as blurred appear the differences between Thracians and Getae. As far as ancient literary sources allow to push further the research, the Getae appeared to have been more exposed to influence from the cultures of the steppes, that arrived in the Danubian area in progressive waves.

Greek culture kept using Thracian to refer to the southern branch of the family, while the terms "Getae" were used for the tribes and principdoms settled nearer the Danube. Originally subjected to the Odrysian kingdom⁶⁸⁰, the Getae progressively arose as regional power. Philip II, father of Alexander the Great, lead two expedition north to his kingdom, reaching the Danube

⁶⁷⁵ Strabo 7,3,10.

⁶⁷⁶ Dio 67,6,2. Dio affirms also that they called themsevles "Dacians".

⁶⁷⁷ Hdt. 4,93-96.

⁶⁷⁸ Thuc. 2,96,1.

⁶⁷⁹ For an account: Oltean 2007 pp. 41-47; Ardevan-Zerbini 2007 pp. 10-20.

⁶⁸⁰ Hdt. 4,80. See also Thuc. 2,29,2.3. Getae marched together with the Odrysian king Sitalce against Macedonia: Thuc. 2,95-101.

and fighting the Getic tribes for the first time⁶⁸¹. The two campaigns are poorly known today, mostly because only few sources mentioned them, but the Macedonian army could have marched north as a reaction to the movements of the Scythian king Atheas, whose arrival in the Danubian basin altered the delicate equilibrium of the area⁶⁸².

Diplomatic initiatives followed the campaigns, and possibly as part of his attempt to reach an agreement with local powers, Philip took a local princess as a concubine⁶⁸³, but the front was still troubled few years later, when Alexander led another expedition in the area, clashing against some local dynasts and pursuing the enemy even north the Danube⁶⁸⁴. It is unclear how much strong the Macedonian grasp over the Getic tribes really was, but the clash between the Hellenistic world, now fractured in multiple kingdoms and various political entities, reached a dramatic peak few years later the fall of the glorious Alexander's empire.

The war between Lysimachus and the Getic chief Dromichaete was greatly echoed in surviving literature. The case is utter interesting. Diodorus spoke of two distinct campaigns against Dromichaete, the first led by Agatochles, son of Lysimachus, ended in a disaster: Agatochles himself was captured by the enemies. The diadochus himself commanded the second expedition but he did not achieve a better result. His army was led into a trap by the enemies, and Lysimachus ultimately felt hostage of his rival⁶⁸⁵. Pausanias referred to just one campaign but he knew two different results: in one version, Lysimachus himself was captured by the Getae, in the other he managed to escape but his son did not have the same chance⁶⁸⁶. Polyaeus maintained the existence of just one campaign, but he concluded the account with the implausible figure of one hundred thousand of Macedonian soldiers killed on the field and the death of Lysimachus himself⁶⁸⁷. At least Pausanias could have derived his account from a different source than the one used by Diodorus: a fragment of Memnon seems to confirm the existence of an alternative tradition on those events⁶⁸⁸.

The existence of so many variations it is noteworthy and it's a signal of the importance that the war had for the ancient historians. The narrative quickly assumed a moral value. In Diodorus' account, Dromichaete organized a "double" banquet for his prestigious prisoners: the Getae

⁶⁸¹ *Iord. Get.* 10,65; *Polyaen.* 4,44,1; *Frontin. Strat.* 2,4,20; *Just.* 9,9,1-4.

⁶⁸² Delev 2000 pp. 396-397.

⁶⁸³ *Iord. Get.* 10,65, who mentions Gudila/Guthila and his daughter Medopa/Medora, and *Ath.* 13,5, where are instead Kotelas and Meda.

⁶⁸⁴ *Arr. An.* 1,3,5 – 4,5; *Strabo* 7,3,8; *Diod.* 17,8,1; *Plut. Alex.* 11.

⁶⁸⁵ *Diodorus* 21, 11–12.

⁶⁸⁶ *Paus.* 1,9,6.

⁶⁸⁷ *Polyaen. Strat.* 7,25.

⁶⁸⁸ *Memnon* FGH 434 B, F 5.

were grouped and ate simply, while richer and more noble food was served to the Macedonians. As it has been already highlighted, the episode is likely fictional, and it represents a meaningful use of a trope whose most famous predecessor is the double banquet between Spartans and Persians in Herodotus⁶⁸⁹. In Diodorus' case, the banquet serves as an implicit accusation of Lysimachus' greed: while the Getae lived in a poor land, the Macedonians were already rich enough, their aggressions in the north appeared thus unjust and ill motivated. The military ruse adopted by Dromichaete became a recurrent element of the ancient technical literature on tactics: the stratagem has not only been mentioned by Polyaeus, who appeared to be more concerned with its tactical value and much less on its historical meaning, but it appears also in a fragmentary papyrus dated to 1st AD, when Lysimachus is mentioned among other kings and relevant political figures who ultimately met their fate in battle⁶⁹⁰. As it has been already highlighted, the text had a very clear moralistic intent and it follows that Dromichaete, and the Getae with him, became part of the Greek culture of war: Dromichaete was not view as a ferocious and bloodthirsty barbarian, but as a brave and clever leader who lead his men to victory against an overwhelming opponent.

As the Thracians, also the Getae appeared as fearsome warriors in Greek authors, and this Hellenic perspective on the Getae progressively reached the Latin culture. It is interesting to highlight how the Roman perceptions over the Geto-Dacian world had been progressively shaped during time. In particular, the more the Romans advanced into the Balkans, the more frequent and "intense" the contacts with the Geto-Dacian world became. The province of Macedonia spearheaded Roman penetration in the area, and from the ancient kingdom the Republic inherited a seemingly endless series of troubles along its northern borders⁶⁹¹. Roman forces lead by Scribonius Curius pushed north to the Danube a first time in 73 BC, defeating the Dardanians and the Moesians who, according to Suetonius, were of the same family of the Getae⁶⁹². Military actions were renovated the year after, when Terentius Lucullus moved to help the Greek Pontic cities against Mithridates and his allies⁶⁹³. The expedition was successful and established the Roman control over the region of Dobrudja for roughly ten years, when the governor of Macedonia, who was in the area with a substantial army, was heavily

⁶⁸⁹ Avram 2011 p. 70.

⁶⁹⁰ Avram 2011 pp. 71-73 for a discussion on this topic.

⁶⁹¹ See for instance Florus 39,3-6; Liv. 42,52.

⁶⁹² Liv. *Per.* 92 and *Per.* 95; Flor. *Epit.* 1,39,6; Eutrop. 6,2,2; Rufius Festus *Brev.* 7. Sallust. *Hist.* 4,18 about identity between Dardanians and Moesians. See also Wheeler 2011 p. 197: a Roman campaign against the Dardani and Bessi was launched in 83 BC, possibly as reaction to an embassy of the two peoples to Delphi in 84 BC.

⁶⁹³ Sallust. *Hist.* 4,18; Liv. *Per.* 97; Appian *Illyr.* 30,85-88; Eutrop. 6,10; Orosius 6,3,4. Suceveanu-Barnea 1991 pp. 23-24.

defeated in a pitch battle⁶⁹⁴. The moment suspiciously coincided with the rise to power of Burebista, the first Geto-Dacian king to succeed in extending his own authority over all the Dacian world.

Besides war, commerce played also an important in establishing contacts between the Getae, the Greeks and the Romans. Material evidences document such exchanges, and it is possible to appreciate the evolution of those contacts during the centuries. Coin distribution in Dacian area marks the rise of the Roman Republic as well, with a constant increase in Roman coins in the area. Unfortunately, those contacts have left few or no recognizable traces in the surviving literature: it is hard to know what or how much the Romans learnt through their merchants, spies or informers.

Interestingly, despite the contact between the Roman and the Geto-Dacian world can be traced back to the 3rd and 2nd century BC, the word “Daci” has been used for the first time by Caesar in a passage of the sixth book of the *De Bello Gallico*. Caesars is describing the remote regions of the *silva Hercynia*, whose borders extended until touching the lands of the Dacians and the Anarti:

*Huius Hercyniae silvae, quae supra demonstrata est, latitudo novem dierum iter expedito patet: non enim aliter finiri potest, neque mensuras itinerum noverunt. Oritur ab Helvetiorum et Nemetum et Rauracorum finibus rectaque fluminis Danubi regione pertinet ad fines Dacorum et Anartium; hinc se flectit sinistrorsus diversis ab flumine regionibus multarumque gentium fines propter magnitudinem adtingit; neque quisquam est huius Germaniae, qui se aut adisse ad initium eius silvae dicat, cum dierum iter LX processerit, aut, quo ex loco oriatur, acceperit. Multaque in ea genera ferarum nasci constat, quae reliquis in locis visa non sint; ex quibus quae maxime differant ab ceteris et memoriae prodenda videantur haec sunt*⁶⁹⁵.

“The breadth of this Hercynian forest, above mentioned, is as much as a nine days’ journey for an unencumbered person; for in no other fashion can it be determined, nor have they means to measure journeys. It begins in the borders of the Helvetii, the Nemetes, and the Rauraci, and, following the direct line of the river Danube, it extends to the borders of the Daci and the Anartes; thence it turns leftwards, through districts apart from the river, and by reason of its size touches the borders of many nations. There is no man in the Germany we know who

⁶⁹⁴ Regarding the disastrous campaign of Hybrida: Liv. Per. 103; Dio 38, 10. The episode is linked to the wars against Mithridates. In the complex network of alliances and rivalries, both the Republic and the Pontic king aimed to control the Greek *poleis* along the shores of the Black Sea. The defeat of Hybrida, who probably fought against an alliance of native tribes and Greek colonies allied with Mithridates, compromised the Roman grip over the area. See also Oltean 2007 p. 41; 46-47.

⁶⁹⁵ Caes. *De Bello Gall.* 6,25.

can say that he has reached the edge of that forest, though he may have gone forward a sixty days' journey, or who has learnt in what place it begins. It is known that many kinds of wild beasts not seen in any other places breed therein, of which the following are those that differ most from the rest of the animal world and appear worthy of record⁶⁹⁶".

The interests of Caesar for this remote region has caught the attention of modern researchers as well.

The Gallic Boi and the Dacians fought a war sometimes before the begin of Caesars' campaign in Gauls: the precise date is not known, nor are the details of the conflict but it has been hypothesized that the war started a wide chain reaction. Defeated, the Boi turned west and collapsed over the neighbouring tribes, ultimately driving off the Elvetians from their lands and pushing them further west, where they collided on the people already settled in Gauls⁶⁹⁷. It is unclear if voices of this remote war had reached Caesar, who *de facto* moved north to counter Elvetii's invasion, but the context of the very first use of the word "Dacia" in Latin literature coincides nevertheless with a wide chain of the events that has its origin in the lands beyond the Hyrcinian forest⁶⁹⁸.

Furthemore, according to several authors, Caesar considered to wage war against the Dacians the year he was killed⁶⁹⁹. The information did not fail to attract the attention of scholars since the passage is generally considered as trustworthy. Dacians had indeed fight alongside Pompey during the civil war. An alliance between Burebista and Pompey has been signed in 48 BC: the Dacian king promised troops to his Roman ally and at the same time he was *de facto* recognized in his right to rule over a substantial kingdom stretched along the Danube⁷⁰⁰. The troops never arrived in time probably, but after the win of Caesars, Burebista found himself on the losers' side of history. Imagining that Caesar wanted to retaliate against one of the last of his opponent's living rival seems logical, but the Dacia laid nevertheless quite far from the regions actually under the control of the Romans and an adventure north the Danube does not seem as the most likely output.

As it has been highlighted, the projected war against the Dacian became however a cultural precedent of the highest importance. This eastern front had been virtually left open after the

⁶⁹⁶ English translation by Edwards 1917.

⁶⁹⁷ Wheeler 2011 p. 198.

⁶⁹⁸ Caes. *De Bello Gall.* 6,25,2-3. The quote in Lica 2007 p. 69 to Macrea is however obscure.

⁶⁹⁹ Vell. *Pat.* 2,59,4; Plut. *Caes.* 58; Suet. *Caes.* 44,6 and *Aug.* 8,4; Appian *Bell. Civ.* 2,110.

⁷⁰⁰ The alliance between Burebista and Pompey is attested by IGB, I², 13. See also IGB I², 12. See Caes. *De Bello Civ.* 3,4,5-6; Appian *Bell. Civ.* 2,71; Dio 41,62-63.

death of Caesar, and claiming to pursue the last project of the *divus Iulius* became part of the propaganda during the last decade of the Republic.

Octavian, who lacked a serious military experience and who was therefore searching a military victory to boost his prestige, started campaigning against the Illyrians, claiming close a gap in Italian defences⁷⁰¹. Despite Octavian never really fought the Geto-Dacians, he started nevertheless to operate in a sensitive area for the Roman public opinion⁷⁰². The importance of the Danubian front appears much more clearly considering Antony's decisions to ask the command of the army deployed in Illyria for himself. Claiming to finally start the war against the Dacians planned by Caesar, the triumvir succeeded in putting himself in command of a powerful force⁷⁰³. The episode clearly shows how powerful was the topic for the public opinion at that time.

At the end of the Republic and until the first decades of the 1st century AD, Dacians were considered a real threat for the Republic. Strabo claimed that Burebista had successfully created a powerful state at the time, subjugating many of the surrounding peoples and frequently threatening the Roman territories with raids⁷⁰⁴, and the Dacian king could even gather an army of 100.000 men strong⁷⁰⁵. Burebista's empire crumbled after his death and four or five princes arose to contend the remains⁷⁰⁶. It is unclear how much power those chiefs really exercised over the other Geto-Dacians. Likely, Geto-Dacian society was divided in petty kings and dynasts loosely tied to any form of centralized power.

Political fragmentation of the north Balkan world left space open to political adventures and competition. The triumvirs tried to side with local powers to gain a substantial advantage in a key-area in sight of the inevitable war. Apparently, Antony searched to bring Dicoemes, a Geto-Dacian chief⁷⁰⁷, to his side to counterbalance the alliance between Octavian and another dynast in the area, Kotisos⁷⁰⁸.

It is noteworthy to highlight that Romans' politics in the Balkanic area entered somehow the public debate and was reflected by propaganda.

⁷⁰¹ App. III. 14-28.

⁷⁰² Illyrian tribes had inflicted a serious defeat to the Roman armies led by Gabinius and Varus a decade before, capturing also some legions banners: App. III. 12-13; App. Bell. Civ. 5,145M Dio 49,34,2. Gruen 1996 pp. 172-173 and Syme 2014 p. 265 have however argued that the Sava valley, targeted by Octavian in this occasion, had a high strategic value as well: the area allowed further campaigns in the north and protected the Italian peninsula from the east.

⁷⁰³ App. Bell. Civ. 3,37. See also Strabo 7,5,2, interpreted by Stefan 2005 p. 387 as a proof that the triumvir Antonius lead military campaigns against the Getae.

⁷⁰⁴ Strabo 7,3,11.

⁷⁰⁵ Strabo 7,3,13.

⁷⁰⁶ Strabo 7,3,11.

⁷⁰⁷ Plutarch. Ant. 63,7.

⁷⁰⁸ Svet. Aug. 63, 4.

Suetonius informs us that Octavian was apparently planning a marriage between his daughter and Kotisos⁷⁰⁹. What appear to be a non-trustworthy rumour may have revealed itself as part of Marc Antony's propaganda, who purposely tried to sabotage his rival by spreading fake scandals among the public opinion⁷¹⁰. It is not likely that one of the most powerful man in Rome was really interested in marry his daughter, whose diplomatic value was beyond any calculus, to a small prince, but it follows nevertheless that Roman still perceived the Geto-Dacians as dangerous barbarians: public opinion would be shocked if a highborn woman married such a barbarian king. Despite the Romans' concern about that tumultuous and savage Danubian world, they apparently did not have a clear ethnographic picture of it.

It is unclear if Roman élites lacked the intellectual and anthropological tool or if they were not really interested in analysing the situation in less superficial way. In Ovid's literary work, the Geto-Dacian world still appears in vague terms and, despite the poet experienced directly the world of the low Danubian basin, it is more often described using references to Greek classical works and culture⁷¹¹.

The nomadic nature of those people has been put in particular evidence by our poet, who indulged in describing them as wandering tribes that roamed the countryside in huge hordes. However, Ovid indulged in exploiting his vast erudite culture instead of recurring to his direct experiences of places and peoples. Herodotus and Thucydides still influenced Ovid's descriptions of Thracians, Scythians and Getae, even in the choice of terms. At the same time, Ovid proves to be an indispensable source for the arrival of the Sarmatian tribes in the region, a process that was ongoing between the end of the 1st century BC and the 1st century AD. Our poet mentions multiple times the newcomer in his work, this once again the distinction between this relatively poor known culture from the steppes and all the other well-established people in the area appears blurred once again.

Ovid did not intend to offer a scientifically accurate description of the ethnic situation in the Danubian area at the time, but this difficulty in clearly operating distinctions among the various non-Greek and non-Roman elements in the area persisted until later centuries. Roughly a contemporary of Ovid, Strabo stated that Scythian elements merged so deeply with Thracians

⁷⁰⁹ Svet. *Aug.* 63, 4.

⁷¹⁰ Charlesworth 1933 pp. 172-177. Contra Stefan 2005 p. 388 thinks that Octavian actually tried to contest Antony in the sector by searching for local allies. Stefan *Les Guerres Daciques*, 2005, p. 388. According to Wilkes 1996 p. 549, Cotiso could have been one of the four original heirs of Burebista reign.

⁷¹¹ See in general Batty 1994 pp. 88-111.

and Celts that it was already hard at that time to distinguish them, and on a much later date Dio assess that the Getae were “some sort of Scythians⁷¹²”.

The use of ethnic terms derived by Greek classical culture appears thus inconsistent and generally mischievous. As Batty pointed out, Ovid did have a deep knowledge of the area and of its habitants⁷¹³ and thus he reflected a culturally oriented approach to the matter in dealing with the ethnic situation relying more on erudition than autoptic observations. The fact that Ovid never mentioned the Dacians in his work has been interpreted as an evidence that Getae and Dacians were different peoples, reunited only by Burebista during his short-lived reign. Strabo presented indeed the Getae and Dacians as the same people, but he added also that the Dacians were settled in the Carpathians mountainous range while the Getae were settled in the eastern plains that stretched along the Danube from the mountains to the Black Sea⁷¹⁴.

It is possible therefore that Getae and Dacians were two separate groups, but whatever was the difference existing among them the Romans nor the Greek were interested or able to highlight. It could be therefore assumed that what has been written and known about the Getae, or even about the Thracians, became part of what Romans knew about the Thracian: in spite of contemporary evidences, Roman intellectuals still described that part of the world in a continuum the glorious Greek culture of the past.

Ovid was no exception in this tradition. As the Thracians were described in Greek literature, the Getae in the *Tristia* and in the *Ex Ponto* are defined by a menacing alterity to the Roman and the Greek world. While the communities of the newly born Augustan empire are urbanized and agriculturally founded, the nomadic nature of the Getic tribes was seen as a potential threat: that strong and warlike people was perceived as it was always on the verge to strike the civilized world.

While other poets had indulged in idealizing society of the Getae, seeing a superior moral justice in their simple and natural life, Ovid did not share this “rosseausque” vision. How Romans perceived the Getae and the Dacians seems to fluctuate between those two extremes, from an example of ethic virtues to an endless threat.

The reiterated attacks of those northern tribes to Roman provinces or ally probably confirmed the impression of having to deal with warlike and aggressive tribes. Despite the Roman

⁷¹² Dio 51,22,6.

⁷¹³ Ovid learnt indeed to speak some native languages: Ovid. *Tr.* 5,12,58; *Ex Ponto* 3,2,40. See also Geghman 1915 pp. 50-55.

⁷¹⁴ Strabo 7,3,12.

campaigns in the area are poorly known nowadays, sources mentioned many during the very first decades of the principate.

The Getae stroke once again the Doubrudja few years after the battle of Actium, roughly at the same time the province of Illyria was organized: two dynasts, Dapyx and Zyraxes, was met in battle and won by Marcus Licinius Crassus, who succeeded therefore in establishing again the Roman control over the area of Danube Delta after the defeat suffered by Hybrida forty years before⁷¹⁵. Dacians attacked the year again around the 11-10 BC, crossing the Danube while the river was frozen during the winter. This attack is particularly interesting since the Dacians operated alongside the Bastarnae, whose presence in the area is well known, and the newly arrived Sarmatians⁷¹⁶.

It has been hypothesized that a strong Roman reaction followed the aggression, but the chronology is rather unclear for the period. The campaign of Lentulus could have been the reaction to this Dacian attack as it has been proposed by Miltner⁷¹⁷, who argued in favour of a large-scale Roman operation in the area with multiple armies advancing along multiple directions. Mommsen⁷¹⁸ and Premerstein⁷¹⁹ have proposed that the actions of Lentulus, Vinicus and Catus should have been roughly contemporary, as well as did Reidinger⁷²⁰, who however postponed the action to the 11-12 AD. On the contrary, Syme proposed initially a chronological scheme in two phases: Lentulus counter attacked somewhere between the 6 BC and 4 AD and his action should be connected with the creation of the Moesia province, that emerged from this conflict as a Roman attempt to hold the frontier⁷²¹. He later modified his previous hypothesis, proposing instead that Lentulus' campaigns in the area should be dated to 9-6 BC⁷²²

In more recent times, Lica has noted that Syme earlier hypothesis (Lentulus' action dated AD 1-AD 4) does not explain well how the Dacians were able to strike again in 6AD, ravaging Moesia and forcing the governor to retreat from the ravenous hordes⁷²³. It is however an inscription found in Callatis during the archaeological campaign of 2000 that has radically changed the perspective on the topic: the epigraphic document confirms that Lentulus' action took place

⁷¹⁵ Dio 51,29.

⁷¹⁶ Dio 54,36, 2; *Res Gestae Divi Augusti* 5, 30, 47-48. The involvement of Sarmatians in the event has been argued by Pârvan 1926 pp. 77 ad ff.

⁷¹⁷ Miltner 1937 pp. 222 and followings.

⁷¹⁸ Mommsen 1883 p. 132.

⁷¹⁹ Premerstein 1898 p 157 and ff.

⁷²⁰ Reidinger 1956 pp. 24 and ff.

⁷²¹ Syme 1934 pp. 113-137. It is however accepted nowadays that Moesia province was created around AD 15 on the base of App. *Illyr.* 30.

⁷²² Syme 1955 p. 30.

⁷²³ Lica 2007 pp. 130-131.

rather in the area of the Lower Danube, where the Getae represented a real threat for the Greek *poleis* on the Black Sea shores. The events are unclear nevertheless, and it seems that the civil community of Callatis inflicted a sort of *damnatio memoriae* to Lentulus, but the reasons for this severe condemnation are unknown⁷²⁴. The document confirms however that Lentulus' political and military operations shall be dated between 9 and 6 BC⁷²⁵.

The empire was forced once again to take initiative between the end of the 1st century BC and the beginning of the 1st century AD. Strabo is our only source for this war, but the engagement should have been massive: Aelius Catus transferred fifty thousand men from the area North Danube into the Roman province⁷²⁶.

Augustus celebrated those success claiming that the Dacians accepted the supremacy of the Romans, but situation was different⁷²⁷. Aegyssus and Troesmis were attacked respectively in the 12 AD⁷²⁸ and in the 15 AD⁷²⁹ by local tribes, Getae if we strictly maintain the division between them and the western Dacians, and the Romans repelled the attackers with the help of the Thracian king Cotyso. Dacians attacked again at the beginning of Tiberius' reign in the 15 AD, being repelled one more time⁷³⁰, but after that the Danubian frontier appears to have been pacific for many decades, at least until the age of Nero. Interestingly, Dacians and Sarmatians operated together in many different occasions, striking at the same time or in rapid succession: Lentulus repelled Cotiso's army of Dacians and, the very same year, also a Sarmatians host that ventured south the Danube⁷³¹; Sarmatians and Dacians stroke again the 6 AD⁷³² and around the 17-18 AD Sarmatians waged war against the empire alongside the Getae⁷³³. Exploiting empire political situation and cooperating with other local powers are features that defined Dacians' behavioural pattern, demonstrating therefore a complex approach to foreign policy.

Romans recognized this attitude and considered the Dacians in a different way in comparison of other "barbarian" peoples. Frontinus' *Strategems* are highly informative in this respect. Maintaining a traditionally and ethnic-biased approach, Frontinus stylised different war-cultures highlighting and sometimes exaggerating their approach of war. While barbarian

⁷²⁴ Lentulus continued his career under Augustus and under Tiberius without any issues (see PIR² C 1379), it seems therefore that the *damnatio memoriae* was autonomously inflicted by the community of Callatis. See Avram-Ionescu pp. 173-174.

⁷²⁵ Avram- Ionescu p. 174.

⁷²⁶ Strabo 7,3,10.

⁷²⁷ *Res Gestae Divi Augusti* 30,1.

⁷²⁸ Ovid. *ex Pont.* 1,8,12-20; 4,7,19-20 and 45-54; Oros. 6,22,ii,

⁷²⁹ Stefan 2005 p. 390; Suceveanu-Barnea pp. 1991 pp. 33, 48-49, 58.

⁷³⁰ Ovid. *Pont.* 4, 9, 75-80.

⁷³¹ Flor. 2,28-29.

⁷³² Dio 55,30,4.

⁷³³ Ovid. *ex Pont.* 4,9, 75-80. See also. Svet. *Tib.* 41: " (...) Moesiam a Dacis Sarmatique (...) uastari neglexerit (...)".

warriors are generally described in their habit on the battlefield, for the Dacians Frontinus chose to present a truly strategic stratagem. A Dacian chief, Scorylus, is the protagonist of the anecdote: because of the empire was tore apart by a civil war, Scorylus' warriors urged to attack the Romans but the king was of a different advice. The wise chief let two dogs fight in front of the assembly and then threw a wolf among them: the hounds immediately stopped fighting, turned against the new arrived and faced the wolf together. Clearly, the hounds represented the Romans and the Dacians were represented by the wolf, an attack against the wounded Rome would have just forced the belligerent factions to re-unite against a common enemy⁷³⁴. It is unclear when this anecdote should have taken place, both the war between Octavian and Antony and the civil war that followed the death of Nero had been proposed as historical context for the anecdote⁷³⁵, but as far as it concerns the present study it is enough to signal that Scorylus has been portrayed in a very benevolent way: continuing a tradition of worthy kings, Scorylus appears in the stratagem as a wise and prudent leader, quite far from the stereotypical image of a barbarian.

The tendency of seeing the lost Roman values in the natural habits of the barbarians is a known *topos* in Roman literature, so that the scattered information we possess in this respect should not be over considered, but Rome and its establishment probably saw the tumultuous and rich Dacian world beyond the Danube in a revered way.

The confrontation between these two cultures burst in the most violent way between the end of the 1st century AD and the II century AD, when Domitian and Trajan lead massive campaigns against the Dacian kingdom.

As it will be detailed in the forthcoming paragraph, Decebalus is not alien to this tradition of clever and mighty king.

⁷³⁴ Front. *Strat.* 1,10,4.

⁷³⁵ Conole – Milns 1983 p. 194 trust in Frontinus' account and believe that Scorylo maintained a neutral behaviour contra Stefan 2005 p. 394 states that Scorylo ravaged the Roman lands. Due to the fact that at the time the Dacians were probably still divided in many political entities, it is actually possible that Scorylo remained neutral while other tribes marched into war.

7. The final stand of the Dacian world.

The arrival of the Sarmatians surely threw the Danubian area in a deep state of turmoil. The decision of Aelius Catus to move thousands of families from the areas north of Danube into the Empire was probably a consequence of the chain-reaction provoked by the arrival of the Sarmatians: the knights from the east needed land to settle in, and the defeated communities were probably pushed away from their lands.

Something similar had happened also during the reign of Nero. The episode unfortunately is known only by a one inscription detailing the career of Tiberius Silvanus Aelianus⁷³⁶. According to Conole and Milns⁷³⁷, the young Aelianus, son of Marcus and enlisted in the Aniensis tribus, started his career as *triumvir aere argento auro flando feriundo*. He became in succession *quaestor*, *legatus* of the *V Alaudae* in Germania and he reached the office of *praetor urbanus*. His career proceeded well under Claudius, when he followed the emperor in Britannia as a *comes*. He evidently benefitted of the highest support and he finally became *consul* in AD 45. Proconsul in Asia and finally *legatus Augusti pro praetore* of Moesia around AD 60- AD 67, when he resolved a major crisis that had engulfed the area at the time:

“He brought across the Danube into Moesia "more than 100,000 of the Transdanubians, along with their wives, children, chieftains and monarchs, to become tribute-paying subjects [*ad praestanda tributa*]. He suppressed an incipient disturbance of the Sarmatians, although he had sent a great part of his army to Armenia to the expeditionary force. He brought across to the riverbank which he protected, in order to pay homage to the Roman standards, kings hitherto unknown or hostile to the Roman people. To the kings of the Bastarnae and of the Rhoxolani he sent back their sons, (to the kings) of the Dacians he sent back their brothers, who had been captured or rescued from their enemies. From some of them he received hostages. By means of these actions he both secured the peace of his province and prolonged it. The king of the Scythians also was removed from his siege of Chersonesus which is beyond the Borysthenes. He was the first person to help from that province the grain-supply of the Roman people by means of a large quantity of wheat”⁷³⁸.

According to the *titulus*, the Sarmatians attacked while the provincial army was temporarily weakened: soldiers and troops had been sent in the east to participate in the war against the

⁷³⁶ ILS 986.

⁷³⁷ Conole – Milns 1983 p. 183.

⁷³⁸ English translation by Conole – Milns 1983 pp. 183-184.

Armenians, but Silvanus Aelianus, at the time *legatus* of Moesia, managed to repel the invasion. Military operations were followed by more diplomatic and political initiatives that aimed to strengthen the Roman grip in the region.

The restitution of hostages, captives and high-born relatives helped the *legatus* to spread the imperial influence among the Transdanubians, but the acceptance of one hundred thousand refugees in the Roman lands pushed this politics even further.

The exceptional measure taken shows how serious was the situation. Conole and Milns imagined that small groups entered into the province in a relatively disorganized way, but the situation is compatible also with the migration of larger communities: Silvanus Aelianus accepted those who willowed to pay taxes and accept the imperial law⁷³⁹. If the *legatus* was indeed trying to consolidate the Danubian frontier, communities and tribes with recognised chiefs were easier to manage and organize.

Silvanus Aelianus applied nevertheless a political response already known by the imperial establishment: Aelius Catus had allowed a similar movement in the past, probably while facing a crisis of comparable nature and proportions⁷⁴⁰. Despite the impressive action of Aelianus, the Danubian sector was still an open front for the empire and the fall of Nero proved to be a good occasion for Dacians and Sarmatians to strike together once again but, despite the difficult and chaotic situation, Roman defences managed to defeat the invaders.

The whole frontier remained apparently peaceful for less than two decades, when the hostilities were re-opened at the time of Domitian. Many difference causes have concurred in the loss of details and sources regarding the war between Romans and Dacians at this time. The *damnatio memoriae* inflicted by the Senate to the last of the Flavian emperors resulted in a distortion of the historical realities and a general confusion over the whole period. Since a huge historiographical debate already exists in the topic, for the purposes of the present work it will be enough to highlight the various moments that contributed in defining the relations between Romans and Dacians and how the empire looked at the regions north the Danube.

Tacitus defined the Dacians as *gens numquam fide*⁷⁴¹, but this harsh judgement has found no clear explanation in contemporary historiography. It has been suggested that Tacitus was simply adopting a stereotype without referring to a specific episode⁷⁴², but he could have also

⁷³⁹ Conole-Milns 1983 pp. 187-188.

⁷⁴⁰ Strabo. 7,3,10.

⁷⁴¹ Tac. *Hist.*, 3, 46,2.

⁷⁴² See Yavetz 1998 p.89.

intended to mention the breaking of a *foedus* that the Dacians had in the past signed with the empire.

Dacians were actually considered among the Roman allies by Augustus in his celebrative *Res Gestae*⁷⁴³ but no details are known about the supposed *foedus*, nor it is necessary to consider that the reference should have been to that specific treaty. An agreement could have been reached as a consequence of the campaigns undertaken during the reign of Nero. A female figure representing Dacia appears subjugated in the Aphrodisias Sebasteion, but the figurative element is intended to celebrate the power of the *princeps*, it does not imply the existence of a *foedus* between the Roman empire and the Dacian kingdom⁷⁴⁴. Despite literary sources make no mention of it, there are some reasons to presume that a minor conflict was fought between Dacians and Romans in the first year of Domitian's reign. The beginning of a new reign could have been a favourable moment to attack: Dacians possibly aimed to re-negotiate the terms of the *foedus* that tied them to the empire, or perhaps they tried to exploit a moment of relative weakness to strike before the new establishment could completely seize the power⁷⁴⁵. No details are known of this engagement, but the peace was not destined to last for a long time in any case.

According to our sources, Dacians opened the hostilities again fearing the "greed" of Domitian⁷⁴⁶. Surviving accounts are biased and tend to portray the last Flavian emperor in a very negative way, but if the Dacians really suspected that Domitian intended to suspend or diminish the subsidies they could have attacked to prevent this possibility.

Sources do not agree about which king started the war and the presence of multiple names has posed a huge problem to modern historiography. According to Iordanes and Orosius, the war was started by a king named Diurpaneus⁷⁴⁷, but this character does not appear in other sources. It has been thus proposed that the name appears as the result of the corruption of the text, but due to the differences between those two names this answer appears unsatisfactory.

Other scholars have proposed to consider Diurpaneus as the real name of the Dacian king, while Decabalus should have been a *Siegname* recalling his valour in battle but also this

⁷⁴³ *Res Gestae Divi Augusti* 30,1.

⁷⁴⁴ As proposed by Wheeler 2011 pp. 209 and ff. About the Sebasteion: Smith 1988 pp. 58-59 in particular. Interestingly, Smith link the presence Dacians, as well as of the Arabs, among the peoples subjugated by Rome directly to the time of Augustus.

⁷⁴⁵ Stefan 2005 pp. 392-393, 462, 698.

⁷⁴⁶ Iord. *Get.* 13,76.

⁷⁴⁷ Iord. *Get.* 13 : *cui provinciae tunc post Agrippam Oppius praerat Savinus, Gothis autem Dorpaneus principatum agebat*; Oros. 7,10, 3-4: *Nam quanta fuerint Diurpaneus Dacorum regis cum Fusco duce proelia.*

hypothesis does not appear very proficient⁷⁴⁸: the name Decebalus appears regularly in our sources and there is no reason to presume that ancient authors would have reason to prefer his honorific title instead⁷⁴⁹. Aiming to highlight the exceptional power and strength of the Dacians, many historiographic traditions have indeed insisted on the idea that the Dacians were at the time already reunited under the authority of one king⁷⁵⁰. This unity is however not necessary to explain why the Dacian world appeared so formidable to the Romans: powerful chiefs and dynasts represented a serious threat even if not united under a sole authority, as they did in the past, and even if they were tied to a central authority as vassals or allies or officers, they probably conserved a certain degree of autonomy.

According to this model, Diurpaneus could have actually been a chief based to the east of Sarmizegetusa, the seat of Decebalus' kingdom. It has been proposed that his stronghold was somewhere in the upper Olt (Alutus) valley, and possibly he reigned from the fortress of Buridava. Strobel argued even further and saw in Diurpaneus a powerful king that ruled over the historical regions of Wallachia and Oltenia, thus reunited in a mighty political entity⁷⁵¹.

If our sources are correct, he started the hostilities in the AD 84 attacking and ravaging the province of Moesia, inflicting a first blow to the Roman forces and killing the legatus of Moesia, Oppius Sabinus⁷⁵². Where Oppius Sabinus had been defeated is not precisely known, but Stefan has argued that the battle was fought around Adamklissi, in Moesia Inferior⁷⁵³. The site knew another major battle between Dacians and Romans during the first Trajanic war (AD 101- AD 102), and Trajan subsequently built the famous Tropaeum Traiani to commemorate the Roman victory against the Dacians.

West the Tropaeum, traces of an older construction has however emerged: it is possible that this second monument had been realised by Domitian in memory of the Romans soldiers fell in battle and during the war against the Dacians. If the hypothesis of Stefan is right, the first Dacian attack moved relatively far from Sarmizegetusa, possibly along the Alutus, and this is compatible with a king or a chief in the east.

⁷⁴⁸ For exemple, Gostar-Lica 1984 pp. 58-59 believe that Decebalus simply means "king (-balus, in which they seen an indoeuropean root connected with the idea of power) of the Dacians (Dece-)". See in general Dana 2007 pp. 42-47 for a discussion on the topic.

⁷⁴⁹ The famous stelae of Tiberius Claudius Maximus, the cavalryman of the VII Claudia legion who was in charge of the soldiers that hunted the Dacian king who avoided the capture only by suicide), actually recorded the name of "Decebalus". I see very few reasons for having used a Siegname in a case like this. See Speidel 1970 pp. 142-153.

⁷⁵⁰ Lica 2007 pp. 172-173.

⁷⁵¹ Strobel 1989 pp. 38-67.

⁷⁵² Iord. *Get.* 13, 76-77; Oros. 7,10,4; Tac. *Agric.* 41,2; Suet. *Domit.* 6,1; Eutr. 7,23,4.

⁷⁵³ Stefan 2005 pp. 400-402.

Roman counter attack started the year after and was led by the Praetorian Prefect in person, Cornelius Fuscus, but the imperial expedition was heavily defeated in the field, the *praefectus* and the banner of the Praetorian guard lost in the hands of the enemies⁷⁵⁴. Loss among the Roman armies were so heavy that it took more than a year to arrange a new army, the command this time entrusted to Tettius Iulianus. The new campaign proved to be more favourable for the imperial forces, and Iulianus' managed to overcome the Dacians at the battle of Tapae, opening the way to the Dacian capital⁷⁵⁵.

The subsequent phases of the war are even less clear. According to Dio, Iulianus' advance was halted by a mere stratagem, but this anecdote seems unrealistic: putting their weapons on top of spears and trees, Dacians deceived the Romans letting them think that a huge army was still blocking the mountain passes, but such a stratagem would have not stopped the Roman assault for too long⁷⁵⁶. The anecdote is indeed bizarre, but a similar stratagem can be found in Frontinus' collection⁷⁵⁷ and in surviving fragments of Crito's *Getica*, where the Romans, and not the Dacians, used it against the enemies⁷⁵⁸.

More likely, Domitian was forced to close the Dacian front because of Saturninus' revolt in Germany and the subsequent re-opening of the German front⁷⁵⁹. A king Duras appears at this moment in some textual tradition of Dio's account, but the name is otherwise unknown. Many scholars have rejected this character and they have consequently discarded the name as a corrupted form of either Decebalus or Diurpaneus, or even a part of the name of one king⁷⁶⁰.

Wheeler, following Stefan, considers Duras a "less warlike" king who had been forced by the situation to leave the power to the younger Decebalus⁷⁶¹. The hypothesis is tempting, and it does not seem illogical. Domitian desperately need to present the Dacian war as a success to match the glory of his father and of his brother and his propagandistic efforts show how strong was the ideological value of this conflict. If a change of king was the condition *sine qua non* for the peace between Romans and Dacians, Domitian could have presented this change as a sort of victory. Dacians, on their side, had their capital under the direct threat of the imperial army and could not continue the war longer.

⁷⁵⁴ Suet. *Dom.* 6.1; cf. Mart. 6.76.1-6; Juv. 4.109-112; Eutr. 7.23.4; Dio 67. 6.1 ff.

⁷⁵⁵ See Stefan 2005 pp. 408-414 about Tettius Iulianus' campaign of AD 88.

⁷⁵⁶ Dio 67,10,3.

⁷⁵⁷ Front. *Strat.* 1,5,22.

⁷⁵⁸ Souda *Gamma* 208 Adler = FHG 4, 374, frag. 1 = FgrHist 2, 932 fr. 6. See Russu 1972 p. 122 fr. 6.

⁷⁵⁹ Strobel 1989, p. 85 and Southern 1997 pp. 107-108.

⁷⁶⁰ The name appears in Dio 67,6,1. See the Loeb edition of Cassius Dio edited by Cary 1925 pp.328-329 note 1.

⁷⁶¹ Wheeler 2010 p. 1219.

A new king represented the optimal solution for both. Decebalus refused to leave Sarmizegetusa, possibly fearing to be captured by the Romans by deceit and sent his brother Diegis to Rome to be crowned by the hands of the emperor himself⁷⁶².

The ceremony had surely a huge impact on the public opinion, but the wounds inflicted by Sarmizegetusa were healing slowly. Despite the imperial propaganda, the war ultimately favoured Decebalus, who succeeded in securing his power and obtained subsidies and technical helps by the Romans: these very elements have been cited among Trajan's motivations to open the conflict again.

The discussion about the reasons for the conquest of Dacia will be accounted in the forthcoming chapter: the reason why the empire decided to occupy the future province of Dacia can be meaningful to understand how the province was organised. For the moment, it is enough to highlight that the war against the Dacians had been perceived by Trajan and by his entourage as impellent and necessary. Despite the undeniable importance of the two Trajan's wars, the campaigns are poorly known in their details due to the loss of the primary sources. Trajan's *Commentarii*, written in the style of Caesar's literary works, did not survive until nowadays, nor the historical works of Crito, emperor's personal physician, and the essay of Balbus, a civilian surveyor who worked alongside the imperial army, have been preserved⁷⁶³. Despite preserved in fragments and excerpts, Dio's account represents the most complete source at our disposal. The first war started in AD 101, when Trajan launched a vast operation against the kingdom of Sarmizegetusa. According to Stefan, who has written the most detailed account of Trajan's Dacian wars, the imperial army moved in two columns in a large pincer movement, aiming directly to the Dacian capital⁷⁶⁴. Once again, a decisive battle had been fought at Tapae, on the way for Sarmizegetusa, and the Roman victory on the field threatened the capital of the Dacians⁷⁶⁵.

Decebalus' seat of power was however an impressive stronghold, defended with massive fortifications and auxiliary fortresses. According to Stefan, Dacian military architecture was of Hellenistic nature and relatively complex for a kingdom in a *barbaricum*: far from being just fortified mansions, tower and "castles" built in the surroundings of Sarmizegetusa formed a

⁷⁶² Dio 67, 7, 2-3.

⁷⁶³ Trajan's Dacia: Priscianus *Instit. Grammat.* 6,13. Crito: Scarborough 1985 pp. 387-405 and Russu 1972 pp. 111-128. Bassus: Campbell 2000 pp. 205-206 in particular.

⁷⁶⁴ See Opreanu 2000 pp. 97-101 for a brief discussion.

⁷⁶⁵ Dio 68,8,1 and ff.

truly defensive complex, consciously built as protection for kings' capital⁷⁶⁶. Dacian towers and bulwarks were also capable of hosting artillery pieces, functioning as platform from which hurling projectiles against the enemy. Stefan's fascinating hypothesis has still found no general consensus, but it could explain the attention put in the Trajan Column to detail the difficult siege operation of the Romans.

Operating in such a hostile environment, with the enemies exploiting the harsh mountainous landscape to secure strong defensive positions, had been surely one of the hardest challenges for the imperial army.

The harshness of Carpathian winter interrupted the Roman advance, but the Dacians launched a surprising in Moesia, crossing the iced Danube. Xiphilinus' epitome of Dio makes no mention of this second front, but operations have been described in the Trajan Column: after having stormed Roman defences and sieged some installations guarding the river, Dacian warriors and Sarmatian cavalry swarmed in the Roman lands. Trajan reacted as quickly as he could and defeated the enemies in two pitched battle, one of which was fought at Adamklissi⁷⁶⁷. This reckless attack halted the operation against Sarmizegetusa, momentarily freeing the Dacian capital from the Roman grip, and thus it shows how complex Dacian approach to warfare could have been. However, it seems unlikely that Decebalus could have organized such a large-scale operation in the east if he was still under siege in Sarmizegetusa. Younger Pliny mentioned a Sarmatian king, Susegus, and this Decebalus' ally could have been put in charge to the attacks, but there are reason to presume that a vassal or a chief tied to Sarmizegetusa had his seat of power in the east and that this anonymous character commanded the Dacians in this occasion⁷⁶⁸.

In a very brief note, Dio reported that a certain "Maximus", for sure the *legatus* of Moesia Inferior Laberius Maximus, had captured a fortified position wherein he found Decebalus' sister⁷⁶⁹. When the operation against Sarmizegetusa started again in AD 102, Decebalus had lost every hope to hold the imperial forces and he consequently surrendered to the Romans. Among the reasons of this surrender, Dio expressively mentioned the capture of king's sister. As far as we know, women did not have political nor military power in the Dacian world, it is

⁷⁶⁶ Stefan 2005 passim and pp. 516- 517 in particular. See also Wheeler 2010 pp. 1195-1203 for a review of Stefan's work.

⁷⁶⁷ Stefan 2005 pp. 437-448.

⁷⁶⁸ Younger Plin. *Ep.* 10, 74.

⁷⁶⁹ Dio 68, 9, 3-4.

more likely that the highborn princess had married a powerful chief in the east to strength the alliance with this anonymous dynast and Sarmizegetusa⁷⁷⁰.

The whole eastern part of the Dacian world knew indeed a different fate, it was not organized under the province of Dacia since the beginning, remaining long-time under the authority of Moesia provincial governor⁷⁷¹, and no other campaigns are known on that front during the first or even the second Dacian war. Possibly, Romans forced this “vassal” to break his relations with Sarmizegetusa, isolating Decebalus in the core of his kingdom. Decebalus accepted, *obtorto collo*, the peace clauses imposed by Trajan: the king was obliged to dismantle his base of power by destroying his mountain fortresses, to give away his finest weaponry and also to hand down to the empire not only the prisoners but the deserters and the military technicians as well⁷⁷². Those imperial soldiers among the Dacians were particularly feared by the Roman establishment: they could train the Dacians, offering them an insight of the imperial art of war. Those clauses show well what the Romans feared of their enemies and how they perceived the Dacians. Saw from the provinces of the empire, Sarmizegetusa was the capital of a strong kingdom with a mighty and well-equipped army and impressive fortifications to block the routes across the mountains. The-high level of organization reached by the Dacians had been remarked multiple times by our sources. As a matter of fact, Romans were particularly conscious of their superiority in military affairs in comparison of the other European peoples and tried to conserve this advantage as much as they could. Tribes or confederations that succeeded in achieving comparable levels of organization were considered as particularly fierce opponents to fight. Tacitus’ opinion on the Chatti is particularly meaningful in this respect: this mighty German tribe could field disciplined and well-trained warriors; they could organize an efficient logistic support and entered the battle in well orderly ranks⁷⁷³. According to Crito, Dacians had a fairly complex and well organized society, with noble in charge of portions of the kingdom and with a strong army⁷⁷⁴. Trajan had faced a formidable opponent and he was surely determined to deprive the Dacians of their forces.

⁷⁷⁰ See Boragno 2018 for a more detailed discussion of the topic.

⁷⁷¹ See Opreanu 2000 p. 97 and 2006 p. 115-120; Poulter 1986 pp. 519-528; Petolescu 1989 pp. 178-189; Petolescu 2000 pp. 74-79

⁷⁷² Dio 68, 9, 4-5.

⁷⁷³ Tac. *Germ.* 30.

⁷⁷⁴ Souda *Beta* 388 Adler.

Together with the clauses intended to disband the military strength of the Dacians, Trajan imposed to Decebalus to share the same friends and enemies of the empire and, last but not least, obliged the king to host a series of garrisons in the southern part of the Dacian kingdom⁷⁷⁵. Sarmizegetusa was still formally independent, but *de facto* the empire ruled over the area, even if Rome exercised his power only in an indirect way. It is not clear why Trajan resolved not to depose Decebalus and occupy the kingdom, but for three years the peace was maintained. When the Dacian king felt the right moment was arrived, he led his warriors once again. Roman garrisons were slaughtered at the beginning of the AD 105, and the imperial forces marched north again to subdue the Dacians once and for all⁷⁷⁶. Despite the desperate resistance, Dacians had already lost the largest part of their strength at the time and could not halt the advance of the Roman legions. The king ran north, in regions still free from the imperial power, and tried to arise locals and other tribes to fight against the empire. After a long guerrilla war, Decebalus was finally reached by Roman soldiers and killed⁷⁷⁷. In the AD 106, the kingdom of Dacia ceased to exist, and the province of Dacia was finally organized.

Some elements recur both in Domitian and Trajanic wars in the area. The fact that the Roman army clashed with the Dacian warriors at Tapae and at Adamklissi both during the war of AD 84-89 and during the war of AD 101-AD 102 indicates not only that the two sites were along the main land routes of the region, but also that both the empire and the kingdom recurred to consolidate plan of action in case of war.

For the purpose of the present discussion, it is however noteworthy to signal that the Dacians exploited a large diplomatic network to consolidate their position in the area. During the war against Domitian, the Germanic tribes of the Quadi and the Marcomanni suspiciously refused to help the Romans against Sarmizegetusa⁷⁷⁸, and during the war against Trajan, Decebalus exploited his alliance with the Rhoxolans, settled in the eastern plains, to strike the province of Moesia. In the aforementioned letter in which it is narrated the story of Callidromus, the slave captured by the Sarmatians and the Dacians during the winter attack of 101 AD, Pliny the Younger explicitly refers to an attempt made by Decebalus to convince the Parthian king to attack the imperial provinces in the near east, thus forcing Trajan to stop his relentless attack. The project seems too ambitious even for the brave king Decebalus, but what appears to have been a mere piece of imperial propaganda, possibly used to justify the imminent Parthian war

⁷⁷⁵ Dio 68, 9, 4-5.

⁷⁷⁶ Dio 68, 12, 4-5.

⁷⁷⁷ Dio 68, 14,3.

⁷⁷⁸ Dio 67, 7,1

in front of the public opinion, could nevertheless show what Romans feared: a kingdom strong enough to reunite the enemies of the empire in a vast and powerful coalition.

What the imperial establishment perceived influenced the strategical decisions taken in occupying the area. The forthcoming paragraph will discuss how province of Dacia was organized and why.

8. The Bulwark.

8.1 - A geographical problem.

The fall of the Dacian kingdom left the Romans in control of a large and rich area. The development of the provincial organization of the area will be detailed in a forthcoming paragraph, but apparently the core of Decebalus' kingdom was reorganized under the province of Dacia, that extended from the northern Transylvanian plateau to the Danube river.

It is noteworthy to signal that the area in which the Moesian army had operated was not integrated in the newly created province, but it was put under the authority of Moesia Inferior *legatus*⁷⁷⁹. This odd separation of the two areas is meaningful nevertheless: because Romans tended to organize a province according to the previous boundaries of the kingdom or the people subjugated, it is highly possible that the eastern plains occupied by Moesian army were actually perceived as a political entity distinct and separated from Sarmizegetusa.

The aforementioned distinction between the Dacians settled in the mountainous regions of the Carpathians, and the Getae who inhabited the eastern plains⁷⁸⁰, a distinction known by Dio⁷⁸¹, could have had political implications therefore. If Decebalus' sister had indeed married one of his brother's allies, this unnamed chief in the east could have been relatively autonomous and this could explain why the more eastern conquests in the area were not organized with the land of the defeated Dacian kingdom.

In any case, the area occupied by the Romans resembled a "bulwark" deeply extended into the barbaricum. Surrounded on three sides by tribes and peoples that still did not accept the authority of Rome, the province was linked to the empire only by a relatively narrow strip of land wherein ran the most important land routes that stretched from the Danube up to the mountains. The Carpathian represented themselves a formidable obstacle and the access to the Transylvanian plateau, the rich heart of the Dacian province, was possible only through few and narrow mountain passes⁷⁸².

Naturally well defended and garrisoned with a strong army, the province of Dacia has appeared in the eyes of modern historiography as a powerful strategical platform from where the empire could overlook and possibly threat its foes. From a modern point of view, the strong position of

⁷⁷⁹ Petolescu 1989 pp. 179-189 and 2000 pp. 74-79. Ardevan 2010 pp. 279-289.

⁷⁸⁰ Strabo 7,3,12.

⁷⁸¹ Dio 67, 6, 2.

⁷⁸² See in general Oltean 2007 pp. 26-40.

Dacia appears undeniable: despite being isolated, the province had vast natural resources to exploit and were strongly defended by an almost perfect circle of stepped mountains and hills. Because the region appears so favourably positioned, Luttwak has argued that the conquest of Dacia had been purely motivated by strategic reason⁷⁸³.

Considering the vast echo that Luttwak's hypothesis have had in the academic debate, and the peculiar role that Dacia has in it, it could be noteworthy to discuss his approach in order to understand the way the province was organized and eventually how the choices in matter of provincial administration and military deployment could have impacted on military logistics in the area.

Luttwak's concept of "power" represents the potential output of the whole system, in this case the capacity of the Imperial establishment, and of the empire as a whole, to interact against external political entities both in a peaceful and in an aggressive way⁷⁸⁴. Power comprehends financial, military, human, cultural, and even geographical resources: it determines how the empire was perceived and, perhaps, how much it was feared. Power grows and falls over time and this dynamic depends on how cost effective the force is used in different situation. Differently to power, that appears rather as a characteristic of political entity, force is a sort of energy, or a resource, that could be spend to impose power⁷⁸⁵.

Contrary to the application of power, using force depletes the energy of a state. Waging war against external enemies is the most obvious and evident case, and gathering and moving massive armies represent indeed a particularly huge expense for a state, but also using "financial" forces to set a dispute or to strength a diplomatic initiative can be extremely expensive for a state.

The dynamic relation between power and force is the interpretative key of Luttwak's model⁷⁸⁶, according to which the Empire underwent through three different stages of overall military organization, each one defined by a different balance between "power" and "force".

At the beginning of the imperial history, the model is defined by a particularly favorable cost-effective balance: Roman military forces were concentrated in the internal provinces of the empire while allies and "vassals" hold the peripheral areas, creating a sort of frontier zone that functioned as a sort of buffer between Rome and other powers⁷⁸⁷. By avoiding to deal with the

⁷⁸³ Luttwak 1976 pp.

⁷⁸⁴ Luttwak 1976 p. 365.

⁷⁸⁵ Luttwak 1976 pp. 366 and 371.

⁷⁸⁶ The importance of the dynamic between power and force in Luttwak's model has been recognised by Mann 1977 p. 176 and Kagan 2006 pp. 333-362.

⁷⁸⁷ Luttwaj 1976 pp. 20-98.

so called “low intensity threat”, the imperial forces conserved their energy to consolidate the Roman dominion or to extend it, but the system worked at the expense of a relatively inferior direct control and many regions still knew a sort of autonomy.

Luttwak partially fails to explain why the imperial establishment shifted to a second model, that started to be imposed from the reign of Vespasian and lasted until the late 3rd century AD. This second phase appeared to have been characterized by the disappearance of the vassals and allies and the subsequent massive concentration of troops and legions along the frontier. Frontier areas were re-organized and an impressive line of fortifications were implemented: military camps became permanent bases, often rebuilt in bricks and stone, and fortified roads that ran along the borders assured easy and safe communication, allowing the soldiers to patrol the border and react quickly to face any possible threat⁷⁸⁸.

Despite Luttwak’s image of heavily fortified borders has given the impression that the empire was living a sort of “Maginot-line” syndrome⁷⁸⁹, the model does not contemplate this possibility: Luttwak explicitly states that imperial borders were not intended to be a close and impenetrable barrier, a true fortification against which enemy will crash like waves on rocks, but the system rather functioned as permeable frontier⁷⁹⁰. The purpose of the lines of watchtower and *castra* or even the linear defenses (*valla* and trenches) was not to put the empire under a perpetual state of siege but to control and manage the frontiers instead, eventually helping the imperial soldiers to contrast raiders and brigands⁷⁹¹. The whole system was not actually effective against enemies capable to field large armies and to launch massive attacks against the empire: the army held a relatively narrow strip of land along the frontier and it could not rapidly gather to face a potential threat.

During this second phase, the empire assumed the same role it had been previously entrusted to vassals and allies, that declined as a consequence of this overall strategic reassessment. The adoption of this new system was possible because of the absence of enemies that could really challenge the Roman dominion and it was partially motivated by this situation⁷⁹².

The concept of “strategic frontier” assumes in this context a particular relevance. The term of “strategic frontier” has been apparently used for the first time by Disraeli in a speech

⁷⁸⁸ Luttwak 1976 pp. 98-238.

⁷⁸⁹ Wightman 1978 pp. 174-179.

⁷⁹⁰ Luttwak 1976 pp. 121; 131-136.

⁷⁹¹ Luttwak 1976 pp. 123-127.

⁷⁹² Luttwak 1976 pp. 140-141: ideally, Roman forces should have spotted potential enemies by far and moved to intercept invading forces in the *barbaricum*, sparing the provinces of the empire and their population as much as it was possible.

pronounced in 1878, at the vigil of the British war in Afghanistan⁷⁹³, and later theorized and re-proposed in a brief essay by Andrew whose title was indeed “Our Scientific Frontier”⁷⁹⁴. At the time, the authorities of the British empire were trying to secure the north-western corner of India and the line Kabul-Ghazani-Kandahar was considered the optimal frontier from a social, military and economical perspective: the frontier did not over extend the line that soldiers had to hold in case of war, it was possible to organize an efficient logistic network to support the military engagement in the area but the overall cost of the frontier was manageable and not particularly expensive.

The very concept of a scientific frontier later entered in the academic debate and its adoption in the first edition of the Cambridge Ancient History determined the success of the idea of “scientific frontier” in particular in the field of the study of the Roman empire⁷⁹⁵. According to Wheeler⁷⁹⁶, Luttwak derived the use of the terms from the first edition of the Cambridge Ancient History, and he applied the notion to interpret the work of other authors, among which Syme is the most prominent⁷⁹⁷. It is noteworthy to signal that Luttwak adopts the notion of “strategic concept” as interpretative key even in cases wherein the term had not been used to describe the reality of ancient Roman frontiers. A “scientific” frontier appears thus defined by its length and by the exploitation of morphological features to improve connections and military defenses.

Dacia should have been part of this larger and wider plan, but the conquest of the region did actually stretch the length of the imperial borders. The peculiar form of the Dacia added one thousand Roman miles of borders⁷⁹⁸, a long frontier that imperial soldiers had to patrol and defend. Dacia required a massive army indeed to be properly garrisoned, and this extreme military effort should have heavily impacted on the imperial treasure and the whole management of Roman manpower and finances.

Curiously, models that account for Romans’ strategic decision apparently cannot admit a possible mistake from the imperial establishment: despite the province of Dacia did not respect the logic of the “strategic frontier”, Luttwak saw a strategical reason in its conquest nevertheless. In the case of Dacia, the empire was not trying to shorten the borders it had to

⁷⁹³ See Davies 1974.

⁷⁹⁴ Andrew 1880.

⁷⁹⁵ Anderson 1934 p. 780.

⁷⁹⁶ Wheeler 1993a p. 26.

⁷⁹⁷ Syme 1934b p. 375. Cf. Syme 1988b p. 250.

⁷⁹⁸ Eutropius had roughly estimated the total length of Dacian borders in his *Breviarium ab Urbe Condita* 8,2,2. The same information can be found in Festus 8,1-5 and *ord. Rom.* 217.

defend, but it aimed instead to occupy a strong position from where the army could control a vast portion of the *barbaricum*. The image of the bulwark is more than a metaphor in Luttwak's hypothesis: it fully assumes a strategical meaning⁷⁹⁹. Purposely creating an advanced platform, the imperial establishment wanted to deploy the army in an advantageous position from where controlling potential enemies was possible by threatening them from multiple fronts. Moving from the safe of the Transylvanian plateau, very hard to assault because of the steep slopes of the Carpathian Mountains, the army of Dacia could collapse on the rear of the Sarmatian tribes in the Bohemian plains or on the flank of the Roxolans in the east while the rest of imperial army could march north from the Danube and catch the enemies in a deadly pincer movement. Even the German tribes settled near the sources of Danube and Rhine, notably one of the most delicate sectors of the Roman frontier in Europe, were not beyond the reach of the provincial army.

In this sense, Dacia appears in Luttwak's hypothesis as a coherent part of a centrally planned attempt to maximize the cost-efficiency of the military apparatus of the empire. The use of economic and military resources to achieve political goals, such as the conquest of a region or the consolidation of emperor's power, can be thus properly defined as a "grand strategy". Conquered during the second phase of this imperial "Grand Strategy", Dacia presented however some singularities in matter of how the military presence in the province was organized. Because of its peculiar function, soldiers were garrisoned not only along the provincial borders military camps and bases were spread also in the interior of the province. This feature could have been necessary to assure the best defense possible. It appears to have been regulated by the same principle that Luttwak defines as "defense in depth": deploying a military force in multiple lines assures a faster and better response against a potential invasions and forces the enemies to advance through fortified depots, constantly exposed to attacks to the rearguard and to the threat of losing the logistic lines⁸⁰⁰.

The defense in depth system was designed to deal in particular with high threat and to match large scale invasion, it thus can be argued that Dacia was considered a particularly exposed province wherein military defense was a strategical priority, and its adoption empire-wide confirms the difficulties experienced by Rome from the 3rd century onwards. This is arguably the most "famous" and debated part of Luttwak's work.

⁷⁹⁹ Luttwak 1976 pp. 141-145.

⁸⁰⁰ Luttwak 1976 pp. 238-308.

According to our author, the empire homogeneously adopted a deeper defensive system during the 3rd century AD and this third strategic phase lasted until the fall of the Western part of the empire.

The implementation of the defense in depth represented thus an attempt to adapt to a different strategic situation: pressure on the imperial frontiers progressively became unbearable and the empire itself was, for the first time after centuries of absolute superiority, threatened by enemies that were able to launch large scale invasions and openly aimed not only to raid and pillage the Roman provinces but also to conquer entire regions and to settle inside the Roman dominion. The multiple lines of defense were pressingly intended to slow down an invasion and assure the highest and safest mobility possible to the Roman troops. An extend network of military infrastructures were put in place: watchtowers and outposts could spot a potential threat from afar and spread the news, fortified depots and bases simplified the logistics, prevented potential invaders to threaten the supply system and allowed troops to move and gather faster without bringing all the food and tools needed during the marches⁸⁰¹. The downside of the system was that a larger area of imperial lands was “militarized” and, because of it was more exposed to enemies, became thus less economically advantageous.

All considered, the defense in depth was probably the best possibility for the empire to hold against its multiple enemies, but this strategical approach forced nevertheless Rome on the defensive. Luttwak firmly holds on the idea that the empire slowly abandoned the initiative in matter of foreign policy, progressively focusing on preserving its territorial dominion⁸⁰². In this new passive stance, Dacia proved to be indeed too expensive to hold and it was thus abandoned: despite the impressive natural barriers that surrounded the imperial province, the region could be hold only thanks to an impressive garrison⁸⁰³.

The strategic value of the region was however in his possibility to function as a platform to launch aggressive operation against the enemies, but if the empire, as Luttwak firmly believes, ceased any aggressive policy, it should be concluded that Dacia had completely lost its function at the time. The abandonment of the region appears therefore completely coherent with the model proposed and was motivated by the necessity to short the borders and spare as much as military forces the empire could in that time of desperate need.

Debating Luttwak’s hypothesis could be seen as not worthy for the context of the present work, but his model bears important consequences nevertheless. As a province with a strong if not

⁸⁰¹ Luttwak 1976 pp. 246-249.

⁸⁰² Luttwak 1976 p. 258.

⁸⁰³ Luttwark 1976 pp. 286-292.

predominant military nature, it seems logical to presume that Dacia was organized since the beginning to achieve its strategical purpose.

The presence of multiple lines of *castra* and a dense network of military infrastructures can be consequently interpreted⁸⁰⁴. If indeed Dacia was exposed to external invasions, the distribution of military bases all over the province could be seen as a “defense in depth” structure, with supply depots along the major roads and logistic bases in key point to sustain the war efforts even during the most intense engagements.

However, in this case the model provides the interpretation of data in a deductive way, but what if the model proves wrong?

Luttwak’s hypothesis has provided the first homogeneous interpretative model for the history of the Empire, framing the research not only from the perspective of the military history but proposing also a coherent paradigm to account the use of economic and financial resources by the imperial establishment. Advancing a unitary principle for the Roman history has been ground-breaking from many points of view, but it has also heated a strong debate on the worth of this approach.

The debates itself resembles and recalls the academic reaction to the well-known Popper-Hempel theory about the so-called general laws and their application in the field of ancient history. In both cases, the epistemological value of the deductive method in human sciences has been hardly questioned by scholars and generally disregarded as an alien approach to the field. Many scholars have pointed out that the academic background of Luttwak is not a classicist one strictly speaking. Despite “The Grand Strategy of the Roman Empire” represented our author’s final dissertation for the PhD in ancient history, Luttwak came mostly from strategic studies and he have worked as analyst and military counsellors for the United States at the highest level. Luttwak’s approach appears indeed extraneous to the field of ancient history and it is defined by the use of many conceptual and theoretical tools that are not shared by classicists⁸⁰⁵. Technical errors and a sometimes-naïve use of sources by our author have been often highlighted in scientific reviews, and indeed Luttwak tends to rely more on contemporary and modern studies rather than on primary sources⁸⁰⁶. The image of the ancient world that results as a consequence is indeed excessively schematic. Luttwak seems unable to appreciate the differences existing between the numerous frontiers of the empire and among the enemies of

⁸⁰⁴ See Gudea 1979 pp. 63-87.

⁸⁰⁵ Gruen 1978 pp. 563-566 has harshly concluded that such hostility has been mostly motivated by the desire of classicists to preserve their authority over the field from any intromission. See also Wheeler 1993a pp. 8-9.

⁸⁰⁶ MacMullen 1977 pp. 930-931; Wells 1978 pp. 527-529.

the Romans, thus describing the empire as a homogenous world, ruled from his heart by a solo will.

Reality of the ancient world was surely different. Romans recognized different tactical and strategical approaches among their enemies. Frontinus' manual, for instance, referred different stratagems to different nations and peoples, stereotyping the "barbarians" in different ways. See for instance the Ligurians⁸⁰⁷, whose prowess in fighting in woods and mountains is highlighted twice in the book, the skirmishing tactics of the Numidians⁸⁰⁸ and the "hit and run" tactics of the Skythians⁸⁰⁹, who were celebrated for their ability in bating the enemies with fake retreats followed by devastating counter-attacks, and the amphibious assaults of the Illyrians⁸¹⁰.

Romans knew that the Chatti fought in well-organized ranks of infantry⁸¹¹, that the Rhoxolans and the other Sarmatians entered the battlefield with a strong heavy cavalry and they had in the highest esteem archers from the east, Palmyreans in particular. This stereotypes-based approach for the analysis of different people's approach to warfare was maintained for long and can be appreciated also in the 7th century AD Mauritius' Strategikon, wherein tactics and strategies of the enemies of the empire appear heavily stylised⁸¹². Nor the geographical features of the frontiers were the same. The Rhine and the Danube in Europe represented more a route of communication than a barrier and the army were garrisoned in relative fertile lands, but the situation in the eastern or in the African front was completely different. Vast desert areas in Africa and in the east proved to be barriers much more effective than rivers, even the largest and most impetuous of Europe. A large army could march in such arid lands only at its own peril, on the other hand the Romans held those difficult borders by securing water sources and garrisoning the soldiers in oasis and other livable areas.

Despite the numerous technical mistakes and naiveté in Luttwak's approach, the distorted image of the ancient world that results in "Roman Grand Strategy" is mostly a consequence of a strong base assumption that Luttwak holds for all the essay. As many scholars

⁸⁰⁷ Front. *Strat.* 1,5,26; 3,9,3.

⁸⁰⁸ Front. *Strat.* 2,1,13; 2,5,40. Cf. Caes. *Bell. Civ.* 2,40-42; Appian. *Bell. Civ.* 2,45; Dio 41,41-42.

⁸⁰⁹ Front. *Strat.* 2,4,19; 2,3,5.

⁸¹⁰ Front. *Strat.* 2,5,28; 2,5,43.

⁸¹¹ Tac. *Germ.* 30.

⁸¹² The whole eleventh, and last, book of Mauritius' Strategikon is entirely dedicated to teach how to battle against Persians (Maurit. *Strat.* 11,1); "Skythians", a category that actually represented a large variety of "nomadic" peoples and tribes (Avars, Turks and peoples whose habits resembled those of the Huns) (Maurit. *Strat.* 11,2); "blonde haired" westerners (Franks, Longobards) (Maurit. *Strat.* 11,3); and the Slavs (Maurit. *Strat.* 11,4).

have already pointed out⁸¹³, Luttwak presumes that the imperial establishment saw the ancient world as a modern analyst would have done and thus behave as a consequence.

Luttwak's approach appears indeed to have been almost entirely based on Clausewitzian principles and on the assumption that the Romans shared those very same principles. Applying modern strategic concept to ancient history means to annihilate the differences existing between the Romans of the past and today analysts and commanders without taking into consideration the cultural and technological gap. Assuming that the Roman élites thought and behave as we do today provide a useful paradigm for the research but tends also to bend the interpretation of available data. Luttwak's hypothesis has been questioned for many aspects and different approaches have been proposed as alternatives.

While many reviews have simply highlighted the numerous theoretical and methodological difficulties, Mann has proposed in his review a much more complete rebuttal and he has advanced an alternative model to account the expansion of the Roman empire⁸¹⁴. Luttwak's rigid and schematic image of the imperial frontiers finds no confirmation in Mann, who in his own turn proposes a much more dynamic and diverse situation. The military and social world of the Roman borders was not the same in every part of the empire, nor it remains the same during the centuries.

The situation over the frontiers was dynamic and constantly evolving and changing. The so called "Danubian *limes*" makes a good example for this. The arrival of the Sarmatian tribes in the area represented for sure a turning point for the region, and the growing power of the Dacian kingdom surely change the balance of power in the area.

Furthermore, Mann notes that in Luttwak's model the history of the imperial establishment appears as a continuum, with no solution of continuity even when the change at the peak of the empire was the consequence of a conspiracy or a violent civil war⁸¹⁵.

Luttwak offers no explanation to account this surprising continuity in Roman foreign policy but he postulates nevertheless that the imperial establishment maintained the same strategic and political goals during the centuries despite the usurpations, the civil wars and the violent deaths of many emperors tore apart the unity of the empire more than once. On the contrary, Mann denies this fictitious continuity and proposes as an alternative that every dynasty and every prince developed his own political agenda. Without a unitary strategic principle to drive and

⁸¹³ MacMullen 1977 pp. 930-93; Wightman 1978 pp. 174-179.

⁸¹⁴ Mann 1979 pp. 175-183.

⁸¹⁵ Mann 1979 pp. 177-179 in particular.

to limit the expansion of the empire, the dynamic of empire evolution might appear less clear if not completely casual.

Luttwak has argued that the Roman army was effective only against enemies with “fixed assets”, as cities and fields that can be attacked and occupied by the powerful but relatively slow imperial military force. Nomadic tribes and peoples proved to be a much harder enemy to manage, a foe that could relocate his resources and preserve in this way his full strength to endlessly renovate the hostilities⁸¹⁶. The reason to stop the advance of the empire was therefore pure strategical. Once again, Dacia represents a surprisingly good example for this assumption. The Romans occupied the kingdom of Sarmizegetusa, whose power lied in what Luttwak calls “fixed assets”, but they never managed to overcome the Sarmatians, whose culture was defined by those mobile assets that continuously escaped the gargantuan imperial military organization.

Mann⁸¹⁷ has proposed instead a more intuitive approach, and he has argued that the Romans conquered and managed to hold those regions that could sustain the Roman society based on agricultural exploitation and urban settlements. Wherever the climate was too harsh or the land did not present profitable characteristics, the Romans resolved not to engage in large military actions and arrested the expansion of the empire so that the richest lands of Europe, Africa and near east lied under the power of the emperors.

It is noteworthy to signal that Dacia in particular, considered by Luttwak as the highest possible example of scientific frontier, is interpreted in this case in the opposite way and it is presented as the most expensive and strategically useless conquest possible.

The multiple lines of *castra* become in Manns’ rebuttal an effect of a poor organization and not of the inspired management of the whole area: the imperial establishment simply deployed in the province too much troops, and the consequence was this partial overlapping of military bases⁸¹⁸.

Mann’s hypothesis has struck a first and mighty blow to the idea of Grand Strategy, and his contribution has been often quoted by other scholars, but the rebuttal remained somehow on the most superficial level: a principle based on natural resources is not an alternative *per se* to the grand strategy, and it remains almost useless to understand how the Romans thought and behave in case of war.

⁸¹⁶ Luttwak 1976 pp. 88 and followings.

⁸¹⁷ Mann 1974 pp. 508-533.

⁸¹⁸ See the case of Dacia in Mann 1979 p. 180.

Implicitly, Mann has highlighted that the Romans lacked the technical knowledge and instruments to fully develop a grand strategy. The idea has been influential in the subsequent debate and it has found numerous and different developments in other scholars.

Before the publication of Luttwak's "The Grand Strategy of the Roman Empire", Campbell had already published a paper on Roman military officers, their preparation and the nature of their role in the imperial chain of command⁸¹⁹. Campbell argued in his study that the absence of a properly military school prevented the Romans from fully developing a military class of professional officers. Since the time of the Republic, the command of the Roman army was entrusted to highborn men and nobles without considering their specific military training and attitude to command. The prestige and financial possibilities granted to the men belonging to the most important families the most important office in the army, monopolizing *de facto* the conduct of war. Paradoxically, commanders and generals had often less experience than professional soldiers. As Campbell points out, commanders frequently sought the advice of experienced officers and centurions, soldiers who had spent decades in the army and had a vast knowledge of war⁸²⁰. This class of amateurs could not function as a proper general staff as intended nowadays and without a central command, planning and implementing a complex grand strategy was absolutely impossible, or at least this is what Campbell has concluded. It is undeniable that the empire never developed modern war academies, nor the Romans had at their own disposal something similar to present day manuals to prepare future officers and this has surely influenced the way they behave in war.

The thesis of the non-professionalism of imperial military officers has had a wide influence in the debate and it has been developed in various ways by many different scholars. For instance, Millar, who has remained relatively cautious on the topic, has nevertheless highlighted that provincial governors and local commanders benefitted of a large autonomy in matters of military decisions due to the slow communication available at the time⁸²¹. It was indeed impossible to coordinate a military response with the central government from the periphery, especially in time of need. Millar admitted however that "guidelines" were sent by Rome and contributed to impose a common approach in foreign policy⁸²². The idea has been developed even more by Isaac and Whittaker, whose studies on the imperial frontiers represent the most complete rebuttal to Luttwak's hypothesis. The debate started by the publication of

⁸¹⁹ Campbell 1975 pp. 11-31.

⁸²⁰ Campbell 1987 p. 20.

⁸²¹ Millar 1982 pp. 1-23. See also Millar 1988 pp. 345- 377.

⁸²² Millar 1982 p. 8.

“The Grand Strategy of the Roman Empire” progressively shifted from a purely strategical discussion to an inquiry on the social and economic nature of the imperial borders.

Isaac⁸²³, one of the harshest among the critics of Luttwak’s work, moved his rebuttal from the same assumption of Campbell: Romans did not have a professional general staff of the type we intend today.

He concludes further that the not even the *consilium*, the most intimate and influent circle of emperor’s friends and advisors, could really function as a general staff⁸²⁴. The empire appears almost leaderless in this extreme interpretation.

As Millar has previously argued, also Isaac arrived to considered the strategical reasons sometimes mentioned by literary sources as mere elements of imperial propaganda⁸²⁵. There was no strategic thinking beyond the wars lead and decided by the emperors, who were actually more concerned with prestige and public opinion rather than with a global outline for the Roman foreign policy. The frontiers of the empire are therefore deprived of any strategic value in Isaac’s hypothesis and considered purely on their social and economic aspects.

It should be considered therefore the debate around the Roman concept of *limes*. The word has been used in modern times as a general synonymous for a heavily garrisoned frontier, and the term itself has slowly became the symbol of the imagined “Maginot-line mentality” of the Romans. Isaac highlights however that originally, the word *limes* indicated a small road between fields of different proprietaries. The term has indeed maintained the original meaning of “road” for a long time. At the beginning of the empire, *limes* was used to indicate a military road that penetrate into enemy territory and it was thus used by armies engaged in offensive operations. In later centuries, the *limes* was the road used to connect the military camps and other installations: it was not the fortified frontier per se but rather the network of infrastructures used by the soldiers to patrol the borders⁸²⁶.

The *limes* was therefore a logistic element of the frontier, it assured safe and fast movement for patrols and detachment, and Isaac argues even further that it had no strategic role at all⁸²⁷. The role of the army deployed in the most peripheral area was therefore limited to the occupation of the lands and the contrast of raiders and bandits who represented a sort of endemic plague in the most remote and less urbanized regions of the Old World. Isaac has

⁸²³ Isaac 1988 pp. 372-416.

⁸²⁴ Isaac 1988 pp. 383-386. See also Millar 1982 pp. 5-7.

⁸²⁵ Isaac 1988 pp. 379-381.

⁸²⁶ Isaac 1988 pp. 410-416 and 1988b pp. 125-147.

⁸²⁷ Isaac 1988 pp. 416-418.

worked mainly on the eastern borders of the empire and his conclusions fit very well the peculiar situation of that part of the ancient world.

The border stretched from the Black Sea to Arabian Gulf were immense and ran through the mountainous range of the Caucasus and across the desert area between the rich Syria and the fertile Mesopotamia. The imperial army were indeed garrisoned in urban settlements where possible, and a network of military camps and logistic infrastructures assured a capillary military presence in the east. Few land routes were actually exploitable for large forces and invading army, and therefore the imperial army did not need the impressive network organized in the west. The study on the original meaning of the word *limes* allows Isaac to demonstrate that the absence of a term to translate the modern concept of “fortified frontier” implies that Romans did not organize the borders of the empire from a military perspective.

It is noteworthy to signal that this conclusion does not necessarily follow from the premise. Around the same year of publication of Isaac’s paper on the meaning of the terms *limes* and *limitanei*, Forni published a detailed study on the Roman *limes* for the *Dizionario Epigrafico*⁸²⁸.

He opened his inquiry by discussing the development of the word *limes* during the centuries. As Isaac, he independently reached the conclusion that the word was originally used as a strip of land between two fields and evolved to indicate a military road used to wage war against an external enemy or to occupy and consolidate the imperial power over a province.

Forni however does not conclude against the strategic value of the Roman frontiers, on the contrary he presents a coherent narration for the expansion of the empire: the frontier areas were from time to time organized to sustain the imperial power, consolidate the recently acquired provinces and at the same time prepare future engagements.

Forni’s hypothesis could appear as a soft model (it does not present a strong methodological approach nor a unitary principle for the establishment of the imperial borders) but it nevertheless succeeds in separating the dependency of a strategical approach from a specific term for a fortified frontier. Despite its usefulness for the present topic, Forni’s work has represented nevertheless an isolated voice in the debate at the time.

Academic discussion focused more on the technological and technical difficulties of the past, insisting that the absence of a truly professional class of officers and poor geographical competences prevented the development of a grand strategical approach.

⁸²⁸ Forni 1985 pp. 1074-1380.

Whittaker has probably provided the most complete and coherent rebuttal on this aspect⁸²⁹. The road plays in Whittaker model a central role, it completely dominates the paradigm. Because they lacked the proper technical and technological tools to develop a modern cartography, Romans' sense of the world was rather hodological than spatial. The image of continents and lands were often vague, the shape of islands and regions frequently reduced to geometric forms, and not very useful for practical purposes. Whittaker insists on the *itineraria* as the most trustful source to understand how the Romans conceptualize their own world: this kind of document described a network of roads and stations, it could be used to move around the empire but it did not provide a realistic sketch of the Roman world.

For Whittaker, it follows that if the imperial establishment did not have anything similar to a modern cartography to work with, even the highest commanders had to rely to personal knowledge, descriptions and *itineraria* to plan their action⁸³⁰. The network of roads shaped the image of the world also in representing the limits of the Roman *imperium*. No precise borders existed in the empire, nor it was possible to fix those limits in the eyes of the establishment nor in the eyes of the surrounding tribes and peoples. Once again, only the roads that bordered the empire and that was patrolled by the imperial army represented a tangible element of the border, but the frontier itself was more an area than a line⁸³¹.

If the border as mono-dimensional concept finds no places in Whittaker's theory⁸³², it follows that the whole concept of scientific frontier has no real application for the history of the empire. Whittaker appears indeed to have been heavily influenced by Lattimore's studies on the frontiers of ancient China: those contact areas allowed cultural and commercial exchanges between different societies and civilizations, actively functioning as a social workshop⁸³³.

Whittaker's and Lattimore's theoretical models are indeed similar, and frontiers appear as transitional areas with blurred boundaries, not as a real border with fixed and clear markers. The nature of this transient area is defined by cultural hybridization and in Whittaker's model the constant exchange of peoples, goods and ideas characterizes the social dynamic at the periphery of the Roman world.

Military infrastructures did not act as a preclusive barrier but rather manage and overlook the contacts with elements, tribes or confederations, that existed outside the power of Rome. Nor those structures marked the real extension of the empire, whose influence and power was

⁸²⁹ Whittaker 1989, Whittaker 2000 pp. 293-331 and Whittaker 2004 in general.

⁸³⁰ Whittaker 2000 pp. 294-305.

⁸³¹ Whittaker 2004 pp. 63-71.

⁸³² Whittaker 2000 p.312, cf. Lattimore 1962 p. 406.

⁸³³ Lattimore 1962, explitley quoted in Whittaker 2000 p. 315.

extended much beyond the physical lines of watchtower and *castra*. According to Whittaker, vassals and allies were perceived as part of the empire as well as any king and tribe that had accepted the supremacy of the *augusti*⁸³⁴.

The unitary principle of conquering and holding the most effective frontier possible cannot function as the unitary principle that drives and explains the expansion of the empire in Whittaker's model, and it thus need to be replaced by a different key of interpretation.

In place of strategic reasons, Whittaker proposes to understand the imperial foreign policy as a reflection to emperors' domestic agenda⁸³⁵. The power of the *principes* relied on the support of the armies, of the people of Rome and of the provincial world. The *augusti* were somehow prone to the public opinion and they had to constantly demonstrate their force and their might in war. The necessity of proudly standing alongside the past emperors and to prove themselves worthy in the eyes of the Romans forced the decisions of the *principes*. Triumphant over the enemies of the empire and subjugating lands are peoples helped the *augusti* to strengthen their power, consolidating their rule and dominion. Only a victorious emperor could safely reign over Rome and only a *princeps* who could claim impressive military victory could demonstrate his virtues and attitude to command.

Roman society was indeed a competitive one, and the emperor was not the only one to seek prestige and possibilities on the battlefield. War represented a path to ascension for the most ambitious men of the empire, and even under the rule of the emperors, nobles and aristocrats competed in gaining a military renown. Not only glory could be conquered with the power of arms, gold and prosperity waited the victorious soldiers and commanders. The tumultuous expansion of the empire finds an explanation in this endless and constant need of victory and military prestige: military campaigns were decided not in search of strategic advantages but rather in desire of wealth and prestige.

⁸³⁴ Whittaker 1989 pp. 42-43 and pp. 71 and followings.

⁸³⁵ Whittaker 2000 pp. 298, 306, 313; Whittaker 2004 pp. 34-35.

8.2 - The bulwark revisited.

Critics of Luttwak's have focused mainly on the absence of technical and technological prerequisites for the development of a grand strategy.

It follows that the application of a present day concept to the history of the empire necessarily lead to anachronistic conclusions about the dynamic of the Rome expansion, but this represents a logical conclusion only admitting that a grand strategy in its own turn is possible only in a modern sense.

The conclusion appears thus paradoxically tautological (applying a modern concept in a modern sense to the ancient world leads to an anachronistic reconstruction of it) and at the same time the debate risks to shift into a terminological discussion about the meaning of strategy and grand strategy. Many scholars have indeed pointed out that each strategy is funded on perceptive bases rather than on rational thinking and objective analysis⁸³⁶.

Roman society behave as a whole in case of war, but the decisions were ultimately taken by a relatively small élite. Highest army officers, the most influential politicians and the emperor himself with his advisors were for sure part of the "security community" responsible for the conduct of war. Influences from other elements of the society were strong enough to partially dictate the political agenda of the establishment. Some instances can be possibly defined as "cultural" from a modern perspective and they were not limited to specific sectors of the imperial society.

Those psychological motivations drove imperial foreign policy and make it intelligible to contemporary observers. In a recent publication, Mattern⁸³⁷ has indeed pointed out that suasion played a central role in ancient warfare and military campaigns and peace treaties were decided according to how a political entity were perceived from the outside and how it perceived himself. Technical and technological limits prevented the imperial establishment to plan over a long period⁸³⁸, but the imperial establishment reacted nevertheless following rational patterns. Luttwak notion of power finds in Mattern's model a new vest. The presence of the imperial army along the borders were intended mostly to intimidate and threaten the

⁸³⁶ See for instance Bathurst 1993 *passim*. The concept of "strategic culture" is based on similar bases: Gray 1999 pp. 49-69.

⁸³⁷ Mattern 1999.

⁸³⁸ Besides limited geographical competences, it should be acknowledged that the empire had to thin its forces across an immense territory. Natural resources available could not sustain large concentration of troops for a long time, and the army had to safeguard the power and majesty of the emperors even in the most remote province of the empire. It follows that gathering large armies, form aggressive or defensive purposes, were possible only by weakening other sectors: Mattern 1999 pp. 82-104.

neighboring tribes and peoples, constantly menacing a retaliation in case of hostile action⁸³⁹. The imperial army engaged in large scale operations for similar reasons: from time to time, besides the desire of gaining glory on the battlefield, the emperors waged wars against their foes to remind them of the power of the Romans.

Avenging a past defeat was particularly important because even a limited success could threaten the invincible image of the empire and push other enemies on the verge of a conflict. The point is particularly noteworthy for the present discussion because of the peculiar events that ultimately lead to the conquest of Dacia. Trajan's campaigns are notoriously poorly represented in ancient literature due to the fortuitous loss of the largest part of authors and works that covered the two wars of 101-102 and 105-106. Neither emperor's commentary or the studies of his closest collaborators have survived but for few fragments, the reasons of the war are therefore shadowed by this unfortunate situation.

The precedents of Domitian's age represented for sure a decisive element to which Trajan planned accordingly. The defeats suffered by Oppius Sabinus in Moesia and by Cornelius Fuscus, who lost the praetorian banners together with his own life, surely struck deeply into Romans pride and demonstrated the weakness of the empire in front of the *barbaricum*. Trajan had indeed many reasons to wage war and avenge the Roman honor tainted by his corrupted and weak predecessor: the *optimus princeps* did use the success against Decebalus to highlight his quality against the *vicious* Flavian emperor and he stressed the importance of the conflict to prove the renovated strength of the empire.

Vindicating those famous defeats could also discourage the "barbarians" to renovate their hostilities against the empire, securing the Danube frontiers after decades of hard-fought wars. Despite the relevance of the topic in front of the public opinion, the sources we can read today do not speak directly of avenging Domitian or the soldiers killed during the war of AD 95- AD 96 AD. A surviving passage of Crito's *Getica*, preserved in the byzantine *Souda*, confirms that the situation was somehow serious and the war was imminent: Trajan felt the need to open the hostilities as soon as possible, but no further details are added⁸⁴⁰.

Through the epitome of Xiphilinus, the surviving passage of Dio mentions the increasing strength of the Dacian kingdom and the tributes the empire was forced to pay to Sarmizegetusa,

⁸³⁹ See the concept of suasion and its application in Mattern 1999 p. 114 and ff. and in Luttwak 2001 pp. 320-324.

⁸⁴⁰ *Souda* Adler *epsilon* 1961.

but there are no mentions of a revenge for the defeats of the past⁸⁴¹. Instead, Dio stressed the arrogance of the Dacians in multiple occasions through all the account of the Dacian wars⁸⁴².

It is partially unclear in what this insolence consisted, but there are reasons to argue that the Romans feared Sarmizegetusa diplomacy and friends as well as they feared their armies. Dacians had indeed many contacts among the neighboring peoples: Buri fought alongside Decebalus' soldiers at Tapae and the famous winter campaign of 101-102 AD involved a strong contingent of Sarmatian cavalry⁸⁴³. Even the already mentioned case of Decebalus' sister could imply that the energetic Dacian king was succeeding in reuniting again the fragmented Danubian world. A mighty confederation north the Danube would have represented a major threat for the imperial power in the area and the Romans in general were worried by a possible alliance among their enemies.

The perceptive nature of the problem becomes evident if we consider Pliny's passage regarding the almost incredible history of Callidromus, a former slave of Moesia Inferior governor who had been captured by a Sarmatian chief, Susegus, during the campaign of AD 101⁸⁴⁴. Pliny's report the history backwards. Callidromus, who had been bought and employed by a baker, managed to escape and took refuge by pledging mercy at the base of an emperor's statue. When arrested, Callidromus admitted to have been captured by Susegus and sent to Decebalus who in his own turn sent him as a gift to the Parthian king in a desperate attempt to create a powerful alliance against the Empire. Callidromus worked in the Parthian gold mines for a while before running away and taking refuge into the empire once again: he had gold-powder and the Parthian king's sigil to prove his unbelievable tale.

Callidromus' story is indeed highly suspicious: even Pliny, who added the letter containing the tale in his epistolary, added that he has sent to the emperor the gold nugget and the sigil that the slave has brought as proof⁸⁴⁵. The purpose of this apparently fictitious claim is not clear, but it appears unlikely that Decebalus was really aiming for an anti-Romans alliance with the Parthians: the powerful eastern kingdom was too far from Transylvania to have a

⁸⁴¹ Dio 68, 6, 8.

⁸⁴² Dio 68, 1-2.

⁸⁴³ Dio 6, 8, 1. This passage is indeed not very clear, and the Buri could actually have been allied with the Romans: Trajan's column depicts German warriors beside the imperial forces in which they acted probably as auxiliaries. However, since the curious letter seems to have come from outside the Roman camps and demand the retreat of Trajan's army, it appears more probably that the Buri fought for the Dacians. Opreanu, 1994 p. 194 states that the Buri fought for the Dacians, while Dumitrașcu 1993, p. 72 argues in the opposite way.

⁸⁴⁴ Plin. *Epist.* 10,74.

⁸⁴⁵ Plin. *Epist.* 10,74,2.

chance to really help Sarmizegetusa in case of war, and the “king of kings” had no real reasons to help such a remote friend.

It is more possible that the whole story was fictitious and intended to function as a pretext to declare war against the Parthians. Callidromus’ tale provided a chance to present the imminent Trajan’s expedition under the light of a right and motivated war against a foe who was ready to strike first, who had almost plotted with the enemies of the empire: the war was thus justified. For a modern point of view, such an alliance was impossible and illogical, but Romans’ strategic sensibility was different and imperial establishment clearly feared the possible vast confederation among its enemies. The emperors and their top commanders planned according to this perception, not to present day strategic concepts.

As every strategy, also the Roman one was culturally determined. The misunderstanding of the cultural nature of warfare has lead both Luttwak and his critics to imagining model entirely based on the assumption that every decision taken by the imperial establishment was completely rational and somehow “perfect”, being the final effort the consequence of a long series of decisions taken without fault. It should be instead considered that the military history of the empire represents a communal effort in which personal interests and calculations have contributed to the final result in their own turn.

As Kagan correctly points out⁸⁴⁶, every strategic decision reflects the culture and the competences of the man or the group of men who took it: the empire surely underwent through a series of strategical mistakes while the establishment shaped the political agenda of the states by subjectively evaluating the situation from time to time.

If there is no base to assume that the imperial frontier policy had been homogenous and relatively stable through all the centuries of the empire, there is also no logical claims to argue that a grand strategy should be homogenous and stable during the centuries. The Gordian knot of the question lies in the political nature of warfare. Modern analysts accept the Clausewitzian idea of war as extension of politics and develop every war study from there, but it is debatable if a similar idea had been developed also in ancient times.

Following a hypothesis of Liddel Hart⁸⁴⁷, Wheeler recognizes in Thucydides’ work on the Peloponnesian War a clear evidence that the ancient world already knew the political nature of war: Thucydides focused on non-military assets (economy, diplomacy, even social forces) as winning key factors in war, *de facto* demonstrating the relative complexity of ancient warfare

⁸⁴⁶ Kagan 2006 pp. 333-362.

⁸⁴⁷ Liddel Hart 1954 pp. 7-48.

and establishing a solid connection between war itself and the political and economic aspects of a community⁸⁴⁸.

It is undeniable that political and military leaderships have coincided in Roman society since its oldest period. This double nature of power (over the citizens and over the soldiers) perdured during the centuries of the empire, when the *princeps* was indeed the commander in chief of the army and the supreme political authority at the same time.

The emperor centrally managed the empire in the limits of possible. Not only the *augusti* were responsible for the highest decisions in matter of economy and military affairs, they also imposed guide-lines to provincial governors, who were autonomy enough to act independently in case of need but who had also to obey to emperor's command and desires.

The *princeps* ultimately decided on war and peace and had the last word on every diplomatic affair. In other words, the emperor had the reasons and the tools to direct the imperial policy and shape the history of the Romans. We do not have a lot of information about, but scattered passages in literary corpus confirm that Rome was kept informed about what was happening in the most remote provinces of the empire.

Arrian sent a report about his investigation along the Black Sea coasts to the emperor, an official document with sensible information that he later rearranged for publication⁸⁴⁹. The *Historia Augusta* apparently attests similar practice also for the late empire: numerous letters, with a noteworthy attention to the welcoming of foreign embassy, are quoted in the collection of biographies⁸⁵⁰, although the documents seem rather fictitious and solely intended to present certain personages from a very specific point of view. It could be however argued that the practice was still common enough to make the letters realistic enough to deceive the readers. The famous epistolary of Pliny obviously represents the most known and complete example of the practice and it attests how deep was the central control over the province of the empire: in the pages of the epistolary, Trajan and Pliny discuss local matters with a certain frequency.

Although the corpus of evidence is not particularly impressive, Wheeler has concluded *e silentio* that the imperial archives conserved enough information to allow the *principes* and their court to plan a campaign from Rome or a long-term strategy as well⁸⁵¹. More details

⁸⁴⁸ Wheeler 1993b pp. 217-221. Wheeler refers to Thuc. 2,12,2; 3,13,5-6 but also to Xenoph. Memorab. 3,6,3-18; Anab. 1,5,9; Polyaen 7,16,2.

⁸⁴⁹ Arrian *Per.* 6,3.

⁸⁵⁰ Numerous documents and forged letters are collected by Lécivain 1904 pp. 45-51. See for instance the life of Ballista (SHA Trig. Tyr. 18) wherein two letters are presented to demonstrate that Valerianus highly considered this skilled commander. Even if the documents have been forged, their presence in the context demonstrate nevertheless that the practice was relatively common in imperial times.

⁸⁵¹ Wheeler 1993 pp. 7-41 and Wheeler 1993b pp. 215-240 *passim*.

concerning, in particular, the provincial administration of the Dacian provinces will be presented in the forthcoming paragraphs, but it is interesting for the present topic to note that the imperial administration increased during the centuries. Augustus had a relatively limited bureaucratic apparatus, but later emperors greatly improved the administrative network, incrementing in particular the number of equestrian officers at their own service.

At the same time, specific officers were entrusted of limited tasks, efficiently implementing an efficient administrative network to manage the provinces together with their armies and resources.

Wheeler offers no clue to account how imperial strategies evolved according to the increasing efficiency of the bureaucratic apparatus, but it could be argued that a perfected and stronger administration would have helped the imperial establishment to plan its actions. The amount of information collected and stored in the imperial archives remains however unknown, Wheeler simply presumes that the central government had a relatively clear picture of the ancient world, but the problem remains open.

A further point deserves however a brief discussion. Following Dio, who negatively judged Septimius Severus' campaign in the east⁸⁵², Isaac has argued that the imperial establishment was not driven by strategic reasons but solely by emperor's desire of glory and military fame⁸⁵³. The emperor had declared that the war was intended to create a *probolos*, an advanced defense for the rich province of Syria, but Dio interpreted Severus' claim as a mere excuse to wage war against the eastern rival.

Isaac accepts Dio's interpretation, but Wheeler correctly points out that the existence itself of the term indicates that the Romans had some strategic concepts and were able to manipulate them⁸⁵⁴. The word *probolos* seems to derive from *proballo*, "defending with a shield" or "pushing a shield in front of". The strategic concepts of *probolos* thus proceeded from the practical act of shielding and can translate what a bulwark for modern analysts.

Dio could have been right in presenting Septimius Severus as a man driven by selfish motivations, but the use of the term means nevertheless that strategic concepts existed and had drove the behavior of the imperial establishment in the past. As far as we know, the word *probolos* has not been applied by ancient sources to Dacian in any moment of its history. Ancient authors have highlighted the power of the Dacians and their untrustworthy behavior in respecting the

⁸⁵² Dio 75,3,2-3.

⁸⁵³ Isaac 1988 pp. 381 and ff. See also Campbell 1984 pp. 396-397 for a similar conclusion.

⁸⁵⁴ Wheeler 1993 pp. 17 and followings.

treaties and the diplomatic arrangements⁸⁵⁵, but no mentions of a positional advantage can be found in ancient sources.

Due to the loss of a huge part of sources, it is however possible that the geographic position of Dacia, with a related strategic meaning, had been mentioned by some authors of the past. The shape of the province was known and the total length of Dacian borders had been roughly calculated as well. Even assuming the lesser degree possible of geographical knowledge, the imperial establishment should have had a vague idea of form and position of Dacian provinces. If the Greek word *probolos* actually translated a strategic concept in use also among the Romans, it could be argued the occupied Dacia worked or was intended as an advanced defense for the Danubian provinces: Roman presence in the area maintained a strong separation between the Sarmatian Iazyges in the west and the Rhoxolans in the east, and allowed the imperial forces to occupy a strong and well defended position.

Holding the Transylvanian plateau was however expensive in term of manpower and finances. Despite the immense treasure Trajan gained with his victory against Decebalus⁸⁵⁶ and the undeniable natural resources of the area, the victory was evidently perceived as an expensive one if Hadrian was ready to abandon the newly conquered province right at the beginning of his reign. The area had been ultimately abandoned during the III century AD: literary sources accounted Aurelian for the decision to evacuate the province, but epigraphic documents seems to rather point to Gallienus, under whose reign the army left the province and moved south again.

We don't have details about the reasons behind this operation but it is unlikely that Dacia had already exhausted its natural resources: gold mines were still in activity during the III century AD and, although the area reflects the economic contraction of the period, there are no hints to presume that the area was deprived of his wealth. The abandonment had thus decided for different reasons, potentially of military or strategic nature: although it was naturally defended, Dacia required nonetheless an impressive garrison that, at least from the perspective of the imperial rulers, could have been usefully employed elsewhere.

It is arguably impossible to conclude in favor of just one hypothesis. The region was rich in natural resources and provided a strong military position to overlook the area. Romans could have had therefore multiple reasons to conquer the area, even if we assume that their

⁸⁵⁵ The famous "Dacorum gens numquam fida" (Tac. Hist. 3,46,3) echoes in Dio's account of the Dacian Wars.

⁸⁵⁶ Joh. Lydus 2, 228. It is noteworthy to signal that the desire or the need of gold is never proposed as a reason for the war by ancient sources. The gold mines of Dacia were however probably known, and it is possible that the imperial establishment aimed to obtain the control of Dacian mining areas.

knowledge of the situation was vague and imprecise. The imperial establishment proved to be capable of reasoning in strategic terms, understanding the value of a province. In any case, even if Trajan and his entourage did not plan the conquest in a rational way, the province soon disclosed its potentiality to the conquerors in the successive decades.

The analysis of the administrative network of the region confirms that the imperial establishment quickly understood how to defend, control and exploit the newly conquered region. Trajan laid the fundamentals of the province, but local administrative and military structures evolved over time. Logistics in the area developed accordingly to the more general situation, its study should be approached with a dynamic model to account for the changings that interested the area during the centuries.

9. Dacia as a Network.

9.1 Features and development of Dacia defensive works.

The peculiar position of Dacia in relation of the rest of *barbaricum* has heavily influenced the story of the region in a multitude of aspect.

Morphologically, Dacia was a complex province. Minor routes and mountain passes across the Carpathians granted local mobility and connections, but three major access has historically shaped the route network of the province. From the west, the Transylvanian plateau was accessible through the Mures valley that passed through Micia and Apulum, while from the south the major access was along the Tibiscus river up to the Mures valley again. The road along the Olt/Alutus became important only after Hadrian, who promoted a series of impressive work in the area to reinforce the route across the Carpathians. From the south, two main roads were therefore possible: one from Lederata and the other one from Drobeta. Both merged in Tibiscum and from there to the north, reaching Colonia Ulpia Traiana Sarmizegetusa, Apulum and ultimately Porolissum. Apparently less developed were the road network to the east⁸⁵⁷.

Trajan needed nevertheless to impose the imperial administration in the area to prevent potential revolts and to consolidate the Roman authority over the region. Despite the Dacian kingdom was considered relatively developed for the time, the area still lacked the complex network of roads and infrastructures that defined the imperial rule.

The army of the first period of existence of the province was an aspect and an element of this primaveral organization and it consequently functioned as an occupation force rather than having a strategic or a defensive purpose⁸⁵⁸.

A series of *castra*, occupied by auxiliary units, marked the frontiers and overlooked the most important access to the province, challenging every possible threat from the adjacent regions. At the same time, however, consistent forces destined to the protection of the route network. Overlooking and guarding the access from the south was a preliminary condition for the establishment of a province in the region, the necessary condition to maintain connections, to move goods and troops from and to Dacia. The resulting disposition of Roman forces in the area was therefore suited to control and occupation duties.

⁸⁵⁷ See Gudea 1996 pp. 99-125 for a discussion.

⁸⁵⁸ Cătănciu 1981 pp. 11-20.

It is no coincidence that the camp of Drobeta, that overlooked and guarded the important bridge over the Danube, was among the first to have built directly in stone while all the other *castra*⁸⁵⁹. Many other key locations in the province were occupied at this time, not only along the frontiers. Porolissum⁸⁶⁰ in the north blocked already the way to central Europe and Micia guarded the connection to the south west⁸⁶¹, Tibiscum⁸⁶² and Apulum⁸⁶³ controlled the centre of the province and the inner road network of the area.

Since Trajan's organization underwent relatively few modifications in later centuries, it could be argued that the military network in Dacia maintained its original purpose of occupying and controlling the area. The shape of the whole military network has been influenced and determined since the very beginning of the province.

Macrea defined the peculiar organization of the military forces in the area as an immense "fan" centred around Apulum⁸⁶⁴ and indeed the spatial distribution of *castra* and military bases resemble a series sectors connected to the centre of the province. In one of his most famous paper, published few years later Luttwak's hardly debated work on the Grand Strategy, Gudea has proposed a schematic organization of Dacia military system that has driven researches on the field until today⁸⁶⁵.

It is noteworthy to briefly point out the difference that, at least in my opinion, exists between a network, a term that I prefer to use in the present context, and system, a concept that can be consistently applied only in reference to an interpretative theory.

While the term network can be used only to indicate a series of interconnected elements without assuming anything about the function of the whole complex nor presuming that every element participated to a very same purpose, the concept of system implies a functional relation between the various elements.

Despite the title itself of the paper mentions the idea of a "defensive system", Gudea clearly states that the pattern he proposes is meant to be just a classification tool, it does not describe functional elements of it: "the system functioned as a single entity; the theoretical subdivisions adopted (above) are necessary only for the systematization of study⁸⁶⁶".

⁸⁵⁹ Cătănicu 1981 pp. 11-12.

⁸⁶⁰ Gudea 1989a *passim*.

⁸⁶¹ Mărghitan 1996 pp. 319-324. Petculescu 1981 pp. 109-114.

⁸⁶² Bona- Petovsky-Petovsky 1982; Benea and Bona 1994

⁸⁶³ Moga 1985. See also Ardevan 1998 pp. 45-49. 1991 pp. 182-192.

⁸⁶⁴ Macrea 1959 p.370.

⁸⁶⁵ Gudea 1979 pp. 63-87.

⁸⁶⁶ Gudea 1979 p. 72.

Gudea identifies three frontier zones (A, B and C) and two inner circuits (D and E). At their own turn, the frontier sector A, B and C are divided in sectors, numbered from I to XI, that represented stretches of forts and defences that constituted coherent element of the system. Of all those lines, the first two “lines” (I and II) are not considered as part of Dacia borders anymore. The line number one actually represents a series of *praesidia* and outposts that connected Bulci with Szeged passing through Aradul Nou, Sinicolaul Maru and Cenad. Those forts overlooked the Tisza river, an important artery that connected Dacia to the Bohemian plains and, for extension, to Pannonia.

Gudea admits that no forts are known for the sector number two⁸⁶⁷, that linked Szeged to the Danube, still following the bank of the river. The existence of such a frontier was theoretically consistent presuming that every installation marked a part of the provincial border. It follows that if a frontier sector existed on the Tisza, another line should be stretched to the Danube to “complete” the perimeter of the province. The remaining lines overlooked and defended the main access routes of the provinces.

The region “A”, deprived of the sectors I and II, conserved the lines III and IV that represented the west side of the narrow corridor that linked Dacia to the Danube. Sector B comprises the *castra* that bordered the Transylvanian plateau, from the area of Porolissum (Dacia Porolissensis from the time of Hadrian onwards) in the north-west (sectors V and VI) to the eastern corner of the province (Sectors VII and VIII). Sector C completed the perimeter and represent the eastern limits of the corridor, comprising the defences organised along the Olt and the advanced lines (the so-called *limes Alutanus* and *Transalutanus*). Regions D and E represent however the most interesting feature of Dacia military network. The D “ring” regroups a series of *castra* of auxiliary units deployed in the interior of the province to guard the provincial road system as well as the resources of the region.

Soldiers stationed in those bases had mainly patrol duties, but they could also act as a strategic reserve in case of need. Forts of this inner ring were indeed garrisoned predominantly with mounted units or cavalry squadrons, forming in this way a force that could be rapidly deployed on the field or eventually sent to the frontiers.

The last region is represented by the most internal “ring” of troops, constituted in this case by the legion deployed at the heart of the province: the *XIII Gemina* stationed at Apulum and the *V Macedonica* legion garrisoned in Potaissa. If the spatial distribution of military infrastructures

⁸⁶⁷ Gudea 1979 p. 86.

in Dacia appears relatively easy to describe, especially following the scheme proposed by Gudea, the interpretation of available data has proven much more complex.

Dacia presents indeed all the classic “elements” of the imperial military network in a western province. The base elements are indeed permanent *castra* wherein soldiers were garrisoned during their service in the area.

Military camps in Dacia are of generally medium size, if compared to the *castra* in other provinces, and mostly arranged in a standard way with no unusual or new features at the level of internal spatial organization of every castrum. The *castra* represented the extremities of the network, a series of key installations with a synergic relation with the provincial infrastructures. Connected by roads and rivers, military bases at the same time protected the inland routes and depended on them.

If it is undeniable that the roads represent the most preeminent elements of the “*limes*” organization, the military bases were not only the most logical way to allow the *limes* network to work properly, they represented also the preliminary condition to secure and preserve this network. A series of corollary installations reinforced the network and assured a capillary military presence all over the province and along the frontiers. Watchtower and outposts completed the system of surveillance along the borders⁸⁶⁸. *Stationes* and *praesidia* had various functions according to their position in the province. In general, those small military presences helped local governors to administrate the province, its inhabitants and resources. Small *stationes* are known to have overlooked important mountain passes and roads and to have guarded areas of some economic interest⁸⁶⁹. Those structures had no tactical purpose, at least as far as we know, and the soldiers on duty in those outposts had been previously detached from units of the army to the governor’s staff.

Watchtowers had indeed a different purpose and bordered large portions of the frontiers, overlooking the *barbaricum* and probably operating as a signal system. Relatively few information is known for this kind of structures. The frontier sector near Porolissum, arguably the Dacian border that have most benefitted of modern and contemporary historical research, presents a series of installations that marked the neighbouring peaks and hills⁸⁷⁰. Watchtowers in the area can be differentiate according to their plan: the square-planned towers are

⁸⁶⁸ More details will be provided in the forthcoming chapters. See for the moment Cociş 2016 pp. 41-76.

⁸⁶⁹ Archaeological evidences of *stationes* are particularly rare. The fortified custom from Porolissum can be considered a fortunate exception, albeit the structure was attached to the civil settlement of Porolissum and it was not a road station isolated in the countryside. See Gudea 1996. About other possible stationes: see Cupcea 2009 pp. 305-314 for an account of *frumentarii* in the province. See also Nemeti 2014 about Arcobadara.

⁸⁷⁰ Matei 1997 pp. 93-100.

apparently older than the round-planned ones, but the reasons for the change in types and features are not known.

Trajan's Column shows similar square-planned towers as part of the Danube frontiers at the time. Bright torches protrude from windows and balcony right under the roof and they probably served as communication system to signal movements across the border or, in more serious cases, the arrival of raiders and enemy forces⁸⁷¹. Watchtowers built along the frontiers of Dacia surely had a similar purpose. It remains unknown how many men daily served in this kind of structures.

Stationes had generally few soldiers detached from governor's staff. It is unlikely that watchtowers hosted much more soldiers than a small *statio*. The base unit of the imperial army was however the *contubernium*⁸⁷², an eight men team, and it looks likely that the easiest way to organize duties and activities was to manage the soldiers by team. Available *pridiani* and documents seems however not to adopt the *contubernium* as basic unit in assigning duties nor in managing available forces. The impossibility to determine how many soldiers occupied a single watchtower in normal situation prevents any attempt of calculate how many soldiers the system required along the borders. The impact over the available workforce must however have been relatively heavy in those sectors wherein the ancillary infrastructures were more numerous. In the case of Porolissum, the network of watchtowers was completed with linear structures, *valla* built in stone or with earth and wooden palisades⁸⁷³.

Generally defined as linear defences, *valla* were instruments of control rather than combat platforms. Modern studies have consistently demonstrated that those public works were intended to function as forced access into the province, thus as instrument to regulate a control the passage of people and goods from and to the Roman empire and not built to repel potential invaders. Linear structures in Dacia Inferior had possibly a partially different explanation. *Valla* are known for having connected the small camps that formed the *limes Alutanus* and the *limes Transalutanus*⁸⁷⁴.

While in the Carpathic Dacia those structures had a relatively limited length and they were intended to regulate the passage through the most prominent routes and passes, the *valla* that

⁸⁷¹ Cichorius 1896 Table 1 Plate 4.

⁸⁷² The term *contubernalis* is widely attested in inscriptions from all over the empire: Cil 11, 6763 (Italy), AE 1992, 1821 (Africa) CIL 13, 836 (Gauls, Burdigala), and Dacia as well: IDR 2, 158. The term appears also in Vindolanda Tablets (Vindolanda 181). It seems to imply the existence of a very strong bond between soldiers but Lendon has recently argued that the word had also a very technical and specific meaning: Lendon 2006 pp. 270-276.

⁸⁷³ Gudea 1989a *passim*. See also Dumitraşcu 1999 pp.467-472 for area between the Mureş and the Crişul-Repede.

⁸⁷⁴ Cătănicu 1997a *passim*. See also Cătănicu 1997b pp. 97-107.

bordered the frontiers of Dacia Inferior were longer and apparently more continuous. However, even along the eastern frontier those structures did not function as a combat platform. Linear earth defences of Dacia Inferior completed the network of small camps and watchtowers and actually contributed to form a fortified patrol road. The organization implemented in Dacia Inferior resembled other solution adopted elsewhere and even the famous Hadrian Wall in Britain could be considered a particularly complex and structured fortified patrol road: the purpose of this kind of organization was to assured safe movement for troops and patrols, allowing the soldiers to move freely under the protection of palisades and earth and preventing raiders and brigands to enter the province undetected.

In no case, however, the frontiers of Dacia were closed barrier that isolated the province from the outside world. The military system on provincial level had for sure enough resources to deal with major aggressions and eventually to defend the area against potential invaders, but in peacetime the main duty of the soldiers was to control and regulate the passage and not to forbid it. The fortified custom in Porolissum well represents the purpose of the complex frontier organization of an imperial province: after having passed through the earth *valla* and linear defences that closed the main inland route of the area, a small custom, large enough to garrison few soldiers and a office for the personnel, physically marked the access to the civil settlement and, from there, to the rest of Dacia⁸⁷⁵.

If the infrastructures built in Dacia are of known types, the distribution pattern of military force in the region has proved to be more interesting and original. The geographical characteristics of the region influenced and determined the way the military network was organized. As a consequence, the distribution of *castra*, inland routes and other infrastructures appears to have been overall adapt to local conditions rather than having be planned on the base of a standard model. A common patter in the choice of the place where *castra* were built can be however recognised. Two positions appear to have been particularly preferred by the Roman army. In a first case, *castra* showed a particularly strong connection with rivers and were built on the bank of a water stream or at the confluence of two rivers, often the position held was on the top of a hill overlooking the bank of the river or the confluence. The proximity of water source was for sure a clear advantage, but the choice indicates also that rivers were important elements for the mobility in the province.

⁸⁷⁵ Gudea 1996 *passim*.

Furthermore, rivers were clear geographical markers and useful geographical elements to mentally organize the space. It is important to point out that rivers had no tactical purpose and did not act as barriers against potential threats.

Other camps were built not in direct connection with water courses but with stronger links to inland routes and mountain passes. Numerous installations had indeed the purpose of controlling the most important way to access the province.

It is a commonly accepted truism that Roman *castra* along a *limes* were built with intervals of one day march to assure constant contacts between the military units and improving the reactivity of the whole system. Hodgson has noted that a series of fort built along a river generally presents wider and larger gaps between forts, that were generally built at more than a day march of distance⁸⁷⁶. The solution could have been adopted because of the role the river fleet could play in the context: vessels patrolled the river and assured a faster logistics and a better mobility, thus allowing the army to spread more the available resources and manpower.

Hodgson has consequently argued that a substantial difference existed between “river frontiers” and “artificial frontiers”, a conclusion challenged by Birley among the others⁸⁷⁷. The texture of Dacian military network appears indeed denser than the distribution pattern of military infrastructures in other provinces, but even the “artificial frontiers” in the Carpathic region proved to have a denser distribution of *castra* and infrastructures than another provincial frontier system. Military camps in Roman Dacia were indeed built primarily to control the few major inland routes that granted access to the Transylvanian plateau. Few camps were built where the mountains proved to be to impervious and stepped to cross, while “clusters” of military structures were organized along the easiest and most trafficked access ways to the province. If the necessity to secure the main ways in and out the province explains the particularly dense concentration of forts in certain areas of the province, the depth assumed by the local military network has posed more problems of interpretation.

The multiple levels and lines of the provincial military network seems to respect the principles of the defence in depth illustrated by Luttwak and previously discussed. Multi-levels and progressive defence strategies aim to deal with incoming threats opposing not a static defence but rather a dynamic and progressive resistance. While the first lines along the frontiers tried to hold their position, slowing down enemy's advance, troops deployed more far from the borders could move swiftly to intercept the invading army or rush to reinforce a sector under

⁸⁷⁶ Hodgson 1997 pp 61-66. *Contra* Breeze-Jilek 2005 pp. 141-146.

⁸⁷⁷ Hodgson 1997 p.66.

attack. According to the theory, swift movements were essential: fortified depots and secure roads were needed to allow troops to move with lighter baggage and as fast as possible.

It remains however unclear if the peculiar disposition of Dacian troops in the province was motivated by the precise desire to implement a defence in depth strategy or by the necessity of control the region and crush local resistance. The distribution pattern of Roman units in the province can however provide some insights of the strategic role of the local military network. Frontier sectors were held mainly by auxiliary cohorts of infantry with a notable presence of specialised units of eastern archers, that were particularly numerous in the area.

The élite of the provincial army, the bulk of which was initially composed by the *XIII Gemina* until the time of Marcus Aurelius, when the *V Macedonica* was moved in the area, held the centre of the province and intermediary regions between the border sectors and the legions were garrisoned mostly by auxilia cavalry units.

This core of mounted troops has been interpreted as a mobile and fast reserve that could swiftly intervene in case of need.

It is generally assumed that cavalry moved faster than infantry and it was thus used to intercept potential threats. Literary sources do not provide any confirmation for this assumption, while modern researches provide a different sketch instead.

Even if the whole unit was mounted, logistics should have respected nevertheless the speed of mules and wagons trained by oxen.

An extensive network of camps with large warehouses and granaries (*horrea*) and depots along the main road could overcome the problem, allowing the unit to move freely and supply locally instead of moving with a long baggage train, but a further problem regarding the speed that the unit could maintain for a long period.

It is generally thought that cavalry can move faster not only on the battlefield, but also in campaign marches, assuring in this way a clear advantage in manoeuvrability and interception speed over infantry: placing cavalry and mounted units far from borders can therefore be reasonable if these fast moving troops must intercept a potential opponent who trespassing the first line. It should be however considered that horses can exhaust their energies much faster than a man (especially without the possibility to change mount), and also that the column must move at the slower speed of the baggage train. Furthermore, engaging battles with horses completely tired would have surely heavily impacted on their usefulness on the field. As Nicosie as noted, cavalry was not “faster” than infantry and did not assure a strategic advantage in this

sense⁸⁷⁸. In the case of Dacia, frontiers were not too far away from the mid sector of camps, but there are reasons to doubt that cavalry units could have functionally played the role of interceptors according to the standard model of defence in depth.

Two more considerations could therefore be advanced. If cavalrymen were indeed faster for a shorter period of time, using mounted units for patrolling duties should have surely provided some advantages: patrols could cover larger areas, responding in a faster way to any problem and, most important at all, mounted soldiers could maintain swifter contact between the different regions of the military network in Dacia.

The position of cavalry units in the interior of the province perfectly suits the role of the local army as an occupation force. It is however true that the mounted units were particularly numerous in the army stationed in Roman Dacia, as well as frequent was the employment of eastern archers in the area. Both units had clear purposes on the battlefield.

According to Herodian, the huge army gathered by Alexander Severus to campaign against the Germans had many troops of archers from the east and javelinmen from North Africa. Arrows and throwing weapons had a devastating impact upon the lightly armoured barbarian warriors⁸⁷⁹. The presence of Palmyrean and Iturean archers in Dacia has been recognised as a peculiar feature of the local army and those soldiers must have had particular efficiency against local foes indeed⁸⁸⁰. The eastern frontier of the Dacia Inferior, the lines of *limes Alutanus* and *limes Transalutanus*, garrisoned a particularly high number of eastern archers, many of whom were mounted. The troops were clearly intended to match the fast and the numerous cavalry generally fielded by the Rhoxolans, the main threat in the area⁸⁸¹.

If the strategic role of cavalry was not to engage fast the enemy, the presence of so many *alae* in Dacia should find a different explanation. The greatest advantage the cavalry could assure on the field was in the capacity of easy disengagement from a fight. Cavalrymen could charge into the fight and then safely regain a certain distance, they could thus choose more easily when to fight and at what condition. On the contrary, infantry, and especially the most heavily armoured troops, had to choose the engagement more carefully because retreating from a victorious enemy

⁸⁷⁸ Nicasic 1999 p. 195 in particular. See also Poudret 1919 pp. 670-681. Lieutenant Poudret highlights that cavalry can not march faster than infantry even in modern warfare conditions: all considered, the light German cavalry corps, who benefited of a much better logistics than armies of antiquity, could cover 20-25 miles a day without a real advantage on infantry troops.

⁸⁷⁹ Herod. 6,8.

⁸⁸⁰ Tențea 2012.

⁸⁸¹ Cătănciu 1997b pp. 101-107.

could prove much more difficult and often represented a deadly hazard since well organized retreat easily turned into a chaotic rout.

Caesar's own accounts of the battle he fought in Gauls provide a good example for such a practice. In numerous occasions, the great Roman general opened the fight by sending cavalry detachments, possibly to provoke and taunt the enemy, or he used mounted troops as fast response units to halt enemy attacks or to occupy key positions⁸⁸². Cavalry had in this respect a very similar role to skirmishers and archers and they frequently acted together⁸⁸³. Evidently, those troops were preferred instead of slow and less manoeuvrable infantry formations because of skirmishers and cavalymen could safely retreat in case of difficulties, without committing themselves in a massive, and potentially deadly engagement, Intercepting with cavalry units had sure a great advantage but not because of the speed of the unit itself, but rather because of the possibility to choose when to engage battle.

A similar use of cavalry is advocated also in later sources. The emperor Mauritius proposes in his *Strategikon* to field more cavalry than infantry if possible: *The general would be well advised to have more cavalry than infantry. The latter is set only for close combat, while the former is easily able to pursue or to retreat, and when dismounted the men are all set to fight on foot*⁸⁸⁴. It is not by chance that Mauritius stresses also the importance to avoid pitched battles until a very favourable moment⁸⁸⁵, especially against enemies who entered the battle with heavy armours and massively relied on shock troops to break compact formations⁸⁸⁶.

The distribution pattern of the imperial troops in the area is more consistent with an occupation army, but local forces had also another strategic role. As it has been previously argued, deterrence and counter attacks were important elements of the imperial strategy.

Even if the Romans had only vague idea of the relative geographical position of Dacia in the *barbaricum*, it is undeniable that the provincial army of Dacia took a very active part in the wars along the Danube sector. Coordination with the southern provinces was a particularly important strategic asset as the multiple joint commands over Dacia and Pannonia or Dacia and Moesia clearly indicate⁸⁸⁷.

⁸⁸² Caes. *De Bel. Gal.* 1,49; 2,9; 3,20; 5,9; 5,50; 7,13.

⁸⁸³ Caes. *De Bel. Gal.* 2,7; 2,10; 2,24;

⁸⁸⁴ Maurit. *Strat.* 8, 2,85. Translation from Dennis 1984 p. 90

⁸⁸⁵ Maurit. *Strat.* 8,2,86.

⁸⁸⁶ Maurit. *Strat.* 9,3.

⁸⁸⁷ SHA *Hadr.* 6,7 (Hadrian entrusted Marcius Turbo with a temporary command over Dacia and Pannonia); IIS 1097 and 1098 (Claudius Fronto, governor of Moesia and Dacia during the reign of Marcus Aurelius).

The troops stationed in the Carpathic regions and in the Transylvanian plateau had to be always ready to move and to strike in help of a neighbouring province or as a potential deterrent for any enemy in the area.

As a sort of “response force”, Dacian army strategic role was to strike as fast as it could in case of need and the troops that composed the provincial force perfectly suited this purpose: archers were effective both as skirmishers and as support for the troops, and cavalrymen assured the necessary tactical flexibility on the battlefield.

It could be consequently argued that the distribution pattern of soldiers and military infrastructures only superficially resembles a defence in depth, but it was not in its nature. The military system in Roman Dacia was planned according to two separate and distinct objectives:

- Occupy the newly established province, controlling the natives to prevent any form of insurgence and resistance to the imperial power; guarding the most important mountain passes and overlooking the principle inland routes of the region.
- Occupy a strong and strategic position from where rapidly strike potential enemies in the barbaricum, aiding Danube provinces in case of need and exercising active deterrence in order to prevent the formation of large confederations among the enemies of the empire.

The multi levelled network should therefore be considered not as a succession of circular and linear regions that hold various sectors of the province in a defensive progression, but rather as a radial organization developed around some major arteries represented by the most important inland routes. Dacian military network probably functioned on the base of sectors stretched from the borders to the interior and organized around the most important roads of the region. Contacts were constantly maintained between the peripheral troops and the core of the system: the distribution pattern of troops in the area granted a capillary control of the region and the possibility to swiftly gather the soldiers, “piling” them along these arteries, to organise larger operations.

The solution proved to be original and unique indeed. In the western provinces, only the sector of the Agri Decumates, occupied under the rule of Domitian at the end of the 1st century AD, shows a similar organization even if in a much smaller scale. It could be interesting to consider the possibility that both Agri Decumates and Dacia military networks represent the implementation of identical strategic ideas shared by the imperial establishment between the end of the 1st century AD and the beginning of the 2nd century AD, although this possibility is

destined to remain on hypothetical level due to the lack of sources that could prove or disprove it.

Because the system had been organized in a single moment under the rule of Trajan, and it could thus be seen as the expression of a precise strategic will, it could be argued further that logistics was planned since the beginning to function according to the distribution pattern adopted in the region. However, since Dacia Inferior was originally part of Moesia Inferior, there are reasons to believe that the local military system was originally planned to function as part the south Danube province and later, when the area was detached from Moesia and organized as autonomous province, local military forces focus heavily on the protection of roads that connected the Transylvanian plateau to the Danube.

While the intra Carpathic regions were relatively isolated and could count mainly on local resources, Dacia Inferior had stronger links with the Danube provinces and could probably rely on the rich provinces of Moesia for supply need. The present work will account therefore only the military network in Dacia Porolissensis and Superior, analysing how the system originally planned by Trajan evolved during the times and what specific solutions had been adopted for the military logistics in the region.

9.2 - Sources of information and data analysis.

The analysis of Roman military networks heavily relies of archaeological data and inscriptions. Very few ancient authors, generally uninterested and inconsistent in describing army infrastructures and the military organization along the frontiers in detailed terms, have offered useful information on the topic and no one among them have dealt in particular with Dacia.

Archaeological excavations and the information collected through epigraphical documents represents therefore the most consistent source of information on the subject. Archaeology in Romania has a long and illustrious tradition that starts back to the 19th century. Antiquarian interests in the area represented the welcoming of the humanist instances of modern Europe, but it is necessary to wait for the next century to assist to the born of a more scientific and proper archaeology⁸⁸⁸.

As in many other small and Balkan countries, the study of the past and of archaeological remains of it was strongly tied to national and identity instances⁸⁸⁹. History and archaeology

⁸⁸⁸ About antiquarian interests and early studies in modern Transylvania see Szabò 2017 pp. 373-380.

⁸⁸⁹ Gramsh 2012 pp. 48-73. See also Popa - Ó Ríagáin 2012 pp. 51-70.

had a cultural nature in the way both disciplines contributed in the shaping of a new national identity and were politically meaningful in being used to advance territorial claims. Despite the specific local purpose of historical and archaeological researches, the intellectual élite of the Danube principalities were often formed abroad. While Wallachia and Moldavia were particularly influenced by French culture, other regions of the future state of Romania were more open to cultural instances from Germany or from the east, where the Turkish empire still represented a strong cultural attraction⁸⁹⁰. The revolution of 1848 and the subsequent formation of autonomous United Principalities of Moldavia and Wallachia in the 1859 were inspired by the western culture of the time, and the *zeitgeist* of the period was reflected in a particular attention on the most remote origins of the Romanian people⁸⁹¹.

Because the origin of the Romanian people has been for long seen as the result of the union between the native Dacians and the Romans⁸⁹², scholars heavily focused on both period with the clear intention of strength the territorial and political claims of the United Principalities, that formally remained under the sovereign authority of the Turkish empire.

The annexation of Transylvania, former region of the Austro-Hungarian empire, in 1918 completed the union of all the Romanians under one nation and further boosted the archaeological research, with many and intense campaigns in the intra- Carpathic area⁸⁹³. The years between the unification and the Second World War represented a period of strong development for archaeological sciences in Romania, with a progressive specialization in different schools and academies around the country. Romanian institutions and museums were particularly active already in the 19th century AD, and the region benefitted of some early legislation for the protection of the national heritage and to regulate the archaeological studies⁸⁹⁴.

A strong positivist approach was developed in this period, possibly as a consequence of the strong influence exercised by western scholars over the Romanian archaeologists who, as in the past, have often studied abroad. According to the positivist paradigm, archaeological data are generally considered as self-evident and no need of a theory is felt for their interpretation. A positivist approach to archaeology aims to be as much objective as possible, and every theoretical over structure is somehow considered as something that could potentially bend the

⁸⁹⁰ Gheorghiu – Schuster 2002 pp. 289-290.

⁸⁹¹ Gheorghiu-Schuster 2002 p. 290.

⁸⁹² See Dragoman- Oanța Marghita 2006 pp. 60-62.

⁸⁹³ Gheorghiu-Schuster 2002 pp. 293-294.

⁸⁹⁴ Paunescu 2003 pp. 30-35.

interpretation of findings and sites⁸⁹⁵. Such a scientific perspective over the study of the past surely fitted the new political instances of the communist Romania, and it was roughly maintained in the decades that followed the end of the Second World War.

It is interesting to note that Marxist theories and approaches were adopted only superficially in Romanian universities and academies, and theorization was never a priority not even under the rule of the Party⁸⁹⁶. The period marked however a partial shift of the attention from the research on the Roman times to the study of Dacian past. The greater focus on Thracology and Dacian studies matched the intention of the Soviet block to propose a substantial unity of the Eastern Europe already in ancient and pre-Slavic time. Excavations on Dacian sites, and Sarmizegetusa in particular, received a great attention, but works and researches on the Roman age continued nevertheless⁸⁹⁷.

The Revolution of 1989 freed the historical research from its political boundaries and marked the beginning of a new season defined by an increasing rate of collaborations and exchanges with other countries of Europe and beyond. The result was the massive adoption of new techniques, the born and grow of many specialised schools and the slow development of new approaches to the field⁸⁹⁸.

The evolution of archaeology in Romania has determined also a certain evolution and dynamic of academic interests in the area, a shift of objectives and methodologies that interested also the specific field of Roman history. As Dragoman and Oanța Marghitu have pointed out, the consequence of this strong positivist paradigm has been a systematic and almost encyclopaedic approach to the domain, and a great attention is generally paid to cataloguing and dating the findings and the site as well⁸⁹⁹: the positivist approach set up goals and purposes of historical research.

The impressive military network of Roman Dacia was relatively poorly known between the 19th and the 20th century, with only some sites vaguely known and signalled in past literature. The main focus of the archaeological research was thus the rapid exploration of military camps with the clear purpose of gather every useful information about the date of realization of the *castra*, the main phases and a sketch of the internal planning. Tranches were generally opened in various spots crossing the perimetral walls and the gates: the technique provides the necessary stratigraphic information regarding the life-span of the site, identifying

⁸⁹⁵ Dragoman-Oanta Marghitu 2006 pp. 65-67.

⁸⁹⁶ Dragoman-Oanta Marghitu 2006 p. 63.

⁸⁹⁷ Gheorghitu-Schuster pp. 296-297. See also Henț 2018 pp. 87-105.

⁸⁹⁸ See again Szabò 2017 pp. 384-386.

⁸⁹⁹ Dragoman-Oanța Marghitu 2006 pp.69-70.

the element of defences from the earth and timber phase to the stone reconstruction, and multiple trenches along the walls and at the corner of camps furnish the dimension of the camp itself. The longest trenches were generally opened almost from corner to corner and intersecting at the centre of the camp, where the headquarter buildings were.

While in more recent years, archaeologists have widely adopted new techniques, the use of narrow and extremely narrow trenches has for long been particularly frequent⁹⁰⁰. Their wide adoption actually suited very well the main purposes of archaeological investigations of the beginning of the 20th century.

In this case again, the technique provides the overall internal plan of the camp, indispensable elements of chronology at least for the buildings intercepted by the trenches, and general data about the *castra* organization. However, due to the fact that the trenches were often large no more than a meter, information about single buildings is generally scarce and few data are also available about the spatial distribution of findings.

Globally, the extensive use of trenches has greatly contributed to the knowledge of many basic elements of the Roman military network in the area, but the final picture was doomed to remain blurred and relatively vague. More recent investigations have started instead to investigate through larger areas, often focusing on specific building and excavating structures entirely. Reports produced consequently are much more detailed and precise in many aspects. The planimetry of every building investigated appears clearly through its various phases of development and not, as often happened with the use of long trenches, simply reconstructed on the base of symmetry and scattered information.

The spatial distribution of findings appears clearer as well, allowing researchers to study the functional use of spaces and buildings of every camp.

However, the most recent excavations in military camps have generally interested the centre of the *castra*, where the *principia* and the *praetorium* were generally built, and the gates. The interest for the headquarters building and the private house of the unit commander is well motivated.

Working on the area of headquarters and officer's building allows to recover many key findings to understand the history of a camp, noteworthy inscriptions are often found in the area of the *principia* and the *praetorium* where they were likely kept and hanged up.

⁹⁰⁰ See for instance Gudea's excavations in Porolissum: Opreanu – Lăzărescu 2016 p. 78 clearly show how those trenches has affected the reconstruction of the internal plan of the site. See also Benea 2003 (report of the 2002 campaign) <http://cronica.cimec.ro/detalii.asp?k=2018> and the use of a 64x2 m trench from corner to corner to explore the fort at Mehadia.

Progressively, the archaeological explorations have been enlarged to interest other areas of military camps, developing further our comprehension of Roman *castra* in the area. Non destructive prospections have partially filled the remaining gaps in many cases, providing sketches of internal plans of *castra* and buildings.

Globally, available archaeological information for the area subjected to analysis are inhomogeneous for quality and quantity: many forts have been extensively excavated, but many others are still poorly known, with only few information gathered in old campaigns.

Three methodological problems are however open, every one greatly relevant for the purpose of the present work, and need thus to be discussed: the identification of troops stationed in the various sites of the province; the identification soldiers and officers employed in military logistics; the identification of *fabricae* and military workshops.

Military Units. The identification of the military units stationed in the various *castra* of the province has been a long-debated topic. Only in few cases there are relatively few or zero doubts about the presence of a certain unit in a site, for the vast majority of *castra* the unit stationed in the camp is unclear.

The military network proved to be in this case quite dynamic, troops were often re-deployed and change base surprisingly frequently. As far as we know, auxilia infantry cohorts had for the largest part a relatively standardized equipment, but some units had a more specific tactical role on the battlefield and, consequently, were equipped with a more specialised array of defensive or offensive weapons.

Inscriptions and brick-stamps are in this case the most important source of information. A concentration of epigraphical documents referring to a specific unit found in a camp could be considered a secure indication for the presence of that unit in the *castra*. Obviously, particularly large or important military bases attracted officers and soldiers for other provincial sites, sometimes engaged in official duties. The mention of a unit or the presence of a commander in a large civil or military site does not mean per se that the unit was permanently or temporarily stationed in place.

Diploma issued for honourably discharged soldiers offer a useful insight also. It has been demonstrated that the list of soldiers who have completed their service in the imperial army proceeded in geographical order: troops after the troops, lists followed the distribution of *castra* in the province. *Diploma* can therefore be used to know where a certain unit was deployed and to track troops movement during the years, eventually accounting for their displacement inside and outside the province.

Brick stamps are the third main source available to locate a unit in the province, but the nature of the document itself appears in this case less clear⁹⁰¹. Building materials were often marked with acronyms or initial of a unit, but the purpose of this practice remains relatively unclear. If the bricks were indeed produced by the soldiers themselves, in unit's workshops or nearby the *castra*, it should be argued that the stamps had no practical use and their presence indicated perhaps a cultural and social practice intended to highlight and ritually establishing the presence of a troop in a certain area. Brick stamps evolved during times in series, in a similar fashion coins did, and thus they can be used as chronological indicators. Brick stamps are therefore interpreted as marker of a unit in a certain area, but the hypothesis arises some problems and doubts as well.

The presence of stamped materials from many different in the same site has been signalled in multiple occasions. One possible interpretation is that multiple units have rotated in the same site in a sort of progression, but the purpose of this subsequent movement and replacements are not clear. In other cases, brick stamps of a unit appear in multiple sites, apparently at the same time. It has been argued therefore that a single unit could be scattered in many different sites, holding numerous positions at once. It is however possible that brick stamps had a practical purpose. The key point of this second hypothesis is that soldiers did not necessarily produce bricks on their own but relied on civil productions or even centralised workshops for the supply of building materials. The question is indeed of high importance for the present topic since the presence of manufactures that could supply many troops at once represents a clear comparison element for the present inquiry. Marking the brick was indeed a necessity if different orders were simultaneously placed on a single productive site: stamps were in this scenario useful to distinguish the bricks according to their destination.

We have scarce information on this type of workshops. There is no need to presume that those workshops were exclusively ran by military personnel, they could have been simply civil manufactures that sold part of their production to the army. One workshop was surely active in Napoca during the 2nd century AD and it was large enough to produce for the local provincial army⁹⁰². Brick stamps related to the *exercitus Dacia Porolissensis* are known in the area, and evidently the bricks were commissioned by the procurator from the central military command of the area⁹⁰³. If such workshops were indeed active, they should have had the capacity to

⁹⁰¹ Marcu 2012 pp. 513-543.

⁹⁰² Nedelea-Cociş-Băcuet Crişan 2019 pp. 185-252.

⁹⁰³ CIL 3, 8083. Macrea 1964 pp. 145-160. From Napoca: Mitrofan 1964 pp. 197-214 and pp 206-207 in particular.

produce and to transport the bricks to a relatively far distances, at least far enough to cover the extension of Dacia Porolissensis.

Figures related to inland transport of heavy goods in antiquity have been a matter of debate for long, with two main different models confronting each other. The primitivist model, that could be accounted as a development of Finley's economic model⁹⁰⁴, firmly maintains the idea that transports by land were too much expensive and impractical to be productive. Potentially, only the central establishment had enough financial resources to start such an enterprise, but the overall costs of operation greatly surpassed the benefits.

Other models have been subsequently developed in response. Many scholars have pointed out that the figures at the base of primitivist models have been often derived from few documents often referring to specific situation in specific parts of the Roman world: theoretically, it could not be correct to assume that the scarce documents we possess about inland transport truly provides a detailed and generally valid sketch for the rest of the Empire⁹⁰⁵. The tax-redistribution model proposed by Hopkins have arguably represented the most innovative and interesting counterproposal to the primitivist approach⁹⁰⁶. Hopkins have argued that the imperial tax system ultimately stimulated commerce in and between Roman provinces. Administrative regions of the empire could be divided also on the base of their economic nature: tax importing and tax exporting provinces.

At the risk of simplification, they lead us to envisage the Roman empire in the central period of the High Empire (the first two centuries A.D.) as comprising three spheres: (A) an outer ring of frontier provinces in which defensive armies were stationed, (B) an inner ring of relatively rich tax-exporting provinces, such as Spain, southern Gaul, northern Africa, Asia Minor, Syria and Egypt, (c) the centre, comprising Italy and the city of Rome, the seat of the Court and of the central government, which, like the armies on the frontiers, consumed a large volume of taxes. The armies on the frontiers (A) and the city of Rome, the Court and the central government (c) consumed more taxes than were produced locally. The two propositions imply that in the long run, on average, these tax-importing regions (the frontiers and the city of Rome) imported goods to a value which roughly equalled the imported tax⁹⁰⁷.

⁹⁰⁴ Finley 1973 is generally considered as a manifest for the primitivist approach in the study of ancient economy. For a brief discussion see Bang 1998 (online version), Saller 2005 pp.251-269, Bang 2008, Morris 2009 pp. 421-440 about the debate.

⁹⁰⁵ Saller 2005 pp.251-269.

⁹⁰⁶ Hopkins 1980 pp. 101-125.

⁹⁰⁷ Hopkins 1980 pp. 101.

The necessity to pay taxes in money forced the habitants of the province to re-arrange their economic habits, pushing them to produce more in order to sell part of their products and to gain enough to pay taxes. Hopkins explicitly states that a series of micro transactions was put in place: food products, low value and heavy since they had to be sold in large quantities, were generally sold on more local levels to artisans who, at their own turn, sold their production mostly on local level but with larger margin of products destined to be exported outside the province. Globally, a relatively limited part of the productive surplus was exported on long distances, and only the goods that had an optimal rapport between weight and cost, but commerce on local level relatively active. The case of production of building materials in Dacia fits the mid-level in the model proposed by Hopkins.

The massive military presence in Dacia, a region that had a limited monetary economy before the arrival of the empire⁹⁰⁸, surely had brought into the province an unusual amount of coins that soldiers had to spend locally for their own need. This had probably re-shaped local economic circuits. Bricks could be considered as a relatively heavy and low-value good that could be sold only in relatively limited range. However, the building program linked with the imperial dominion should have created a long and stable demand for building materials.

A workshop operating on a larger scale, or even at the level of the procuratorian province of Dacia Porolissensis, is consistent with Hopkins model: the army, the main way imperial coinage could enter the province, could easily spend money acquiring building materials, concentrating the available military workforce on other duties and helping the coin circulation in the area. Because of the existence of a central workshop for the production of bricks for the army of Dacia Porolissensis, a model inspired by Hopkins' tax-redistribution theory seems more advisable to describing the production and supply of building materials.

It follows as a consequence that the mere presence of troop brick stamps in a military base does not necessarily imply the presence of the troop *in loco*. As it has been already proposed by Marcu, the various military units of the provincial army probably shared building materials and other resources at least in short/mid range, sparing in this way important resources and simplifying logistics operations in the area.

⁹⁰⁸ Limited, but not absent. About trade and monetary circulation in pre-Roman Dacia see in general Glodariu 1976. It is noteworthy to signal that the increasing predominance of Rome in Mediterranean trade and exports was paralleled not only by a flux of Roman coins in the Transylvanian plateau but also by local mints that adopted Roman styles (Glodariu 1976 pp. 87-90). See also Cavagna's hypothesis on "gold koson coins" as local production (probably from a mint in Sarmizegetusa) with Roman types: Cavagna 2015 pp. 91-113.

Military personnel in charge of logistics. In absence of papyri, tablets and *ostraka*, the only source of information for the military personnel in the Dacian provinces are the inscriptions recovered in the area.

Fortunately, the epigraphic corpus for the province is conspicuous and epigraphic studies have benefitted of long attention by the Romanian academies. Prosopography for many troops is particularly conspicuous, and the ranks of both Dacian legions are relatively well known.

On the other hand, duties connected with army ranks are relatively vague and often the rank itself does not offer trustworthy information. According to literary sources, military *fabricae* were run by *optiones* under the authority of the *praefectus castrorum*⁹⁰⁹. It is unclear however if workshops of the auxiliary units had the very same administrative layout. All the ranks theoretically linked with a military workshop are known in the area from multiple units. Further details will be provided in forthcoming chapters, with a particular focus on the compresence of the ranks and a potential workshop building in a same site.

However, Imperial army had very few military ranks connected with specific duties and purposes and for the largest part the rank of a soldier indicated mostly benefits in military service, augmented pay, and commands.

If it sure enough that the presence of a *fabrica* implies the presence of *optiones* running it, the contrary is not logically true: there could be *optiones* and *praefecti castrorum* even without an active workshop in the site. Governor's staff could have played a role in military logistics, but once again the titles bare by soldiers detached to the central administration do not offer any information about their role and duties.

Distribution pattern of military officers in the region might provide information about the army organization in Dacia, but the function of every officer is destined to remain unknown in absence of other indicators.

Position in the province, proximity to strategic facilities or further epigraphic documents are necessary to hypothesize the role of every officer.

Without any data regarding their function and duties, military officers and governor's staff attesters attested in inscriptions around Dacia will be recorded but they will not be considered as trustworthy information to understand how the military logistic was organized in the province.

⁹⁰⁹ Bishop 1985 pp. 11-12.

Fabricae ad workshops. The proper identification of military workshops is arguably the most delicate point of the present work. In order to detail the methodological approach chosen, it is necessary to recall some preliminary assessments.

In *De metatione castrorum*, a theoretical essay on the proper way to arrange and organise a military camp, *fabricae* appear to have been situated on one flank of the couple *principia* and *praetorium*, as far as possible to the military hospital built on the opposite flank⁹¹⁰.

The source itself has proved however to be a problematic one. The date of composition of the essay is unclear. Traditionally, the work has been attributed to Hyginus Gromaticus, land-surveying of the age of Trajan, and it has been consequently supposed that the essay had been written in connection with emperor's war against the Dacians. The hypothesis had been however challenged and other solutions had been proposed. Frère has proposed a particularly high date for the *De metatione castrorum*⁹¹¹, arguing that the essay had been written under the rule of Domitian. Other scholars have seen in many technical details, regarding for instances the consistence of praetorian cohorts and the frequency of specific terms designating legionary officers and detachments, clear signs for a later date. Marquardt⁹¹², Mommsen⁹¹³ and Hung⁹¹⁴ had argued in favour of a Severan age dating, while Droysen⁹¹⁵ had proposed the military anarchy as period of composition and Foerster⁹¹⁶ even the Diocletian age. The proofs are however superficial and dating the book to the II century seems indeed the safest hypothesis. While Durry⁹¹⁷ and Richmond⁹¹⁸ have maintained a Trajanic age for the moment of composition, Birley has pointed out that the abundance of *alae milliariae* mentioned by the author seems rather to date the work to Marcus Aurelius age⁹¹⁹.

Considering the spectrum of dates proposed, whose array goes from the end of the 1st century AD to the end of the 3rd century AD, Dacian camps, built between the aftermath of Trajan's wars and massively rebuilt during the Severan age, fell roughly in the mid of the range: *De metatione castrorum* very probably describes a situation that fits the condition of the present research. However, pseudo-Hyginus describes military *castra* of a campaigning army in a perfect and ideal situation. Not only the practical and extemporary reasons could change the internal plan

⁹¹⁰ Ps. Hygin. *De Met. Castr.* 3.

⁹¹¹ Frère 1980 pp. 51-60.

⁹¹² Marquardt 1884 p. 578.

⁹¹³ Mommsen 1884 p. 214.

⁹¹⁴ Jung 1889 pp. 153-160.

⁹¹⁵ Droysen 1875 p. 465.

⁹¹⁶ Foerster 1889 pp. 237-244.

⁹¹⁷ Durry 1938 p.84.

⁹¹⁸ Richmond 1939 p. 18.

⁹¹⁹ Birley 1966 pp. 54-67.

of a military base, but the objects of the present study are the permanent fort of Dacian provinces that hosted much smaller garrison: besides the two legions, the majority of *castra* in Dacia hosted just one auxiliary unit with few key-strongholds where in two or three auxiliary units were stationed. *De metatione castrorum* should be therefore considered as a sort of useful guideline about how a military base was internally arranged and why, but it does not represent per se a certainty that each *castra* in the area had a workshop nor that the *fabricae* were surely and solely located near the *principia*. A further difficulty regarding the plan of military workshops as a discriminant way to understand the function of a building should be considered. Collecting data from various sites in the European part of the empire, Petrikovits has demonstrated not only that military workshops often shared similar plans, but also that the *fabricae* were arranged on the base of shared principles⁹²⁰. As practical destined building, with a clear and very specific destination, military workshops tended to be arranged with multiple rooms, possibly because the work was divided in many sectors with different teams operating on limited and specific tasks. The largest and most complex workshops were active in legionary bases. Those huge facilities were generally organised around a central courtyard with an access large enough to allow carts inside and in some cases a tank was built to provide waters necessary for the smiting operations⁹²¹.

Auxiliary unit workshops were considerably smaller and simpler than a legion one and presented a less complex plan, often with few rooms flanking a corridor. Clearly, the differences in dimension were motivated by the different scale of the military units and the respective need in metal supply. However, it should be considered that this type of plan was not specific for workshops nor solely adopted in *fabricae*.

While the similarities with *principia* and *praetoria* plans could be considered as superficial, it should be noted that also military hospitals were arranged in a strikingly similar way.

Baker has indeed reached the same conclusion regarding the way *valetudinaria* were organized and she has highlighted the very same modular organization with small rooms arranged around a central hallway or a central courtyard⁹²². It is indeed possible that a sort of modular planning was adopted by military engineer not only in laying the spatial organization of a military base, but also in projecting a building. Walthew has consistently demonstrated that two measure units were adopted by army technicians and that some buildings, such as the *valetudinarian*,

⁹²⁰ Petrikovits 1975 pp. 82-97.

⁹²¹ Bishop 1985 p. 4.

⁹²² Baker 2004 pp. 86-102.

were realised according to a modular organization of spaces⁹²³. The function of a building cannot therefore be deduced by its planning nor by its relative position inside the *castra*.

The present work will focus therefore on secondary “markers” to evaluate the purpose of a specific building. When the spatial distribution of findings allows this kind of approach, the presence in situ of tools specifically related to metallurgic activities could be considered a trustworthy marker for the existence of a military workshop.

Crucibles in particular represent particularly important marker since those objects could have been used exclusively to melting metals. In some cases, the spatial distribution of findings makes impossible to connect markers to a specific building. In those cases, the identification could theoretically proceed by exclusion: if the findings attest the presence of metallurgic activities in the camp, the most suitable building could be considered as the unit *fabrica*. However, the use of findings as markers is particularly tricky especially because of the similarities between *valetudinaria* and *fabricae*.

Medical tools were relatively expensive objects, it could be supposed that doctors did not happily left those expensive tools behind and they are relatively rare to find nowadays. Furthermore, those objects were made of metal, usually bronze, and they were considerably small: not only it is extremely possible that those small objects went scattered during the centuries, but medical tools could have been sent to the workshop for reparation or even to save the precious metal by recycling it. Interestingly, traces of combustion are surprisingly frequent also in *valetudinaria*⁹²⁴. The purpose of those fire areas is not completely clean. It has been supposed that, because those structures are often associated with medical instruments, that fireplaces were used to sterilize medical tools, but this practice is not attested in technical literature of the time.

Traces of combustion are theoretically a good marker for a *fabrica* building, but in practice the identification relies on more solid bases if traces of combustion can be associated with specific findings, as the before mentioned crucibles, or with metal slags resulting from metallurgic activities. Unfortunately, those latter key indicators are not always reported, especially in older excavation. Recognising precisely the *fabrica* building in a military camp could seem like a misleading approach to the problem, especially considering that markers of metallurgic activities found elsewhere in the *castra* simply proves that soldiers were able to craft at least part of their equipment locally.

⁹²³ Walthew 1981 pp. 15-35.

⁹²⁴ See for instance Cow 1995 p. 51.

However, properly recognising a workshop makes possible to estimate the productive capacity of a unit.

The mere traces of metallurgic activities do not allow to simply conclude that a unit was able to produce every piece of equipment needed, nor small findings provide any information about the quantity of raw materials consumed and worked locally. Since metal was a precious good in ancient times, it is quite rare to find an intact metallurgic facility. Workshops were generally stripped of all tools and raw materials in case of abandonment, and local population pillaged what remains when possible, saving the precious iron and bronze that could re-use. It is thus expected that only few slags and minor pieces remained *in loco*, too little evidences to estimate the volume of activity of the workshop and the possible differences between *fabricae* of various *castra*. Dimensions of a facility could instead provide a valid element to compare situations existing in different units. The existence of workshop will be considered sure when markers and findings can be associated with a precise building.

Building with a *fabrica*-style plan or isolated findings will be recorded as well and considered as potential military workshop indicators. Potential location of *fabricae* will be advocated also on the base of overall considerations on the provincial logistic network. It is more logically possible that workshops were active in key sites that held a specific role in the provincial supply system or that could function as launching platform for large military operations.

The geographical position could be tentatively used to deduce the role of a military base, but the risk is, as always, to project contemporary strategic ideas over the ancient reality. It is however possible to evaluate *castra* logistic and strategic role on the base of size and storage capacity of local horrea. A particularly high rapport of *horrea* squared meters and the total superficie of a military base will be considered as a proof that the site played a particularly important role inside the provincial supply system.

10. Dacia as a system.

10.1 - Organizing a province at the edge of the world.

The death of Nerva and the proclamation of Trajan as emperor of the Romans marked the beginning of the vast scale operation that ultimately brought to the fall of the Dacian kingdom and the establishment of an imperial province north the Danube. The new emperor started reinforcing the Danubian frontiers by improving the military network of infrastructures and gathering soldiers and troops from other parts of the empire, temporarily weakening the most peaceful and less exposed areas of the Roman dominion⁹²⁵.

The details of the operation are however not entirely known due to the loss of a large part of ancient literature. Trajan's *Commentarii*, written in a Caesarian style, rapidly fell in disuse and the historical works of Crito and Dio Chrysostom went unfortunately lost despite both have been quoted multiple times by other sources⁹²⁶. Even the biography of Trajan that opened the *Historia Augusta* collection had been lost in the past, somehow throwing Trajan's Dacian Wars into the darkness. Even Pliny provides few information about the war. The conflict against the Dacians barely appears in his epistolary and very few information can be deduced from the pages of Younger Plinys' work⁹²⁷.

Trajan's army advanced in two separate columns, enveloping the enemy in a deadly pincer attack. It is not precisely known where the Roman army crossed the river, but it seems that the emperor, who was personally leading the strongest contingent, marched towards Tapae following the same invading route chosen by Domitian few decades after⁹²⁸.

Dacian mountain strongholds and towers opposed a strenuous resistance to the invaders, proving to be formidable defenses to overcome. The whole network of fortifications that surrounded Sarmizegetusa and overlooked the main access route forced the imperial army to advance slowly and to fight hard for every valley and pass⁹²⁹.

⁹²⁵ Stefan 2005 pp. 539-542. *Contra* Strobel 1984 pp. 31-34. New legions and contingents were recruited whenever the Empire was preparing to occupy a region and organise a province, but Speidel has noted that no new legion was raised before the Dacian Wars.

⁹²⁶ Trajan's *Commentarii* are known only thanks to a passage in Priscianus, *Institutiones Grammaticae* (fl. 500) 6,13. Crito's *Getica*: Russu 1972 pp. 111-127. Chrysostomos' *Getica*: Terrei 2000 pp. 177-186.

⁹²⁷ Syme 1964 pp. 750-759.

⁹²⁸ Stefan 2005 and Speidel 1984 are arguably the two major references about the Dacian Wars. On Trajan's marches and tactical organization during troops movements see also Diaconescu 1997 pp. 13-51.

⁹²⁹ Stefan 2005 pp. 74-100.

Apparently, the army of Moesia inferior did not participate in the very first year of campaign, remaining garrisoned in its quarters at least until the famous winter attack of 101-102, when the Danube was crossed by a mixed force of Dacians and Sarmatians who ravaged the province and temporarily relieved Decebalus from the imminent siege of his capital⁹³⁰. Moesia Inferior troops, probably lead by its *legatus* Laberius Maximus⁹³¹, moved north during the second year of the First Dacian War while the main bulk of the invading army, still commanded by Trajan with a new wave of reinforcements, finally assaulted Sarmizegetusa and forced Decebalus to accept a humiliating peace⁹³².

The Dacian king survived the war and maintained his throne, but the kingdom itself was much weakened by the events. Decebalus surrendered his best weapons, war prisoners in his possess, and the Roman deserters who had for long helped to improve his army⁹³³. The kingdom itself was diminished in the end, Sarmizegetusa lost control over the southern regions of its lands and Roman garrisons occupied key places and strongholds all over the Dacian land, assuring Decebalus on his throne but also controlling him⁹³⁴. The reasons behind this choice are not completely clear, nor it is clear the organization of the land during the three years that passed from the end of the first and the beginning of the second Dacian war.

Trajan seemed rather uninterested in occupying the land and the indirect control of the region, weakening the power of the Dacians and preventing the formation of a large coalition north the Danube, could have been enough to claim the victory and spare the imperial finances from the tribute that Domitian had assured to the Dacians after the AD 88.

Possibly, the areas interested by the main campaigning operation were put under the control of Moesia Superior governor or perhaps Longinus, who remained as commander of occupying troops, benefitted of a separate and autonomous command⁹³⁵, while the eastern plains assaulted by Laberius Maximus remained under the authority of Moesia Inferior⁹³⁶.

Decebalus could not tolerate the situation for a long time and revolted against the empire in AD 105, breaking the treaties and storming the Roman garrisons by surprise. The Dacians quickly overturned the imperial forces in their land and seized again the control of the

⁹³⁰ Matei Popescu 2010 pp. 257-270 quoting Poulter 1986 pp. 519-528. *Contra* Opreanu 2000 p. 97; Opreanu 2006 pp. 115.

⁹³¹ About Dio's reference to Maximus see the hypothesis proposed by Vulpe 1966 pp. 75-96.

⁹³² Stefan 2005 pp. 562-624

⁹³³ Dio 68,9.

⁹³⁴ Strobel 1984 p. 199-

⁹³⁵ Piso 1993 pp. 1-10.

⁹³⁶ Opreanu 2000 p. 98. The so-called Hunt's Pridianum, attesting the activities of I Hispanorum Veterana north the Danube, is generally considered as a proof that the area was at the time under the control of Moesia Inferior governor. See Fink 1958 pp. 102-116.

mountain passes⁹³⁷. Trajan reacted swiftly and moved north once again, leading a strong army against Sarmizegetusa, determined to strike his opponent right at the heart. Arguably less prepared than in the first war, Dacians fought fiercely nevertheless but they could not stop the advance of the imperial army. Sarmizegetusa suffered a long siege this time while a detachment of north African light cavalry ravaged the countryside⁹³⁸.

Decebalus had to escape from his capital and reached the northern regions of his kingdom, trying to fight back the Romans with guerrilla tactics but after months of desperate fight he was reached by a detachment of cavalrymen and he escaped the capture only by killing himself. The scene of the dramatic fate of Decebalus concludes the narration of Trajan's column and appears in one of metope of Tropeaum, clearly indicates that the event had a vast resonance in the ancient world and became part of the imperial propaganda⁹³⁹. An inscription published by Speidel in 1970 restituted the name and career of Decebalus' captor, a highly decorated soldier and officer of the imperial army. The inscription presents the very same scene, with a Roman soldier hurrying to stop Decebalus while the king has already his arm lifted and he's going to kill himself with a sword. The epigraphic document confirms therefore the official narration of Trajan's Column and of the Adamklissi Tropaeum⁹⁴⁰.

As far as we know, the death of Decebalus marked the end of any Dacian resistance in the area and the end of the war: the province of Dacia was going to be instituted at that time. A *diploma* from Porolissum dated to 11 August 106 AD confirms that in the summer of 106 the provincial had already been created⁹⁴¹. The extension of Trajanic conquests north the Danube is not precisely known, but it is noteworthy to signal that the newly conquered territory was split in two different provinces.

The eastern plains interested by the action of Moesia Inferior army remained under the control of that province, without creating a new territorial entity and without being attached to the new Dacia province. Imperial most common procedure in those cases was to reduce to a province a whole kingdom, it could be argued therefore that the eastern plains between the Carpathians

⁹³⁷ Dio 68,9,7. Daicoviciu 1964 p. 691 has proposed that the Roman garrison was not in the Dacian capital, but rather in a camp, built by the IV Flavia legion, in the same place that later occupied by Colonia Ulpia Traiana Sarmizegetusa. The camp is indeed known by archaeological investigations (Glodariu 1965 pp. 119-133; Glodariu 1989/93 pp. 19-25; see also IDR III/3, 269 a-b.c) and the confusion can be explained by the fact that the Colonia was commonly known as Sarmizegetusa in the 3rd century AD, when Dio wrote his historical work. Diaconescu pp. 1997 pp. 25-30 proposes nevertheless that Dio was actually meaning Sarmizegetusa Regia, and that Longinus had therefore a garrison in the Dacian capital.

⁹³⁸ Strobel 1984 pp. 195 and ff.

⁹³⁹ Cichorius 1896 scene 145.

⁹⁴⁰ Speidel 1971 pp. 75.78.

⁹⁴¹ CIL 16, 160 = IDR 1, 1.

and the Danube lied outside Sarmizegetusa kingdom and were not subjected to Decebalus' authority. The extension of this new annex to Moesian province remains unknown, only military brick-stamps can be used to argue the extension of the Roman dominion in the area. The occupation of the area was however short lived and left few readable traces. The well-known Hunt's *pridianum* attests the presence of Moesia Inferior soldiers north the Danube, in this case engaged in provision duties, and, since the document appears to be dated at the beginning of the 2nd century AD, it is generally considered one of the few evidence about the Roman occupation of the northern bank of the low Danube⁹⁴².

The province of Dacia was born over the ashes of the former Sarmizegetusa kingdom and it comprised roughly the areas of the main imperial front during the first Dacian world. The precise limits of the Trajanic organization of Dacia are not known, we could assume that to the east the border with Moesia Inferior could have ran along the Alutus: when the eastern conquests were abandoned by Hadrian, the frontier between the province and the *barbaricum* were set up along the river Olt, with a further advanced line few kilometers away⁹⁴³. For a long time, the western border has remained more blurred and unclear. The remote castrum of *Partiscum*, built on the bank of the Marisus river, has been for long considered the western limit of Roman Dacia, but more recently the western border of Roman Dacia has been moved to the line of camps near Lederata⁹⁴⁴. The relatively narrow and short corridor between these two extremes connected the Danubian provinces to the Transylvanian plateau, the very heart of the new Dacian province.

At least two legions were deployed in the area, the *XIII Gemina* at Apulum and the *IV Flavia Felix*, possibly at Berzobis⁹⁴⁵. A third legion, the I *Adiutrix*, is attested in the area at the time but its location remains unknown and it is rather possible that the legion was not presence in its full force but only as a smaller *vexillatio*⁹⁴⁶.

As it has been showed in the previous chapter, the military network of the province appears to have already outlined at that time, with many of the most important site (Apulum and Porolissum among the others) already occupied in the very first stage of the province. It is interesting to note that construction of inland routes across the Transylvanian plateau was a priority under Trajan's reign. A *milliarium* found at Ation, along the road that reached Napoca, attests not only that the north was already occupied in the aftermath of the second Dacian War,

⁹⁴² Fink 1958 pp. 102-116.

⁹⁴³ Petolescu 2000 pp. 74-79.

⁹⁴⁴ See the discussion presented by Csaba 2014 pp. 44- 51.

⁹⁴⁵ Opreanu 2006b pp. 51-74; Flutur 2003 pp. 157-162.

⁹⁴⁶ IDR III/3 269b.

but also that the imperial army immediately started working to strengthen the road connections to the northern part of the province⁹⁴⁷.

Dacia was surely perceived as an important province since the beginning of its existence, and immediately benefitted of special attentions. The new province was garrisoned at the beginning with two legions, and indeed the first governors were chosen among the *legati* of consular ranks⁹⁴⁸, confirming the strategic value of the area. Besides military priorities, the imperial establishment immediately took action to continue the exploitation of the rich Transylvanian gold mines.

As it happened in Noricum, where the king's mines became an emperor's property after the annexation of the area⁹⁴⁹, it is likely the Ampelum mining area was put directly under the authority of the *Augusti*⁹⁵⁰. Communities of specialized mine workers were summoned from Illyria, where there were tribes renowned for their skills in the domain, and settled in the mining district at the beginning of Trajan's reign⁹⁵¹. The incoming of foreign communities in the area is an interesting signal for the study of imperial strategies in managing resources and workforce, but it has also raised question about the fate of native population in the area.

Although it slides slightly off topics the present discussion, it deserves nevertheless a brief discussion since the debate about has held an important place in past academic researches. Both the First and the Second Dacian war on the Trajan's Column ends with Dacian families forming large convoy and moving from one point to another⁹⁵². The question precisely regarded their direction. Since the movement in the two scenes has different direction, it has been proposed that while in the first case the Dacians are portrayed while returning at home after the war, in the second image they were moving away from their native land, abandoning Dacia forever. The topic had been much relevant for the identity of Romanian people, who historically have claimed a direct link from both the ancient Dacians and the Latin culture of the Roman empire⁹⁵³.

⁹⁴⁷ CIL 3, 1627= ILS 536.

⁹⁴⁸ See Piso 1993 for Dacia provincial governors.

⁹⁴⁹ Alföldy 1970 pp. 163-177. See also Alföldy 1974.

⁹⁵⁰ Numerous *procuratores augusti* are known from the mining area, both freedmen and equestrian officers (some examples: CIL 3, 1312 = ILS 1593 = IDR III/3 366; CIL 3, 1088= IDR III/3, 294; CIL 3, 1293 = IDR III/3, 282). Regarding Dacian mines see Wollmann 1996 pp. 35-56 in particular. About Noricum, see G. Alföldy 1970 who has argued that king's properties (and mines) were organized as a coherent imperial property in the aftermath of the annexation. See also Hirt 2010 pp. 126-133 for a discussion.

⁹⁵¹ Daicovicu 1958 pp. 259-266. See also Dobruna Salihu 2007-2008 pp. 157-168 for the bibliography on the subject and also the recent discussion in Hirt 2019 pp. 1-25 and Casavola 2020 (online publication).

⁹⁵² Cichorius 1900 scenes 77 (end of the first Dacian war) and 155-156 (end of the second Dacian war).

⁹⁵³ See Lorinczi 2011a pp. 173-186 and Lorinczi 2011b pp. 323-333 for a discussion. See also Ellis 1998 pp. 220-237.

If large groups of natives actually abandoned the land, it should be assumed not only that the population of Dacia was indeed formed for the largest part by Romans and other men and women from all over the empire, but also that a massive movement of population took place in the years immediately after the formation of the province.

More recently, scholars tend to agree that the movement of native population from the *barbaricum* freed from the Roman dominion was limited and Dacians still represented the most consistent ethnic element in the region. Groups of “free Dacians” were settled along the borders of the province and in neighboring lands, groups and tribes that in late antiquity merged in larger confederations together with other ethnic elements⁹⁵⁴.

The Trajanic organization of the area was however short lived and it was dismantled at the beginning of his successor reign. The decision of Hadrian of abandoning the region conquered in the past decades is famously known and it has obviously found an impressive echo in literature of the past and of today. The *Historia Augusta* describes the beginning of Hadrian’s reign in harsh terms and the situation looked very instable indeed. Trajan’s seemingly unstoppable expansion had left the Empire in a state of turmoil and the new *princeps* inherited revolts in Mesopotamia and North Africa, rumors of imminent uprisings from Judea and a difficult situation along the Danube, where the Sarmatians were taking arms against the Romans⁹⁵⁵.

The peace signed with Rhoxolans in the AD 118 temporarily relieved the Danubian frontiers⁹⁵⁶, but Hadrian looked at the situation with a certain concern. Eutropius even states that Hadrian seriously considered the possibility to abandon Dacia, and he changed advice only thanks to his advisors⁹⁵⁷. The idea of responding to a very same problem in a very same way (abandoning a newly conquered region if holding the new province proves to be extremely difficult and expensive) is appalling, but the case of Dacia was evidently different in some aspects: still according to the *Historia Augusta*, the emperor was convinced by his entourage not to abandon Dacia because of the numerous Roman families that were in the region and that would have slaughtered if left in the hands of the barbarians⁹⁵⁸. The passage seems to confirm that the province welcomed since the beginning large masses of migrants from the rest of the empire and attracted significant portion of Roman society to be perceived already as an

⁹⁵⁴ Macrea 1968 pp. 171-200.

⁹⁵⁵ SHA *Had.* 5, 1-5.

⁹⁵⁶ SHA *Had.* 6,6-8.

⁹⁵⁷ Eutr. 8,6,2. Cf. SHA *Had.* 9,1: Hadrian abandoned many of Trajan’s conquest, but nothing is said about Dacia.

⁹⁵⁸ Eutr. 8,6,2.

exposed and endangered part of the empire, but in any case the *Historia Augusta* concludes that Hadrian was moved by his counsellors and kept Dacia into the boundaries of the empire.

The eastern conquests were however abandoned: Moesia Inferior lost the largest part of territories north the Danube and the void was filled once again by the Rhoxolans. The most important bulk of Trajan conquest in the area was however conserved but under a new organization. The province of Dacia Inferior was created at the time with what remains of the Moesia inferior territories north the Danube. The border shifted back along the Danube and the river Alutus became a sector of the frontier between the province of Dacia Inferior and the *barbaricum*⁹⁵⁹.

The province was ruled by a procurator and had no legion garrisoned in its territory. At the same time, the province of Dacia Superior was established⁹⁶⁰. Apulum remained the provincial capital⁹⁶¹ and still garrisoned the *XIII Gemina legio*⁹⁶², but no other legion remained in the area and as a consequence the governors were not choose anymore between men of consular ranks but among the former *praetorii*. A procurator assisted the governor with all the financial matters. Dacia Superior had the strongest military contingent in the Dacian area and controlled the most valuable assets and resources.

For long time, the creation of Dacia Porolissensis was not attributed to Hadrian but it has been postponed in later ages, mostly at the time of Marcus Aurelius⁹⁶³. It has been even proposed that the creation of the three provinces in the area indicated that the conquest and the occupation of the Dacia were accomplished in a progressive way and during a prolonged period of time⁹⁶⁴. The finding of new epigraphic documents and the progress in historical researches have confirmed that the creation of Dacia Porolissensis was roughly simultaneous to the institution of Dacia Superior and Dacia Inferior⁹⁶⁵.

Dacia Porolissensis was a procuratorial province with no legion deployed in its territory, but the area maintained a consistent military presence nevertheless. The important military base of Porolissum, flanked by other military camps, overlooked and controlled the principal inland routes to the Hungarian plains and the west and central Europe, actively functioning as a cornerstone of the whole military network of Roman Dacia. The site was surely of primary

⁹⁵⁹ Petolescu 1971 pp. 411-423.

⁹⁶⁰ Petolescu 1985 pp. 45-55.

⁹⁶¹ Diaconescu-Piso 1993 pp. 67-82.

⁹⁶² Moga 1985.

⁹⁶³ See Ardevan 2010 pp.279-289 for a discussion on the topic.

⁹⁶⁴ Buday 1912 pp. 87-98.

⁹⁶⁵ Eck-Pangerl 2005 pp. 61-68.

strategic importance and was relatively near the town of Napoca, seat of the provincial administration, to actively function as the armed arm of the local governor⁹⁶⁶.

The year of AD 118 saw however another major conflict in the area, this time against the Iazyges. Hadrian acted resolutely and entrusted Quintus Marcius Turbo, former prefect of Egypt, with a double command over Dacia and Pannonia Inferior⁹⁶⁷.

Turbo had had an impressive military career started under Trajan, when he was a *centurio* of the *II Adiutrix*, the very same legion in which Hadrian had served as *tribunus* in AD 95. He became *praefectus* of the fleet and he led the operation against the Jewish rebel communities in Cyprus and Cyrenaica. He was later appointed as *praefectus* of Egypt at the very end of Trajan's reign and the beginning of Hadrian's one, in this occasion he commanded the imperial troops against Lusius Quietus, a former collaborator of Trajan and a prominent military commander during the Dacian wars, and his men in Mauretania⁹⁶⁸.

The situation along the Danube was evidently serious enough to convince the emperor of the necessity to recall a one of his most trusted commanders.

A special command over Pannonia and Dacia Superior was granted to Turbo to face the enemies, and the *ad hoc* solution implies that a collaboration and coordination between Dacia and Pannonia was indeed perceived as a valuable strategic asset. The point is indeed noteworthy, it indicates that Dacian provinces were not only a system in their own, but they were part of a wider system. Provincial administration and organization in Dacia, and the military network of infrastructures as well, should be studied from this double perspective as a system and as a part of a larger system. The improvement of connections with the southern provinces and the opening of the Alutus' valley inland route strengthened the link between Dacia and the rest of the Roman world, developing the participation of Dacia to the whole imperial history. Hadrian's reign imposed therefore a radical reorganization of the Roman Danubian world that shaped Dacia for the forthcoming centuries, until the very end of the imperial domination over the area.

The area was no more involved in major conflicts for the rest of Hadrian's reign, nor during the government of his successor Antoninus. Minor conflicts and social tensions still existed nevertheless, and the army in the area was still engaged in dealing with this "low intensity" threat. A series of monetary deposits found in the north of Roman Dacia seems to

⁹⁶⁶ Macrea 1969 pp. 52 and 65. Contra, Gudea et alii 1986 p. 123 has proposed that the governor was indeed located in Porolissum.

⁹⁶⁷ SHA *Hadr.* 6,7.

⁹⁶⁸ Syme 1962 pp. 87-96 for a discussion about Turbo's career.

confirm that the peaceful years of Antoninus' were nevertheless troubled by some limited conflicts that left few traces in literary sources⁹⁶⁹. A series of honorific titles given to troops normally deployed in Dacia Porolissensis or Dacia Superior can be dated to this age⁹⁷⁰, confirming that Roman soldiers clashed against enemies in the area during the reign of Antoninus.

The black clouds of war were however gathering beyond the horizon. The Marcommanic Wars started in AD 166, under the rule of Marcus Aurelius and it overwhelmed the Danubian provinces and dragged them into a state of trouble and incertitude⁹⁷¹. Iazyges' attacks penetrated deeply into Dacian defenses and Sarmatians warriors stormed Tibiscum⁹⁷², Micia⁹⁷³ and Sarmizegetusa⁹⁷⁴ in AD 167 but raids and attacks continued until AD 170-171, when even the Costoboci entered the fray⁹⁷⁵. The situation was serious enough to convince the emperor to reinforce the area by dispatching the *V Macedonica legio* in Dacia Porolissensis, where it was garrisoned in Potaissa⁹⁷⁶.

The three provinces of Dacia were therefore reunited under the authority of a *legatus Augusti pro praetore Daciarum trium*, whose seat remained in Apulum, of consular ranks. Despite being reunited, the three administrative entities (for which the denomination of Dacia Porolissensis, Dacia Apulensis and Dacia Malvensis started to be used) apparently maintained a certain degree of meaning and *procuratores* continued to manage Dacia Porolissensis and Inferior/Malvensis as it was before⁹⁷⁷.

The arrival in the area of the *V Macedonica* legion represented part of military response to the present crisis: Marcus Claudius Fronto, one of the closest and most important collaborator of the imperial establishment, was entrusted of the command of Dacia, now a strong province with a two legions garrison, and of Moesia Superior as well in a radical attempt to deal with the increasing pressure exercised by the Iazyges⁹⁷⁸.

The Antonine plague and the long war have exerted a heavy toll on the Roman society, so the extraordinary appointment of Fronto could have been necessary because of a lack of

⁹⁶⁹ Cătănciu 1981 p. 42. Ael Arist. *Orat.* 26,70. See also Polyæn. *Strat.* 6.

⁹⁷⁰ CIL 16, 90. Another series of inscription (CIL 16, 107 16,108; 16,110) mentions the arrival of vexillationes from Africa or Mauretana Caesariensis in the area, but no more details are known.

⁹⁷¹ See in general Böhme 1975 pp. 153-217 for an account of the war. See also Kovács 2009 pp. 201-263.

⁹⁷² Moga-Benea 1978 p. 133-140.

⁹⁷³ Petculescu 1979 pp. 109-126.

⁹⁷⁴ CIL 3, 7969.

⁹⁷⁵ Gudea 1994 pp. 71-75

⁹⁷⁶ Bărbulescu 1987 pp. 22-32.

⁹⁷⁷ Petolescu 1987 pp. 123-134.

⁹⁷⁸ CIL 6 1377 = 31640 = 41142+pp. 3141, 3805, 4948 = ILS 1098.

qualified political personnel at that time of Roman history, but the measure demonstrates also that the coordination between the Dacian “bulwark” and the southern provinces was a strategic possibility for the empire, and both Hadrian and Marcus Aurelius resolved to entrust a single governor of a joint command in case of need. The practice of conferring an *imperium maius* was not unknown at the time, and despite the occasions for such extraordinary commands were relatively rare, the traditions could be traced back to Augustus⁹⁷⁹. It appears once again that Dacia was an element of a larger “sector” of the Roman empire and its political, economic, social, and military nature had to be intended in this relation.

The reign of Marcus Aurelius marked nevertheless an important moment of transformation for the region. The arrival of the *V Macedonica* legion marked a renovated military importance for Dacia, that for almost a century acted as a cornerstone of the army network in the area. At the same time, the augmented strategic value of the province was balanced by a new administrative structure that confirms the role and the place of Dacia among the other Danubian provinces. A military and administrative reform that remained in place until the abandonment of the region, influencing therefore the last century of history of Dacia as a Roman province.

A peace with the Sarmatians was signed in the AD 175 because of the outbreak of the civil war that opposed Marcus Aurelius and Avidius Cassius⁹⁸⁰. The military operations in the area started again few years later. Pertinax, the future emperor and the time *legatus trium daciarum*, fought against Iazyges and Buri and forced the latter to an alliance with the empire⁹⁸¹. At the death of Marcus Aurelius, the difficult situation along the Danubian frontier was still not settled up, and Commodus continued the war started by his father⁹⁸². The provinces of Dacia were involved in the military operation again. *Vettius Sabinianus Iulianus*, a veteran of the Marcomannic wars and former *legatus* of Pannonia, succeeded in imposing a separation zone between the province of Dacia Porolissensis and the lands of the Buri, who evidently were still in arms⁹⁸³.

The *barbaricum*, the lands and regions that existed outside the Roman province, was indeed changing at the time. The arrival of the Costoboci in the area probably altered the delicate

⁹⁷⁹ Potter 1996 pp. 271-285 for a discussion.

⁹⁸⁰ Birley 2001 p. 183.

⁹⁸¹ Macrea 1969 pp. 75-76.

⁹⁸² See also the inscription from Porolissum wherein Commodus is saluted as *restitutor commerciorum* (Gudea 1988 pp. 175-189) by the clerks of Porolissum custom. The peculiar salutation could indicate that Commodus engaged some enemies in the area, possibly Free Dacian tribes, and his military actions relieved the area from the menaces, allowing the resumption of commercial activities.

⁹⁸³ Dio 72, 3,1-3.

equilibrium of the region and troubled the Dacian frontiers in the north⁹⁸⁴. The Vandals also first contacted the empire. According to Dio, two groups or tribes of Vandals, the Astingi and the Lacringi led by their kings Raus and Raptus, approached the Roman province of Dacia, seeking for shelters and aids. The provincial governor convinced the Astingi to wage war against the Costoboci but he abandoned his allies when they were attacked by the Lacringi in their own turn. The Vandal tribe was in the end settled in the province and accepted to pledge allegiance to the empire⁹⁸⁵.

Dio reports a conflict against the “Dacians” at the end of the reign of Commodus. Imperial forces probably battled the warriors of Dacian communities still free from the imperial dominion and settled along the frontiers of Dacia Porolissensis. The operations were not commanded by the provincial governor, who was probably not beloved by the army, but by Clodius Albinus and Pescennius Niger, who both later competed for the empire⁹⁸⁶.

The political and strategical importance of Dacia appears clearly in the relevance of the personalities that governed the province and commanded its armies: prominent collaborators of the establishment, future emperors and contenders passed through the offices of Dacia. Evidently, the peculiar position of the province, its strong army and the role the area had in relation with the Danubian sector assured that Dacia was entrusted generally to the most relevant and most trustworthy political personalities at the time.

The importance of the area had been exalted in the aftermath of the Marcomannic wars and the end of Commodus, when the rise of the Severan dynasty marked the happiest and richest period of the province. The overall conditions were particularly favorable for the improvement of economic conditions of Roman Dacia.

The increase of soldiers’ pays decided by Septimius Severus⁹⁸⁷, whose power was established and founded on the support of the army, had an important consequence for heavy militarized provinces like Dacia. Soldiers of the imperial army had more money and more coins to spend locally, for commodities and other services, and the improved wealth of the army meant a flourishing of civil enterprises and activities that worked in direct or indirect connection with the army. The renovated wealth of the province was matched by a higher status

⁹⁸⁴ See Ionița 1982.

⁹⁸⁵ Dio 79, 12, 1-3.

⁹⁸⁶ Dio 72,8,1.

⁹⁸⁷ Dio 75, 2,3; Herod. 3,8,5. See Smith 1972 pp. 481-500 for a discussion.

conferred to the most important center of the area. Some important urban center of the province, like Porolissum and Drobeta, gained the status of *municipium* or *colonia*⁹⁸⁸.

The imperial visit of Caracalla, who passed through the province in the AD 214 on his way to the east, was followed by a vast monumental program⁹⁸⁹.

Besides the civil structures of infrastructures, an impressive effort to improve the military network and rebuilt camps and bases of the army was put in place. In particular, rebuilding the internal buildings of the *castra* with less perishable materials improved the conditions of life and service of the soldiers. The vast adoption of stone and bricks to re-construct the forts of the province seems to respond to the desire of the Severan dynasty to improve and conserve the best relations possible with the army: not even the rebuilding of *castra* peripheral defenses seems to have had a strategic or tactic reason.

The golden age under the Severan dynasty was however short lived and the province was destined to an inevitable decline while the empire was undergoing the long and terrible crisis of the 3rd century AD.

Carpi, Gepids and Goths were moving south and reached Dacia at the beginning of the 2nd century AD. The newcomers launched a series of attacks against the imperial provinces, exploiting the weakness of the empire to pillage the Danube lands and to obtain subsidies from the Roman authorities. Many attacks ignored the Carpathian bulwark to strike directly the provinces of Moesia, but Dacia suffered of the general instability as well. Carpi and Goths stormed the Dacian *Limes* in AD 245- AD 246 and ravaged the province penetrating up to the internal regions of the province⁹⁹⁰. Even Potaissa, garrisoned by the *V Macedonica* legion, presents traces of that attacks⁹⁹¹.

Philip the Arab personally led the counter-offensive against the Carpi, forcing them to retreat and sieging one of their most important strongholds⁹⁹².

Available sources do not offer many information about the events in the area. Dacia was surely suffering for the general difficulties of the whole empire, but the province still benefitted of some relevant imperial actions. Cities and *castra* still were rebuilt and improved, and even the

⁹⁸⁸ Ardevan 1998 p. 67 Porolissum (*municipium* and later *colonia*); Drobeta p. 33 (*municipium* already under Hadrian, it became *colonia* under Septimius Severus).

⁹⁸⁹ SHA *Carac.* 5, 4; Dio, 77, 16, 7 makes no direct mention of Dacia. Due to the discrepancy between the two sources, Szabò 2005 pp. 139-150 has recently argued that the *Historia Augusta* author intended the Constantinian Dacia Ripensis, along the Danube, and not the "Trajanic" Dacia. The passage from the *Historia Augusta* is nevertheless considered as trustworthy in Romanian literature, and it has often been addressed as the reason behind a vast rebuilding program that interested the whole region. See Opreanu 2015 pp. 16-23 for a discussion.

⁹⁹⁰ Zos. 1, 20. See Drinkwater 2005 pp. 36-37.

⁹⁹¹ Macrea 1969 pp. 439-440.

⁹⁹² Macrea 1969 p. 441.

route network were restored, but traces of difficulties appear started appear nevertheless: in many cases, the last phases of forts and camps show the vast use of recycled building material and improvised blocking of lateral and rear accesses, probably as a consequence of a growing instability in the region⁹⁹³. Philip the Arab allowed the province to open a mint to produce some bronze coins and sustain local economy⁹⁹⁴, that was evidently under a huge amount of stress, but the progressive crisis of the imperial authority eroded the Roman grip on the area.

The state of warfare continued through all the 3rd century AD. The numerus of Palmyrean archers garrisoned at Porolissum assumed the title of “decianus” during the reign of Decius, implying that the *limes* Porolissensis was somehow involved in military action. The title of “*Dacicus Maximus*” was frequently claimed by emperors of the time. Although it remains somehow unclear if it actually refers to Free Dacians or it indicates more vaguely people and confederations settled around the province. The frequency of its appearance seems to confirm that despite the southern provinces were stroke more often than, even Dacia did not remain untouched by the events.

Literary sources state that Aurelian evacuated the province at the beginning of his reign, but it is probable that the situation was compromised under the rule of Gallienus already and the army has left the province around the AD 268⁹⁹⁵.

Dacia had not been invaded nor occupied by enemies, in comparison with the southern provinces it appears that Dacia had been less exposed to external threats. Possibly, the real threat was to be cut out from the rest of the empire: only the narrow corridor from Lederata to the Alutus linked the Transylvanian plateau to the south, and an invasion could simply isolate the region with its large army. The hypothesis can not be however confirmed by available sources, however if correct it could be argued that the Dacian army was somehow dependent from the support of the neighboring provinces. It seems however clear that Dacia was a functional part of the sector, an element of a larger and more complex system articulated along the Danube.

The forthcoming paragraphs will therefore consider Dacia as a part of the Roman frontier world, and the analysis will be developed accordingly.

⁹⁹³ Isac 2006/2007 pp. 131-163.

⁹⁹⁴ Alföldy-Găzdac-Găzdac 2002/2003 pp. 247-258 for a discussion.

⁹⁹⁵ Benea 2012 pp. 205-218; Ruscu 1998 pp. 235-253. See also Opreanu 2004 pp. 13-17 for the comparison between Dacia and other provinces (Pannonia and Raetia) during the reign of Gallienus.

11 - Dacia Porolissensis

The cornerstone of Transylvania defenses.

The North-West corner of Transylvania was reached by Roman armies at the end of the second Dacian War and consequently occupied by the imperial forces to be integrated into the newly created Dacia province. Dacian toponyms were maintained for Roman settlements (Napoca, Porolissum, Potaissa among the others)⁹⁹⁶.

Trajan's arrangement of the area did not last for long. The abandonment of the eastern conquest in the sector, originally attributed to the province of Moesia Inferior, decided by Hadrian was coupled with a radical re-organization of the area. For long considered a later creation, a diploma from Gherla, dated AD 123, has proven that the area was instead already organized as a separate province at the beginning of Hadrian reign⁹⁹⁷. The finding of another diploma, dated to AD 119, has definitely confirmed that the area had been already organized as a distinct province at the beginning of Hadrian's reign⁹⁹⁸. Entrusted to a *procurator* acting as a *praeses*, the small province occupied indeed a strategic position in the context of Dacian provinces⁹⁹⁹.

Porolissum, the most important military base of the region and arguably the site from which the name itself of the province has derived, overlooked and guarded the important passage through the Meses mountains, the so called "Meses Gate¹⁰⁰⁰". Provincial inland network exploited the valleys of the Somes river and of its tributaries to connect the Transylvanian plateau with the regions of central Europe: the most peripheral ring of *castra* and camps controlled those minor accesses, and a line of watchtowers following the mountainous crests potentially assured a continuous control over the imperial frontiers.

A series of small fortlets, usually defined as *burgi* or *castella*, connected the various watchtowers and reinforced the linear defences built to block specific valley and passes, thus assuring a capillary military presence all along the northern *limes* of the province.

These structures have been recently attracted a certain interest in the scientific community. The adoption of modern techniques, such as LIDAR and aerial prospections¹⁰⁰¹, have ultimately

⁹⁹⁶ Deac 2013 pp. 261-270.

⁹⁹⁷ IDR 1,7. See Russu 1973 pp.; Russu 1974 pp. 155-176.

⁹⁹⁸ Eck-Pangerl 2005 pp. 61-68.

⁹⁹⁹ In chronological order: Daicoviciu-Protase 1961 pp. 63-70 (Flavius Italicus); CIL 3, 836 (Tiberius Claudius Quintilianus); CIL 16, 110 (M. Macrinus Vindex); CIL 16,185 (Sempronius Ingenuus)

¹⁰⁰⁰ Tamba 2008 p. 37: the "Stramtura" also defined as the Meses Gate during the Middle Age is only 3-4 kilometers from Porolissum. Concerning the strategic value of the "Stramtura" during the centuries, see the account of Tarca 2012 pp. 164-175.

¹⁰⁰¹ Roman *et alii* 2017 pp. 127-143.

provided a good sketch of the military network in proximity of the provincial borders. Unfortunately, few fortlets have been archaeologically excavated and no one in larger extents.

The military infrastructures were particularly impressive in Porolissum. Not only two *castra*, the larger one on the Pomet hill and a smaller one on the Citera hill, made the site a military base of primary importance, but also a vast complex of linear defenses and ancillary fortification visually confirmed the exceptional status of the settlement.

The province was indeed heavily militarized, and the army has surely played a determinant role in its social and economic development. An *Exercitus Dacia Porolissensis* as a coherent and separated military force is known from the time of Hadrian onward and its creation was probably tied with the institution of the province¹⁰⁰². Brickstamps bearing “EXDP” have been found in present day Napoca¹⁰⁰³, but the older findings have been recorded without specify the exact provenance of the pieces. It seems that a central *oficina* for the production of building materials were active in Napoca, at the time the most important urban settlement of the region and seat of the provincial governor¹⁰⁰⁴.

It should be noted also that under Hadrian were also minted coins bearing the legend “Exercitus Dacicus”. It is unclear however if the provincial army should be considered as a part of the *Exercitus Dacicus*, or if the legend refers instead to the army of Dacia Porolissensis.

The urban development of the region was indeed strongly tied to the military presence in the area. At the beginning of Hadrian reign, Napoca was arguably the most developed town in the area and was consequently chosen as local capital. Slightly more far from the province than Porolissum, that was too exposed and thus non suitable as provincial governor’s seat, Napoca benefitted of his status to grow as important administrative and economic center. Napoca reached the status of *municipium* already under Hadrian¹⁰⁰⁵ and subsequently became *colonia Aurelia* during the reign of Marcus Aurelius¹⁰⁰⁶. Because of the site knew a continuous occupation from the antiquity to modern times, and the Roman city lied nowadays under the center of present-day Cluj, few archaeological data are available for the area, but epigraphic documents from the urban area are relatively abundant.

¹⁰⁰² Macrea 1964 pp. 145-160.

¹⁰⁰³ Besides CIL 3,8063, Macrea (1964 p. 146) mentions also 4 others findings, 2 from the local Museum (inv. No. 5962-5963) and 2 published by Mitrofan 1964 pp. 197u -213.

¹⁰⁰⁴ Macrea 1964 p. 152.

¹⁰⁰⁵ CIL 3, 14465; CIL 3, 6254.

¹⁰⁰⁶ Dobó 1975 n. 859.

It is unclear if Napoca was permanently garrisoned by military units or if governor's defense was entrusted only to his bodyguards. Only the *cohors I Alpinorum* is locally attested¹⁰⁰⁷. A strong military presence influenced the development of Porolissum: the *vicus* grew in proximity of the large *castra* on the top of Magura hill and exploited the important passage of the Meses Gate to develop strong commercial contacts with the barbaricum and the central Europe. The fortified custom attests the importance of commercial exchanges for local economy¹⁰⁰⁸, and archaeological evidences have demonstrated that Porolissum maintained strong contacts even with remote regions¹⁰⁰⁹. It is noteworthy to signal that a mint counterfeiting gold coins destined to the *barbaricum* was active in Porolissum, confirming again the peculiar trade and economic links that tied the Roman settlement and the barbarian regions beyond imperial borders¹⁰¹⁰. The proximity to empire frontiers exposed Porolissum to potential threats despite the huge garrison stationed in place: with three cohorts at least, a number of Palmyrean warriors and the frequent presence of legionary detachments, the area appears to have been heavily defended¹⁰¹¹. The presence of such a strong army surely stimulated local economy, attracting civilians and artisans willingly to work and produce for the army. The *vicus* became a *municipium* under Septimius Severus¹⁰¹².

The third and last urban settlement of Dacia Porolissensis grew in connection with the arrival of the *V Macedonica* legion in Potaissa at the beginning of Marcus Aurelius' reign. As for Porolissum and many other cases all over the Roman empire, the presence of a strong military contingent attracted artisans and civilians, ultimately leading to the born of a large and rich settlement.

The occupation of the area pre-dated the arrival of the *V Macedonica*. An auxiliary unit probably stationed in site before the arrival of the legion and traces of the smaller military camp have been identified under the legion *castra*¹⁰¹³. The presence of thousands legionary soldiers reshaped the region and boosted development of the nearby *vicus*. The new administrative arrangement imposed by Marcus Aurelius entrusted the *legatus* of the *V Macedonica* with the

¹⁰⁰⁷ Vlassa 1965 p. 37.

¹⁰⁰⁸ See Gudea 1996 about the fortified custom in Porolissum.

¹⁰⁰⁹ Gudea 1993 pp. 227-234. See also Opreanu- Lăzărescu 2015 about the economic relevance of Porolissum as marketplace.

¹⁰¹⁰ Opreanu-Găzdac 2016 pp. 25-36.

¹⁰¹¹ As it has been argued before, the identification of a fort garrison heavily relied on tile and brick stamps. Figures can therefore greatly change from one author to others. See Oprean 2018 pp. 365-372 for a discussion. More details will be provided in the section dedicated to Porolissum specifically.

¹⁰¹² CIL 3, 828; SEG 3, 537= IGB III/3, 15990. See also inscriptions found during excavations (Chirilă *et alii* 1980 p. 90; Gudea 1989a pp. 464-465 and 772).

¹⁰¹³ Barbulescu 1994 p. 33; Winkler 1982 pp. 80-81.

supreme command over the army of Dacia Porolissensis, elevating therefore Potaissa to a strategic headquarter for the whole forces in the northern part of the province. The *vicus* became a *municipium* under Septimius Severus and it was later deduced into a *colonia* under the rule of Caracalla.

Not only the presence of strong contingents shaped the economic development of the three most important settlements in the area, but the concentration of so many soldiers in Dacia Porolissensis posed a series of specific logistic problems and influenced the economic exploitation of the region. Any approximation of Dacian Porolissensis army relies upon epigraphic documents. It should be however considered that diplomas and unit brickstamps allow modern scholars only to roughly estimate how many units were stationed in the province in a certain moment, but accounting for the development of the whole system and considering the fluctuation in soldiers quantity in the area can be extremely difficult considering the source of information.

Dacia Porolissensis reached the peak of its military strength at the beginning of the 3rd century AD, when the province had been already reunited to Dacia Superior and Inferior/Malvensis under the supreme authority of the *legatus Augusti pro praetore Trium Daciarum*.

In an attempt to evaluate the total consumption of the army in the area and to assess the volume of the logistic problem faced by imperial army, Gudea has tried to calculate the consumption of soldiers in the area of Dacia Porolissensis¹⁰¹⁴.

Proceeding from epigraphic sources, Gudea has calculated that 3 *alae milliariae*, 4 *cohortes peditatae milliariae*, 4 *cohortes milliariae equitate* and 5 *cohortes equitate* stationed in the area. To this particularly strong core 4 *numeri* should be added and, from the time of Marcus Aurelius onwards also, the full strength of the *V Macedonica* legion¹⁰¹⁵. The total number of men serving in Dacia Porolissensis army can be estimated in more than 16 thousand auxiliary soldiers and 6 thousand (at least) legionaries, with a particularly strong cavalry contingent.

It is noteworthy for the purpose of the present work to signal that only the food aspect has been considered in what has been labelled as a preliminary inquiry on the topic. Raw materials necessary for realizing soldiers' equipment or to build the *castra* and the other infrastructures occupied by the troops have not being taken in account.

Figures regarding daily food consumptions for soldiers have been tentatively deduced from literary sources, even if the results are not homogenous in specialistic literature. Soldiers' diet

¹⁰¹⁴ Gudea 2005 pp. 185-209.

¹⁰¹⁵ Gudea 2005 p. 187.

was fairly standardized in imperial times and comprehended meat, wine and olive oil as part of the daily ration. A single legion required a substantial area just to be supplied with food and fodder, and the total consumption of 22 thousand men army should have put in huge distress the local economy of a small province. Adopting the figure calculated by Mehl¹⁰¹⁶, who has calculated that a 10.000 men strong army could have required 29,200 hectares of fertile land to be supplied, Gudea has concluded that the imperial army in the area had to be at least partially supplied by importations from other provinces¹⁰¹⁷. Furthermore, if we consider that wine production in the area was scarce¹⁰¹⁸ and olive-culture virtually absent, the only solution possible to provide wine and oil to the soldiers was to transport both products from elsewhere.

Animals, both used as food and for the skins, could be imported by the neighboring province of Dacia Superior, that had in its own turn a strong garrison, or imported from the *barbaricum*, a practice already known in other parts of the Roman world¹⁰¹⁹. Gudea offers however no insight about the provenance of oil and wine. The transport from other provinces should have been a complex and vast operation that had to be managed centrally by the state. Remesal Rodriguez has famously argued that those complex logistic operations were administrated as part of the *annona militaris* and therefore put under the authority of the *praefectus praetorii*: oil and wine producing province, such as Baetica province, shipped their products to the rest of Europe¹⁰²⁰. If accepted, Remesal Rodriguez' model provides a theoretic sketch of imperial logistic and a potential answer to the supply problem in northern Dacia, but we are still lacking a definite proof to conclude that the area depended on long distances imports. Gudea's figures highlight nevertheless that the provincial army depended on the resources of an area larger than the province itself. Albeit the area was formally constituted in a separate province, the Porollisensis could be military occupied only in a strong and synergic connection with other Dacian provinces and the rest of the empire. Military commands and administration had for sure a trans provincial level, and logistics as well should have partially work on a higher level than the administrative boundaries of singular province.

¹⁰¹⁶ Mehl 1990 pp. 443-453.

¹⁰¹⁷ Gudea 2005 pp. 193-195.

¹⁰¹⁸ Scarce, but not completely absent. See Cătinăș-Bărbulescu 1979 pp. 101-126 regarding wine production in Potaissa. More in general about wine production in Dacia see Regep-Tuțilă 2010 pp. 27-43.

¹⁰¹⁹ See for instance van Driel Murray's studies on leatherworks in military contexts and imports of leather and skins: Van Driel Murray 1985 pp. 43-81.

¹⁰²⁰ Remesal Rodriguez 1986; Remesal Rodriguez 1990 pp. 55-65; Remesal Rodriguez 2012 pp. 179-190.

11.1 Strategic role of Dacia Porolissensis Army.

In a much-discussed paper, Loreto¹⁰²¹ has argued that procuratorian provinces were mainly intended to deal with the so called “low intensity threats”. Usually created in scarcely urbanized regions, where social and topographical factors complicated the imperial control over the land, military forces deployed in *provinciae procuratoriae* were not strong enough to deal with a full scale invasion nor to challenge the authority of imperial legates of the most important provinces, but there were enough soldiers to challenge bandits and raiders and to overlook passage through provinces or accesses to the empire.

Provinciae procuratoriae were generally relatively far from the borders in order, where the majority of the legions were deployed (*Germaniae*, *Pannoniae* and *Moesiae* were not entrusted to equestrian procurators but to *legati augusti* with the right to command legions on the battlefield) and often plagued by endemic phenomena of banditry or piracy. As a consequence, the limited military forces at disposal of the *procuratores* focused more on internal security and acted mainly to secure the imperial power and control over the land. Loreto’s hypothesis tends to super-impose a homogenous model to the empire by assuming that the Imperial leadership created *provinciae procuratoriae* always with the same intent and always in similar condition. Dacia Porolissensis seems only partially to fit Loreto’s theoretical model. The distribution of soldiers in the region seems to confirm that the local army functioned as an occupation force: soldiers overlooked and controlled the movement through the valleys and the mountain passes that entered into the province; other contingents patrolled the road and secure the hinterland of this remote corner of the empire. The area was however greatly exposed to external threat and indeed the soldiers of Dacia Porolissensis found themselves in control of a highly strategic frontier sector.

In previous chapter it has been argued that the provincial army of Dacia globally functioned in multiple levels in a way that resembles an immense fan. If a frontier sector fell under a greater menace, troops from the heart of the province could gather to oppose a stronger resistance to the enemy. Dacia Porolissensis had indeed been created after a period of intense warfare that engulfed the whole area and it is possible that Hadrian decided to split the Trajanic Dacia as a consequence of the events, but the reasons that drove this decision remained obscure.

The new arrangement of the region proved functional at least for half a century, until the reign of Marcus Aurelius when the war shaded the region once again. Not far from Dacia Porolissensis

¹⁰²¹ Loreto 2000.

frontier, the tumultuous *barbaricum* was indeed changing. Community of Dacians still free from the Roman power existed outside the province¹⁰²², the arrival of the Vandals shattered the existing equilibrium and threw the area in turmoil¹⁰²³.

Not only the whole Dacia was involved in Marcus Aurelius long war in the Danube area, but the area of the Porolissensis suffered greatly for the events.

Traces of destruction at Micia and Tibiscum confirm that the area was under attack somewhere during the second half of the 2nd century AD. An inscription commemorating Commodus *restitutor commerciorum*¹⁰²⁴ not only highlights once more the commercial vocation of the area, but it also means that the region still suffered of a prolonged state of warfare at the end of the 2nd century AD. Literary sources provide no information about, but evidently the populations settled beyond the imperial frontiers were still openly hostile at the time. It is noteworthy also to signal a state of alert in the area at the beginning of the 3rd century AD¹⁰²⁵. An inscription, found at Micia, but unfortunately lost nowadays, attests an unusual concentration of troop in the *castra*: 2 *alae*, 5 *cohortes* and 3 *numeri* were gathered in the camp¹⁰²⁶. Another inscription from Germisara, dedicated to the Fortuna of the emperors by a military officer from the *castra* of Hoghiz, seems to confirm that the Dacia Porolissensis army was at the time involved in large scale operations¹⁰²⁷.

Dio 75,3,1 vaguely speaks about a war against the "Scythians", and a similar information can be found also in Orosius and Michael the Syrian¹⁰²⁸. In Hieronymus¹⁰²⁹ is mentioned a *Iudaicum et Samaraticum bellum motum*, but it is possible that the term has been corrupted from the original Sarmaticum. It is interesting to note that to deal with such a threat, soldiers from Dacia assembled in a military base of the second line of defence hypothesized by Gudea. *Castra* of the mid-level of defences were not second line bulwarks, destined to stop the advance of an invading force, but they rather functioned as platform from which launching counterattacks and larger operations.

¹⁰²² Opreanu 1994 pp. 193-220.

¹⁰²³ Dio 72,8,1.

¹⁰²⁴ Gudea 1988 pp. 175-189.

¹⁰²⁵ Gostar 1968 pp. 93-12.

¹⁰²⁶ CIL 3, 1343.

¹⁰²⁷ CIL 3, 1393.

¹⁰²⁸ Oros. 7,17,3; Mich. Syrus Chronicon 6,7.

¹⁰²⁹ Hieronymus *ab. Abr.* 2213.

If this interpretative model is correct for the whole Dacia, it could be argued further Dacia Porolissensis, whose defences was extended on three lines, functioned in a very similar way:

- The peripheral defences overlooked specific sectors of the frontiers but the *castra* could be grouped in “cluster”, each cluster guarding an access to the province.
- It is possible that a functional hierarchy existed among the bases of a same cluster, with larger *castra* with stronger garrison and larger logistic facilities.
- Clusters were connected to the military bases of the second level via the major inland routes of the region, creating a network that linked the most peripheral defences with the centre of the province.
- Distinct parts of the provincial military network could theoretically and potentially work autonomously, and a deeper coordination was required only as response to specific situations.

Preliminary data seems to confirm that some sort of centralised military logistics existed already. The presence of a central command, with a central workshop that produced building materials not for a specific unit, and the exigence to supply soldiers with non-local products imply a certain degree of central coordination.

11.2 - West Flank.

Two forts protected the western sector. The fort of Bologna, located near the confluence of the Sebes into the Crisul Repede, represented the “first line” of the military network in the area, overlooking and guarding the access to the west.

In a more internal position, the fort of Gilau was located west to Napoca, completing in this way the half-ring of military bases that protected the important city from west, north and north-east.

Gilau. The fort at Gilau presents some very interesting features. The area was known for having be occupied in Roman times since the 19th century, mostly thanks to the inscriptions collected in the area. Torma enlisted the site already in his work, but the fort was really identified only in 1943¹⁰³⁰.

¹⁰³⁰ Torma 1863 (pp. 6-10) ; Ròska 1944. Both are quoted by Isac 1997 pp. 9-10. See also Rusu 1979 pp. 1534-194 for an account of early researches in the area.

Built after the end of the Dacian wars, the *castra* were strategically located to overlook the valleys of the Cèis and the Crisul Repede, guarding a major inland route towards Napoca, only at 16 km from the site¹⁰³¹. Evidently, soldiers at Gilau acted as a sort of garrison for the near Napoca and the provincial governor that had seat in the town. The fort can be considered as a sort of second line for the Bologa sector, since the first base barred the valley of the Crisul Repede that ultimately reached Gilau.

Three main phases are known. Under Trajan, the *castra* occupied a smaller area (130x116 m, roughly 1,15ha) and was garrisoned by *the cohorts I Pannonia veterana pia fidelis equitata*¹⁰³².

This earth and timber fort was short lived and it was enlarged already at the beginning of Hadrian reign, when the *Ala Siliana* replaced the mounted infantry cohort in the site¹⁰³³. Curiously, while the *principia* and the *praetorium* remained in the same position, the fort was enlarged more in the *retentura* and less in the *praetentura* and in the central area of the fort. The commander building and the headquarters resulted therefore slightly out of the fort centre. Perimetral defences were rebuilt in stone during the third phase together with substantial changes in the internal plan of the fort.

The organization of spaces and buildings inside the *castra* is relatively well known.

The *praetorium* and the *principia*¹⁰³⁴ have been systematically and entirely excavated. The *praetentura* and the *retentura* have been extensively studied through various test trenches, highlighting the essential outlines of various barracks and a stable complex to lodge unit horses. For the purpose of the present work, it is sufficient to point that in Section XIX, opened in *retentura sinistra*, a good amount of bronze objects have been found, some of which look unfinished. Possibly, those pieces were crafted inside the *castra*, but no clear structure can be associated with bronze working activities. The pieces have been dated to the second phase of the fort¹⁰³⁵.

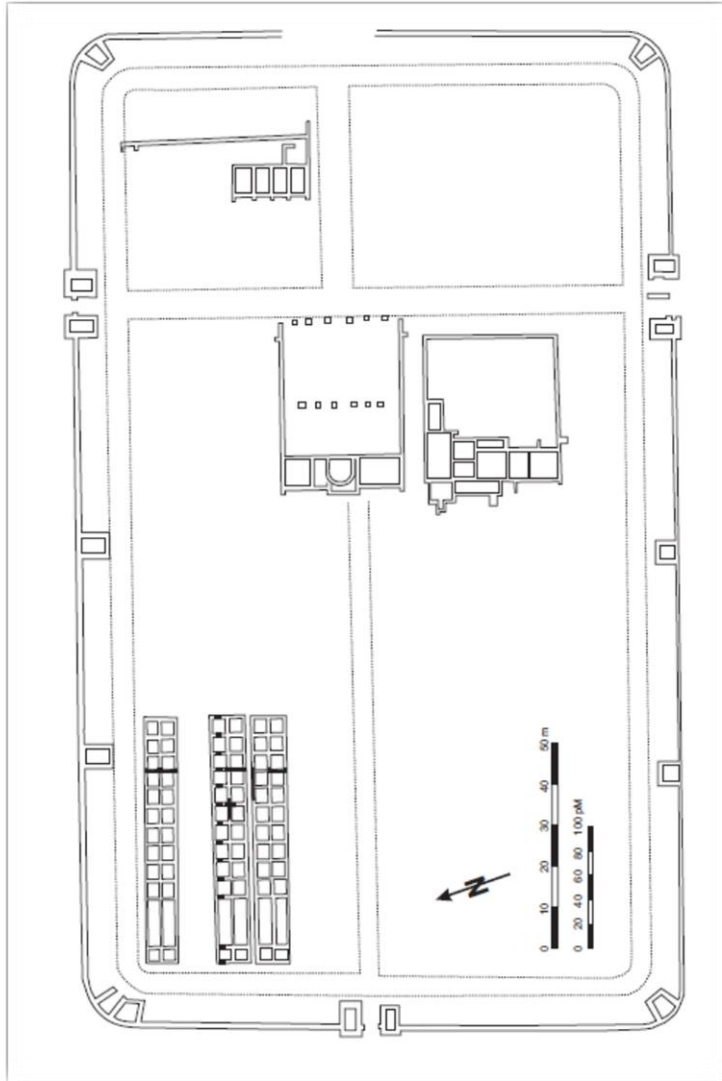
¹⁰³¹ Isac 1997 p. 12.

¹⁰³² Isac 1997 pp. 14-15 and p. 21 and ff.

¹⁰³³ Marcu 2009 p. 71. Regarding the arrival of the Ala Siliana: Isac 1979 pp. 39-67.

¹⁰³⁴ Isac-Diaconescu-Opreanu 1983 pp. 85-101 (*principia*); Isac 1997 pp. 41-4 (*Praetorium*) and Isac – Hùgel - Andreica 1994 pp. 50-4.

¹⁰³⁵ Isac 1997 pp. 45-46.



A combustion structure is known from the first phase of the fort. This structure was located in the room “b” of the double barrack in the *praetentura sinistra*, but the structure seems to have functioned rather as an oven for a camp kitchen and not as a metallurgic facility¹⁰³⁶. A curious building, the building “A”, has been partially uncovered in the *praetentura dextra*. The structure has large dimension of 41x41, larger than a normal or a double barrack. The plan is incomplete, the structure, that apparently functioned during the second and third phase of the fort¹⁰³⁷, presents a group of five rooms located along the south wall but it is possible that the rest of the structure was similarly divided in multiple ambients arranged around a central hallway.

The prospected plan is compatible with various types of military building, in particular with a *valetudinarium* or a *fabrica*. A military workshop of such dimensions looks indeed impressive and unusual, it is not easy to understand why such a large structure was built in a fort of the secondary line and so close to the important civil settlement of Napoca. A comparable situation is known from Ilişua, where a cavalry unit was garrisoned too. It could be imagined that a cavalry unit needed more metallic equipment than an infantry one, but the resulting picture is blurred and unclear.

Gilau is indeed relatively close to the minery district of Dacia Superior: if the building A was really a military workshop, it could have exploited the good connection with

¹⁰³⁶ Isac 1997 p. 33.

¹⁰³⁷ Isac 1997 p. 69; Marcu 2009 pp. 77-78.

Dacia Superior iron mines to have functioned as a sort of logistic hub at least for this part of the Dacia Porolissensis frontier. Evidences are however not completely convincing, and it is still unclear the purpose of this facility.

Bologa. Following Gudea's scheme, Bologa is the first military camp of the Dacia Porolissensis border. Located to the south-west corner of the province, the *castra* at the present day village of Bologa, built on a small plateau near the confluence of the two rivers, overlooked two important roads that entered the province from the west: the route through the valley of the Crișul Repede and the one that passed through the valley of the Sebes (valea Săcuieului)¹⁰³⁸.

The site was known in the 19th century already and at that time the ruins of the military base were indeed visible over the surface. Finály was the first to mention the Roman base at the site¹⁰³⁹, Torma later enlisted the site among the Dacian *castra* in his study on the Dacian *limes*¹⁰⁴⁰.

The identification of Bologa with the Latin *Resculum* has been proposed¹⁰⁴¹ and widely accepted, but it nevertheless poses some problems. The toponym Resculum appeared in a fragmentary inscription from Almașul Mare according to the reading of Torma¹⁰⁴². Together with this *statio Resculum* appeared also a *vicus Anartorum*¹⁰⁴³. The inscription has been unfortunately lost and Torma's reading cannot be proved or disproved anymore. *Statio Resculum* appears also in a tablet from Alburnus Maior and it has been therefore argued that Resculum was rather a small military post in the area surrounding the minery district of Alburnus Maior and not a military base of Dacia Porolissensis¹⁰⁴⁴.

The proximity to the important mining area of the Apuseni mountains and to the valleys of the Sebes and the Crișul Repede has surely made the *castra* at Bologa a strategic key location.

Numerous ancillary infrastructures are known from the area. Watchtower on the nearby mountain tops helped the soldiers to control passages across the frontier¹⁰⁴⁵, and some burgi

¹⁰³⁸ Marcu 2009 p. 26; Gudea 1997a pp. 9-11.

¹⁰³⁹ Gudea 1997a p. 11 mentions Neugebauer 1851 pp. 242-243 as the first to have mentioned the Roman *castra* at Bologa, while Macrea 1938 p. 109 mentions Finály 1864-65 pp. 5-8 instead.

¹⁰⁴⁰ Torma 1863 p. 36.

¹⁰⁴¹ TIR - *Tabula Imperii Romani* (Bucharest 1969) L 34 p. 96.

¹⁰⁴² Torma 1880 pp. 11-59.

¹⁰⁴³ CIL 3, 8060.

¹⁰⁴⁴ ILS 7215.

¹⁰⁴⁵ Gudea 1997a pp. 13-16.

have been identified in nearby since the 19th century, when Torma identified and described many of those structures in his works¹⁰⁴⁶.

The presence of stamped building material in some watchtowers have confirmed that this frontier sector was under the authority of Bologna military base¹⁰⁴⁷. Watchtowers built along the *limes* presents two distinct plans, implying two distinct phases of construction¹⁰⁴⁸. Those structures were possibly built directly with stone and bricks. Seven square-base watchtowers represent the older frontier line and constitute a military complex together with the earth and timber *burgus* built in the locality of Poic. Possibly after the Marcomannic war, 12 more towers were built between the exiting ones, together with a new *burgus* at Negreni¹⁰⁴⁹. Despite it has been hypothesized that a linear defence connected the various outposts and completed therefore the military complex¹⁰⁵⁰, no archaeological evidences of *valla* have been found and more recent researches have concluded against this possibility.

The area under the supervision of Bologna was thus relatively large and implied a certain spreading of soldiers, limiting the available manpower and military workforce for possible productive activities. It is unclear how many men were required to guard a watchtower, nor how many soldiers were detached to the various *burgi*.

On the base of similar excavated structure¹⁰⁵¹, it could be argued that each fortlet garrisoned roughly 80-100 soldiers, depending on its size. Calculating how many soldiers were sent to the watchtower line is more complicated. The base unit of the Roman army was the 8 men team known as *contubernium*: soldiers of the same *contubernium* not only fought together on the battlefield but shared also a series of social practice intended to strength their interpersonal relations, creating strong boundaries in this way.

It seems logical to presume that daily duties were assigned per *contubernium* or eventually on proportional sub-units (2 men team, 4 men team). If 8 men were assigned to a singular watchtower, the frontier complex (19 watchtowers and 2 *burgi*) required roughly 360 soldiers, plus an unknown number of patrols and specially assigned squads. Sub-units of 2 men (38 for the watchtowers, 5 *contubernia*) or 4 men (76 men for the watchtowers, 8 *contubernia*) are more likely but it remains a numerical problem (19 is not a submultiple of 80). In any case,

¹⁰⁴⁶ Torma 1880 pp. 11-59.

¹⁰⁴⁷ Gudea 1997a p. 15.

¹⁰⁴⁸ Gudea 1985 pp. 143-218.

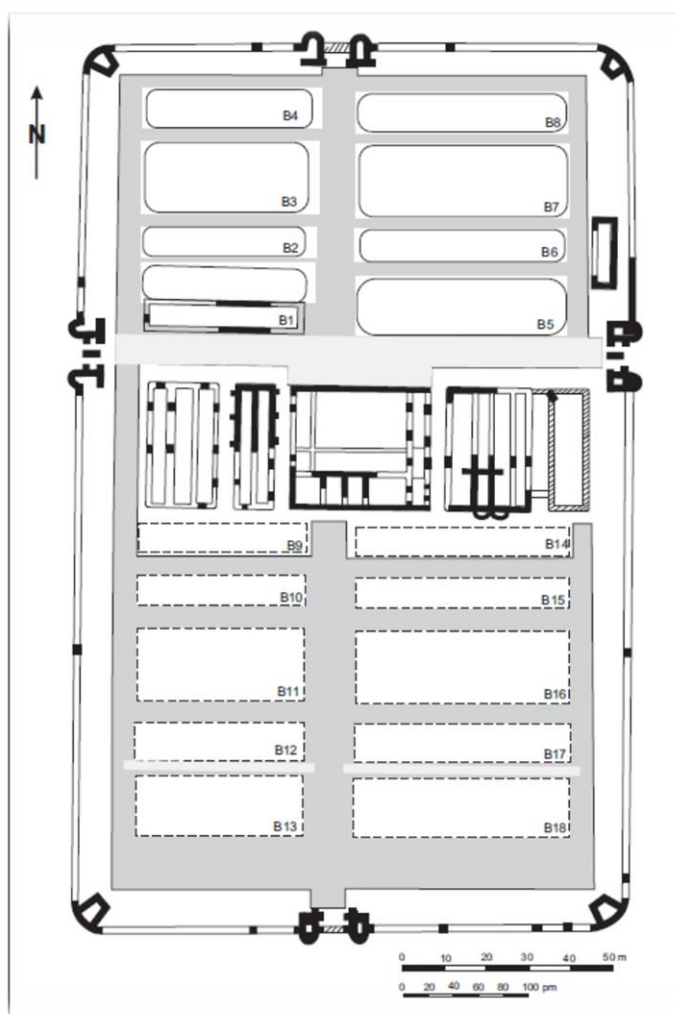
¹⁰⁴⁹ Gudea 1997a p. 15.

¹⁰⁵⁰ Daicovicu 1935 pp. 240-256 and 255-256 in particular.

¹⁰⁵¹ Gudea 1996 *passim* has estimated that Porolisum fortified custom and similar *burgi* nearby could host 100 soldiers approximately, but the figure looks debatable.

a large number of soldiers were daily employed along the frontiers and outside the military base even in “normal” times.

Three phases are known for the *castra*. At the beginning, right after the Trajanic conquest of the area, the site was occupied by a small earth and timber camp. The measures of this older fortification are poorly known and they have been differently reported in various publications. The oldest camp at Bologna has been described as a square of 130x130m or as a rectangular camp of 130x152m / 125x160m depending on the measure points adopted¹⁰⁵². Due to the late construction of the fort of second phase, the internal plan of the oldest *castra* is unknown.



The reconstruction of the fort was probably motivated by a changing in local garrison.

It is generally considered that the first layer of occupation pertains to the presence in situ of the *coh. I Ulpia Brittonum*, later transferred to Porolissum¹⁰⁵³. The troop was replaced by the *coh. II Hispanorum*¹⁰⁵⁴ (later *coh. II Hispanorum scutata Cyrenaica equitata* as it appears on the diplomas of the AD 151¹⁰⁵⁵ and AD 154¹⁰⁵⁶). As Marcu has pointed out, the presence of building materials marked with a CES stamp could rather point to an obscure, or “irregular” unit already stationed at Bologna at the beginning of Trajanic era¹⁰⁵⁷. This could have been the very same cohorts later attested in situ under the name of *coh. I Aelia gaesatorum*,

¹⁰⁵² Gudea 1997a p. 17; Gudea 1997b p. 41.

¹⁰⁵³ Gudea 1996 p. 18. Cf. Gudea 1989a pp. 163-164

¹⁰⁵⁴ Gudea 1997 p. 24.

¹⁰⁵⁵ RMD 5, 404 = ILD 38.

¹⁰⁵⁶ IDR 1,17b = IDR III/1, 98b; CIL XVI, 110 (p 216) = IDR 1, 17a = IDR III/1, 98a.

¹⁰⁵⁷ Marcu 2009 p. 34.

possibly organized or re-organized under Hadrian and moved to Pannonia, where it became *quingenaria*, and subsequently redeployed in Bologna around the mid of the 2nd century AD¹⁰⁵⁸.

The second phase of the *castra* is marked by a consistent enlargement (+75m) of the long side of the camp¹⁰⁵⁹. This changing can be dated some years before the AD 133, when the *cohort I Aelia gaesatorum* is mentioned for the first time in Dacia Porolissensis. The fort was rebuilt in stone, reaching the final dimension of 133,30x213m recorded by Gudea, probably at the beginning of the 3rd century AD, it is generally presumed that Caracalla's passage in the region represented the occasion for a massive program of renovation¹⁰⁶⁰. The most conspicuous volume of data regarding the internal plan of the fort came from this third phase of the fort that lasted until the abandonment of the area between the reign of Gallienus and Aurelian. Gudea's research activities have mostly focused on the peripheral defences of the fort, on the central area with the *principia* and the *praetorium*, and the barracks of the *praetentura*. The most recent researches have focused on the headquarter buildings, enlarging the older trenches and deepening the understanding of that part of the *castra*¹⁰⁶¹.

At the present state of excavation, no workshop-building has clearly emerged from the site. The only logistic structure highlighted by archaeological excavations is a *horrea* complex located in *latus sinistrum*, roughly 4 meters from the *principia*. The building measures 10x28,5 m, covering 1% of the total surface of the fort. The surface covered in relation to the total extent of the fort appears slightly under the average value, that fluctuates between 2% and 3% of the fort area¹⁰⁶².

However, a second building have been identified between the *horrea* and the *porta principalis sinistra*. The structure, whose plans has been summarily sketched by Gudea, is apparently a rectangle of 28,5 x 20,5 m. The structure does not present the external buttresses that generally characterised ancient granaries. The purpose of the building is unclear. Marcu has recently proposed to consider it a second granary, a *horrea* with two large rooms separated by a central courtyard¹⁰⁶³. According to Gentry, the surface occupied

¹⁰⁵⁸ In Pannonia: AE 1995, 1823.

¹⁰⁵⁹ Gudea 1997a p. 25.

¹⁰⁶⁰ Gudea 1997a p. 48.

¹⁰⁶¹ <http://ran.cimec.ro/sel.asp?descript=bologna-poieni-cluj-castrul-roman-de-la-bologa-gradiste-cod-sit-ran-59069.01>; <http://cronica.cimec.ro/detaliu.asp?k=4994&d=Bologna-Poieni-Cluj-Castrul-roman-2012> ; <http://cronica.cimec.ro/detaliu.asp?k=5296&d=Bologna-Poieni-Cluj-Castrul-Roman-2014>

¹⁰⁶² Gudea 1973 pp. 109-137; Marcu 2009 p. 31.

¹⁰⁶³ Marcu 2009 p. 32.

by *horrea* and storage buildings is generally 1,5-2,0 % of the total space available¹⁰⁶⁴. If this building was indeed a granary, or rather a more generic type of warehouse where in soldiers could store various goods, the total surface dedicated to logistic purposes is doubled and fall into average parameters for this type of fort.

Bologa was apparently not a major logistic base for the sector, the fort had enough space to store the supply for the garrison, but the area was not suited as a platform from where the imperial army could launch large scale operation.

Another feature deserves to be considered for the purpose of the present work. The *castra* at Bologa present a building that partially overlapped the *via sagularis*. This arrangement is uncommon but not unusual and others fort in Dacia present the same feature¹⁰⁶⁵. The true purpose of this kind of building is not always clear. In the case of Porolissum, for instance, it worked for a brief time as *ballistarium*, but no evidences have been provided from Bologa.

Despite no *fabrica* has been found in site, traces of metallurgic activities in situ are known. Small crucibles have been reportedly found by Gudea in the barracks area, but the exact location of the findings have been not reported¹⁰⁶⁶.

As far as it emerges from the published archaeological records, no concentration of crucibles has been highlighted and it could be argued as a consequence that those findings should not be considered in a particular relation with a specific building. Traces of heart fires and combustion structures are also missing. Crucibles were of small dimensions and apparently suited to craft bronze or even glass objects, no traces of iron working have still emerged. Bronze was expensive but relatively easy to melt. It was however used not for weapons but rather for decorations, *fibulae* and other small objects.

However, analysis on iron objects found in Bologa has confirmed that the source for metal was limonite extracted in the Apuseni mountains, not far from Bologa¹⁰⁶⁷. This evidence does not automatically allow to conclude that weapons and armours were produced inside the *castra* or by a nearby workshop, but military equipment could have been supplied from nearby facilities.

Small reparations were practiced in situ and small objects were crafted as well, but despite its impressive garrison, nothing indicates that Bologa has worked as a logistic hub. It is

¹⁰⁶⁴ Gentry 1976.

¹⁰⁶⁵ Macrea 1939 pp. 219–221 mentions the building as a construction of 15,65 x 3,60 m. Gudea 1997a p. 45 with different dimensions (17.00 × 6.00 m).

¹⁰⁶⁶ Gudea 1977 p. 186.

¹⁰⁶⁷ Stoicovici 1983 pp. 239-247.

noteworthy to signal that one of the units stationed in Bologa bore the very interesting name of *cohort II Aelia gaesatorum*. Evidently recruited by Hadrian among a Celtic population, possibly the Raeti, soldiers of the cohort apparently were equipped with the *gaesus*, a heavy type of spear that could be used in close quarter combat or hurled against the enemy¹⁰⁶⁸.

If the soldiers of Bologa garrison were indeed equipped with this very specific weapon, and if the weapon itself required specific skill to be produced and used, it could be possible that dedicated artisans were active in the area.

Despite a huge quantity of iron made weapons has been found in Bologa fort, allowing Gudea to propose a table to account the chronological development of arrowheads and spearheads used in Roman Dacia, no *gaesus* type javelin has been recovered in situ. At the present state of research, it should be concluded that the unit maintained the original title but progressively replaced the *gaesus* with more standard Roman-style weaponry, simplifying the supply chain.

Buciumi. Following the *limes* going north, the next fort is at the present-day village of Buciumi. The military base was built on a terrace at the confluence of the Lupu valley and the Mihaiesei one. The position was carefully chosen to overlook the valley of the Rag and a series of minor mountain passes, among which the Poic was probably the most important, that gave access to the province from the North-West¹⁰⁶⁹.

The site was known since the 16th century, when it was mentioned by Stephanus Zamosius in his historical work, and the ruins should have been still visible in the 19th century, when they were seen and described by Torma¹⁰⁷⁰.

Systematic excavations began in 1963 under the supervision of Chirila and continued until recent years¹⁰⁷¹. Two phases are known, during the first one the fort perimetrical defences (125x160m) were constituted by earth *valla* with timber palisades on top¹⁰⁷², later substituted by stone walls (134x167m) during the second phase¹⁰⁷³. As in many other cases in Dacia, the stone fort at Buciumi can be dated to the 3rd century AD, possibly with a strong connection with Caracalla's visit in the region¹⁰⁷⁴.

¹⁰⁶⁸ RE VII 1910 pp. 462-463; Dizionario Epigrafico III 1922 p. 257. Holder 1998 p. 258.

¹⁰⁶⁹ Marcu 2009 p. 36.

¹⁰⁷⁰ See Russu 1959 pp. 305-320.

¹⁰⁷¹ The results were published in Chirila- Gudea- Lucăcel-Pop 1972.

¹⁰⁷² Gudea 1997c pp. 19-21.

¹⁰⁷³ Gudea 1997c pp. 40-45.

¹⁰⁷⁴ Gudea 1997c p. 54.

The fort was only slightly enlarged during the process, meaning that the original dimensions were suited already to garrison a *milliaria* cohort of soldiers. The permanent garrison at Buciumi should have been roughly one thousand men, slightly less if we consider that a *cohors milliaria* had approximately 960 men in its full strength and without considering the non-military personnel attached to the soldiers¹⁰⁷⁵.

The fort controlled a frontier sector extended from Poic pass to Vârful peak. A line of watchtowers assured the military control over the passage along and through the imperial frontiers. Such a line was known since the 19th century and it is described by Torma, Buday, Daicovicu and I. Ferenczi¹⁰⁷⁶.

Gudea started some methodologically modern researches on the watchtower line, but consistent information on these ancillary installations is still lacking for the area.

Estimated 23 towers have been attributed to Buciumi garrison, plus two small *burgi* and a stone wall (*clausura*) blocking a access to the province¹⁰⁷⁷. Towers with a circular plan appear to be older, and, as in the case of Bologna, the line was reinforced with other squared-plan towers at the time of Marcus Aurelius¹⁰⁷⁸. Three towers (numbered 16, 27 and 37) had larger dimensions and were probably signal outposts in visual connection with other installations¹⁰⁷⁹.

The Poic pass was controlled by a small *burgus*, and the Rag pass, to the west, was overlooked by a similar structure (47x55 m). The Rag pass was also blocked by a *clausura*, a stone wall 750 meters long that forced the passage to a strictly guarded access¹⁰⁸⁰.

As in the case of Bologna, the number of soldiers employed along the frontier can be just tentatively estimated. The highest figure (8 men for tower, 100 for each *burgus* for a total of 284 soldiers) implies that a huge part of available manpower was daily employed outside the *castrum*, greatly limiting any possible productive capability. Even if these number can be reduced or halved, the impressive display of towers and *burgi* seems to indicate that patrolling this extended *limes* sector represented a consistent part of Bologna garrison duty.

¹⁰⁷⁵ Cheesman 1914 pp. 21-56 for a discussion. See also Cupcea-Marcu 2006 pp. 179-196 about military units in Roman Dacia.

¹⁰⁷⁶ Torma 1880; Buday 1912b pp. 103-112; Daicovicu 1935 pp. 240-256; Ferenczi 1974.

¹⁰⁷⁷ Gudea 1997c p. 16.

¹⁰⁷⁸ Gudea 1997c p. 17.

¹⁰⁷⁹ Gudea 1997c pp. 17-18.

¹⁰⁸⁰ Gudea 1997 p. 17.

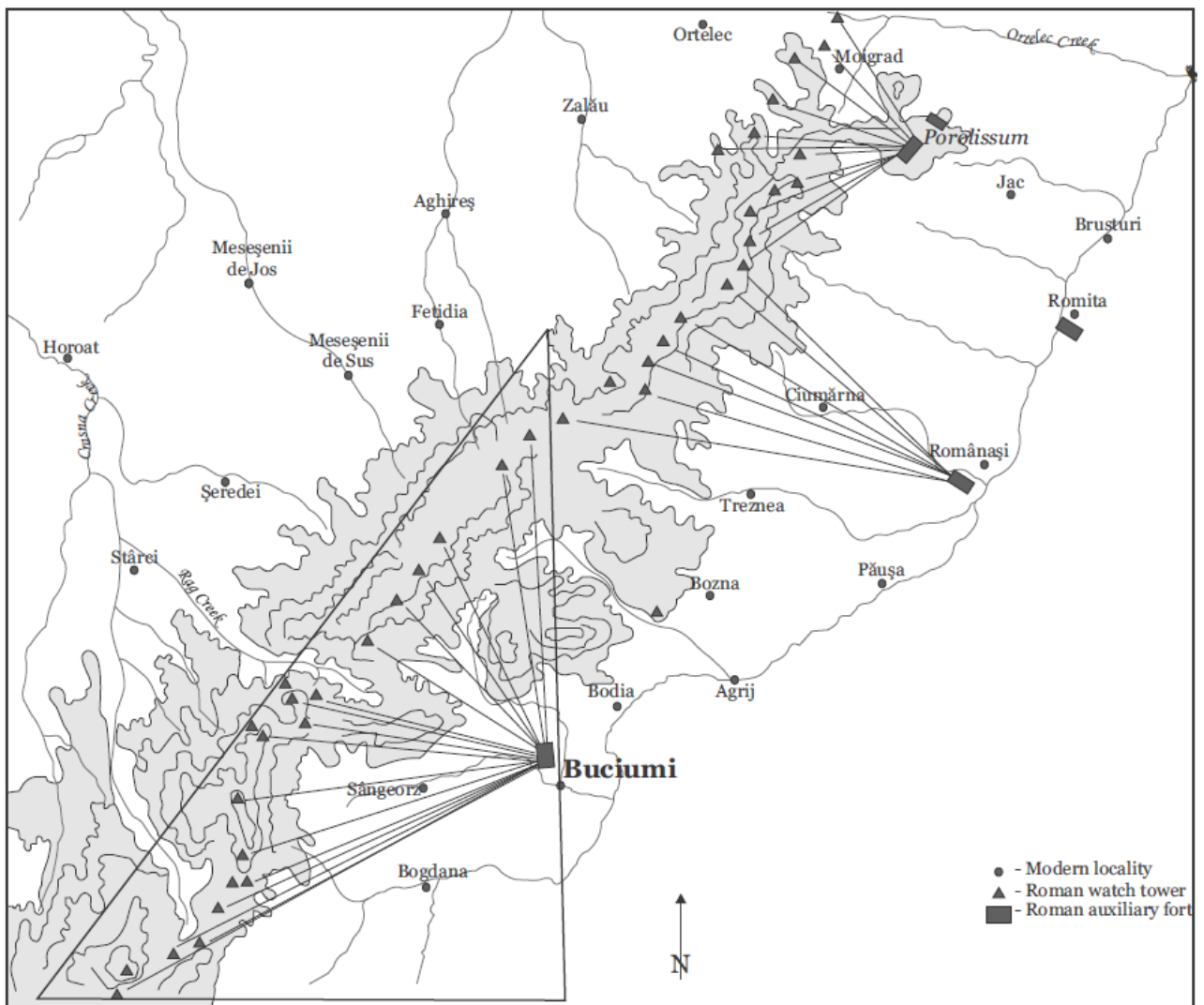


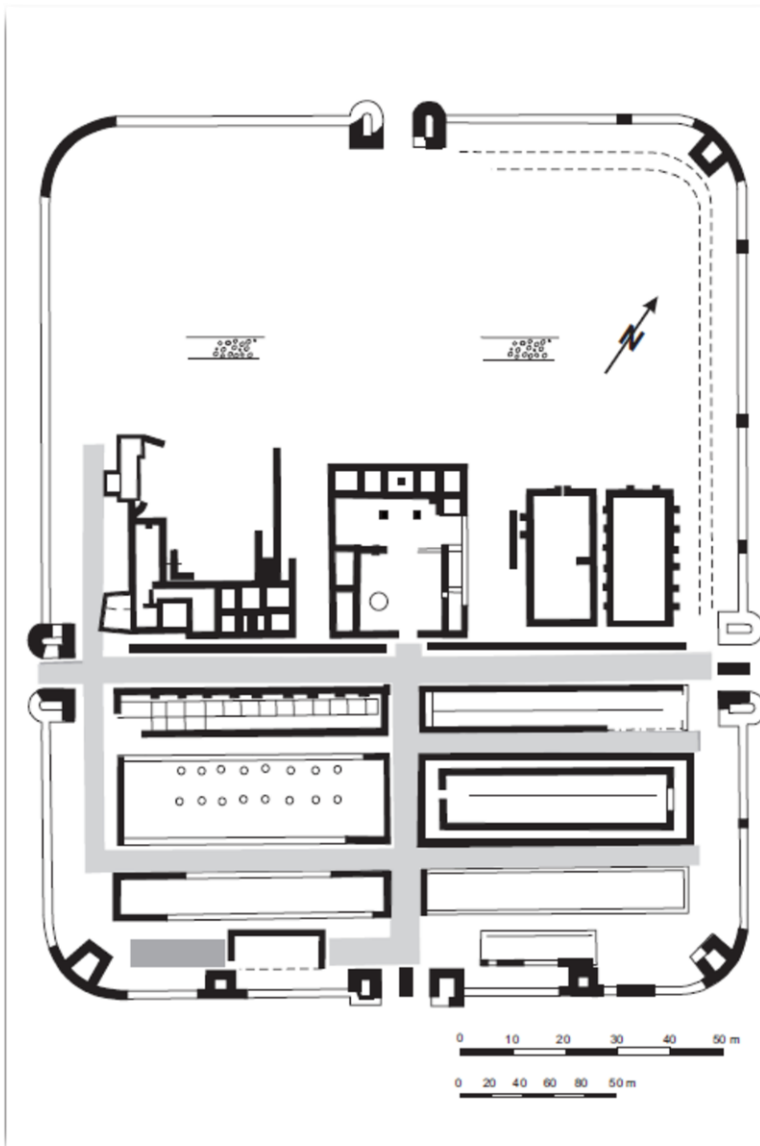
Figure 5 Watchtowers line from Buciumi to Porolissum. From Gudea 1997 fig. no. 6.

The situation for the first phase of the fort is in general less clear. Judging on the very few data available, it has been presumed that the site was occupied by the *cohors I Augusta Ituraeorum*, possibly a cohort *equitata* and *quingenaria*, and perhaps the *cohors I Ulpia Brittonum*, but it is unclear if the unit was present in full strength or if just few detachments were sent to occupy the forte since the unit attested elsewhere in the province¹⁰⁸¹. The garrison changed during the reign of Hadrian, when the *cohors II Augusta Nervia Pacensis milliaria* arrived in the camp and here it remained until the abandonment of the whole Dacia¹⁰⁸².

¹⁰⁸¹ Chirilă-Gudea-Lucăcel-Pop 1972 pp. 117–8; Gudea 1997, 25.

¹⁰⁸² CIL 3, 8074,22. Russu 1959 p. 311.

The fort has benefitted of extensive and systematic explorations, and now half of the base has been uncovered and studied. In recent times, the site has been musealized allowing a visual confirmation of the structures published, or at least it is possible to outline the internal plan of the fort in its last phase¹⁰⁸³. As in the case of Bologna, the subsequent phase of occupation of the forts have partially obliterated the earlier stages, limiting the information available for the earlier years of occupation both in quantity and quality.



A particular attention has been paid as usual to the defensive elements, to the gates, and to the headquarter buildings. *Principia* and *praetorium* have been extensively excavated and a great effort have been paid to provide a complete reconstruction of it¹⁰⁸⁴. However, for the purpose of the present work, more interesting information came from the barracks area.

Gudea marks a distinct phase “1b” of the earth and timber fort, corresponding to the change in garrison during the reign of Hadrian. The overall dimension of *castra* did not change, but the barracks were re-arranged to

host a singular larger unit instead of two smaller formations¹⁰⁸⁵.

For this earlier phase, it is noteworthy to signal the structure named B4 by Gudea, that presents some interesting features. The structure presents a relatively simple

¹⁰⁸³ I have visited the fort during the summer 2018: the layout of many of the structures is perfectly visible.

¹⁰⁸⁴ Landes Gyemant-Gudea 1984 pp. 165-207.

¹⁰⁸⁵ Gudea 1997c pp. 28-31

rectangular plan, similar to the near B1 building, of 9,4 x 49,25 m.

In its earlier phase, the structure presents only an internal wattle and daub wall that divided the area in two rooms of different dimensions. Gudea have proposed to consider the building as a *valetudinarium* or a warehouse of some kind, but nothing can prove or disprove the hypothesis¹⁰⁸⁶.

Buildings of the *praetentura sinistra* seem indeed to have been a more practical function. Near B4, another large building have posed many problems of interpretation. The structure B5 had the dimension of a double barrack, a rectangular plan of 20x51, but did not present the usual feature of such a structure. Instead of being divided in small rooms, where a 8 men squad known as *contubernium* could found place, the building present a central large room, surrounded by a hallway created by the space between the external and internal wall¹⁰⁸⁷.

As pointed out by Marcu, plan and dimension resemble that of a basilica with two lateral aisles, but the building technique are not suited for such a monumental building¹⁰⁸⁸. According to Gudea, in the earlier stages the building was simply a rectangular space internally divided by a thin wall in two equal parts, only in a later moment the enclosure was added¹⁰⁸⁹. Marcu is more doubtful about the phase of the internal division, surely dated by Gudea to the earlier phases, and he has rather highlighted the similarities with buildings known for having functioned as *basilicae exercitatoriae*¹⁰⁹⁰.

A similar scepticism could be extended to the heart-fires found inside the building. Gudea is not clear about the layer wherein traces of combustion have been found, but from the reports he has published it seems sure that B5 never changed its function during the history of the *castra*. It could be perhaps argued that traces of combustion have been found in oldest and newest layers as well.

In his comprehensive work on Roman *castra* in Dacia, Marcu seems to ignore that the building has been associated with numerous fragments of crucibles and slags, both attesting metallurgic activities in situ. Gudea has not provided information about the crucibles, and in the case of Bologna no analysis has been done over the metallic objects found in situ. It seems rather plausible that, as in the case of Bologna, those crucibles were used rather for

¹⁰⁸⁶ Chirilă-Gudea-Lucăcel-Pop 1972 p. 12 Gudea-Landes 1981 pp. 251-252; Gudea 1997c p. 29. See also Marcu 2009 pp. 48-50.

¹⁰⁸⁷ Chirilă-Gudea-Lucăcel-Pop 1972 p. 23. Landes Gyemant-Gudea 1984 p. 181; Gudea 1997 pp. 29-30.

¹⁰⁸⁸ Marcu 2009 p. 51.

¹⁰⁸⁹ Gudea 1997c p. 51.

¹⁰⁹⁰ Marcu refers here to Wilmott 1997 pp. 581-576 and Walthew 1995, Table A, B, C.

the production of bronze object and not to craft iron weapons and armours. Iron melting required a superior heat that cannot be reached with a simple heart-fire, and no traces of forges have been found in the structure.

If B5 was indeed a *fabrica*, it had a rather uncommon plan. Roman military workshops were built in a manner that facilitated the division of work: numerous rooms arranged around a central courtyard or, in the smaller cases, at both sides of a hallway¹⁰⁹¹. B5 does not actually respect this general overlay, therefore it cannot be considered a military workshop beyond any doubt.

Two stone *horrea* have been identified in *latus sinistrum*, both built on top of previous timber structures. Both building presents the same dimension of 25x12,80 m, but while the structure C6 presents all the features of a classic *horrea*, C5 did not present the necessary buttresses. C5 walls were relatively thick, but not enough especially considering the huge and heavy roof that covered the structure. Furthermore, two small rooms were attached to C5 with unknown purpose¹⁰⁹².

If both structures are considered *horrea*, the total surface covered represents the 3% of the fort, roughly two times the standard for a *cohors milliaria* garrison. Considering the absence of buttresses, C5 could have had a different but unknown purpose.

If the space occupied by warehouses and other storage facilities is reduced to 1,5% of the total, it follows that the *castra* did not work as a logistic hub. This hypothesis appears consistent considering the scarce traces of productive activities, the proximity and the close relation of the fort to other installations and in particular to the large military base of Porolissum. The presence of many towers, *burgi* and linear defences is not compatible with a logistic platform and it rather seems that Bologa was not intended to function as a major hub from where it could be possible to gather large contingent of troops nor to launch vast scale operations.

At the present state of research, it can not be concluded that Buciumi garrison was able to produce its own military equipment inside the fort: workshop could have existed somewhere nearby the base (but such a building has not been found) or soldiers were supplied from elsewhere.

Considering a possible simultaneous presence of *cohors I Ituraeorum* in Buciumi and Porolissum during the very first stages of occupation, it seems clear that the *limes* sector

¹⁰⁹¹ See Petrikovits 1975 p. 92.

¹⁰⁹² Gudea 1997c pp. 48-49.

between Buciumi and Porolissum itself knew a certain unity. With 4+1 *castra* in a row (Buciumi, Romanasi, Romita and two forts at Porolissum), military infrastructures in the sector were particularly dense if compared to other frontiers of the province. This uncommon concentration could be considered as a “cluster” of inter-related military bases.

11.3 - Porolissum cluster.

Two *castra* lies between Buciumi and Porolissum, both poorly known and barely excavated. Structures at Românasi were indagated with the use of few testing trenches by Tamba in 1996-1997 and a plan for sketched according to the result¹⁰⁹³. The fort itself was not particularly large (130x158,5 m) and was intended to garrison a singular *quingenaria* unit. The knowledge of the internal building remained however limited to the few information provided by the long and narrow testing trenches. More recently, the area has been researched with non-destructive techniques and a new, more detailed description for the use of internal space has been proposed but the results have been questioned.

The fort seems to have had the usual two phases of construction: the older one marked by the adoption or perishable materials (with perimetral defences constituted by earth valla with timber palisades on top) and the subsequent reconstruction with stones and bricks¹⁰⁹⁴. Stamped bricks attest the presence of multiple units in the area: *cohors I Hispanorum*, *cohors VI Thracum*, and *cohors II Britannorum*. Brickstamps of these units have been however found in the near camps too, complicating the analysis. It seems sure that the *coh. I Hispanorum* occupied the fort since the *coh. II Britannorum* (or *Brittonum*) was garrisoned in Romita, at least from a certain moment of its history together with the *VI Thracum*¹⁰⁹⁵. The presence of other units' stamps could be explained by presuming that building materials were sent from nearby bases.

The three forts at Românasi, Romita and Porolissum were indeed so close that the different troops must have had indeed a strong mutual relation and probably shared manpower, resources and other sensible assets. Less than 10 km away from Românasi lied the fort at Romita, at its own turn particularly close (less than 4 km) to the large base of Porolissum¹⁰⁹⁶.

¹⁰⁹³ Tamba 1997.

¹⁰⁹⁴ Tamba 1997 p. 18. See also Macrea-Rusu-Mitrofan 1962 pp. 499–500.

¹⁰⁹⁵ Marcu 2009 pp. 110-111. Regarding the *cohors I Hispanorum* and the related debate see also Gudea 1997.

¹⁰⁹⁶ Marcu 2009 p. 102.

Both Romanasi and Romita guarded the Agrij valley that runs parallel to the Meses Mountains, leading to the passage controlled by Porolissum while the river Agrij follows his course until reaching the Somesul Mare.

Romita fort has impressive dimension of 187x225 m¹⁰⁹⁷ and its ruins were known since the 19th century, when Torma described it¹⁰⁹⁸. Archaeological investigations are limited, and nothing has been done in the most recent years, however the area has benefitted of non-destructive analysis and prospections that have deepened our knowledge of the area.

The usual two constructive phases are known from the fort but the *castra* seem to have remained roughly the same in dimensions during the transition from one phase to another, at least according to Matei's and Bajusz's¹⁰⁹⁹ work on the site.

For the purpose of the present thesis, it is noteworthy to signal the presence of a large building that presents a plan compatible with a military workshop. The structure is located in the *pretentura sinistra*, near the *porta principalis sinistra*, at 40 m from *via pretoria*, at 30 from *via sagularis* and aligned to the *via principalis*. The building was relatively large: 40 x 37 m, with E-W sides longer than N-S ones, with a huge central courtyard that constitute the 40% of the whole building¹¹⁰⁰.

Because of the structure plan is known only through electro-magnetic prospections, the details are still vague and non-precise. It seems that the remaining space was divided in larger compartments, but it is likely that smaller rooms existed as more internal divisions.

In absence of systematic archaeological excavations, nothing can be concluded regarding this building. No markers of metallurgic activities are known, at least as far as I know, at the present state of research, nor it has been signalled the presence of objects and tools related to productive activities.

It has been proposed that the structure could have served as *mansio*, as military hospital, or as military workshop¹¹⁰¹. Judging only on the base of the plan could be however misleading. Because of the *castra* were so close to Porolissum, that was already a prosperous civil settlement at the time this structure was built (3rd century AD), it seems puzzling that officers in transit were sent to this camp instead of being lodge in the more comfortable municipium. A similar conclusion can be drawn in regard of the *valetudinarium*

¹⁰⁹⁷ Matei-Bajusz 1997 p.18.

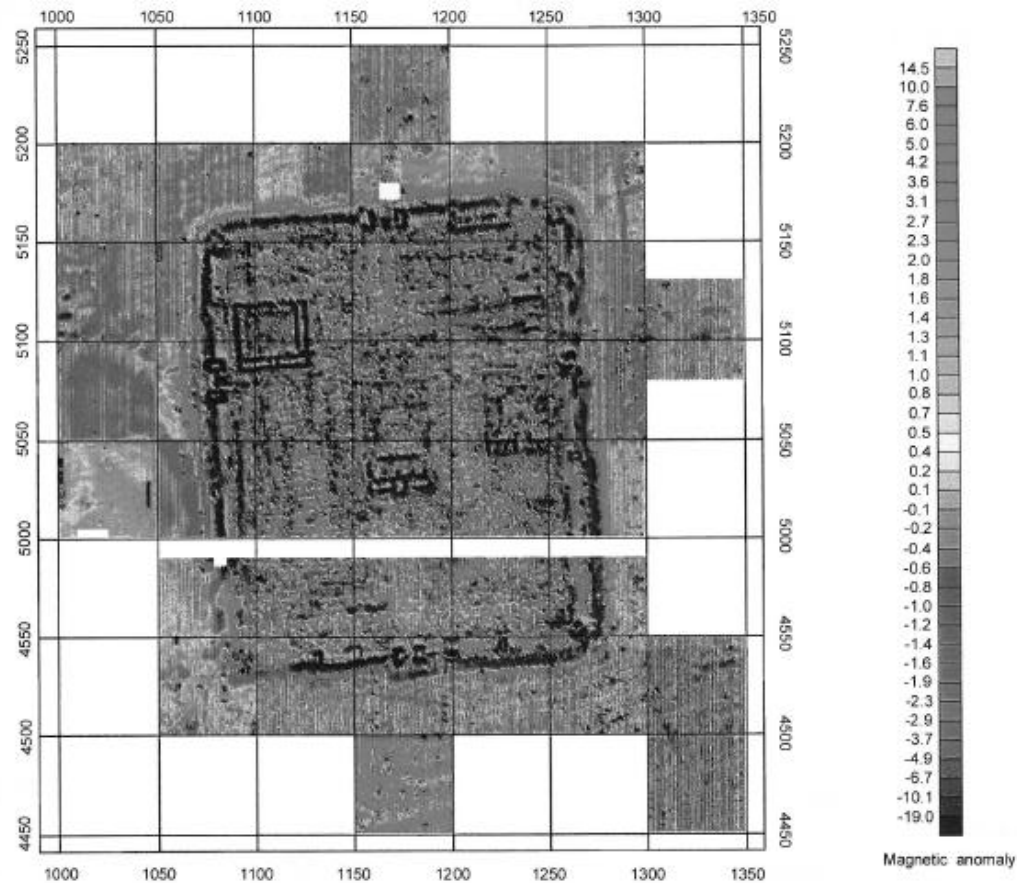
¹⁰⁹⁸ Torma 1863 p. 14 and Torma 1880 p. 101.

¹⁰⁹⁹ Matei-Bajusz 1997.

¹¹⁰⁰ Franzen-Matei-Marcu 2007 p. 171.

¹¹⁰¹ See also the identical description in Marcu 2009 p. 110.

also. It seems more logic to open a military hospital where the larger and most important garrison is instead of placing such facilities some kilometres away.

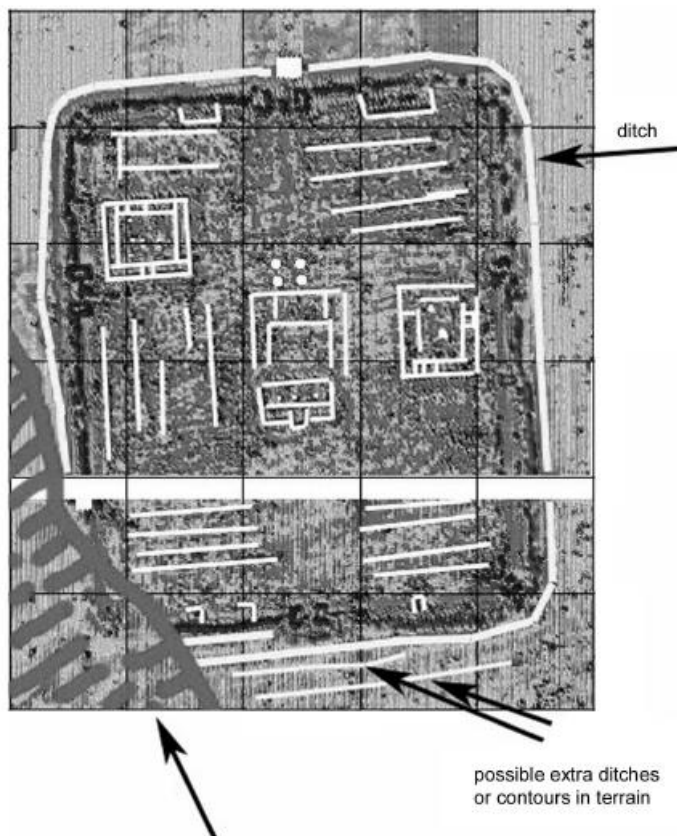


The building appears indeed extremely large for having work as military hospital for the *castra* of Romita alone.

It is true that watchtowers specifically under the control of Romita were limited in number¹¹⁰² and no ancillary structures are known from the area, the garrison should have had plenty of soldiers to be employed in productive activity. It remains however unclear why the imperial army felt the need of opening such a facility in Romita where artisans and skilled manpower were possibly available already in Porolissum: the larger and richer urban centre should have attracted more easily such competences.

¹¹⁰²Gudea 1997c p. 89 has attributed 7 towers to Românași and apparently no one to Romita, it remains unclear how the attributions have been decided.

The hypothesis that the large structure in *pretentura sinistra* served indeed as a *fabrica* seems more possible than presuming that the building was rather a *valetudinarium* or a *mansio*. It could have been also a large warehouse or a depot. Porolissum cluster served a strong contingent of troops already, and more soldiers could reach the area in case of need. Having a strong fortified depot where to keep supplies, spare weapons and projectiles were surely a useful possibility. Once again, the absence of clear elements of comparison and markers can-not ultimately prove the hypothesis.



Romita *castra* had for sure dedicated *horrea*, but we do not have many information about those structures, and it is therefore impossible to calculate the surface occupied by those logistic facilities. With a more complete picture, it should be possible to understand if Romita fort functioned as a logistic hub or not. Obviously, the condition *sine qua non* is having two units garrisoned in the same *castra*.

Judging by the brick stamps found in the area and by their stratigraphic distribution, it seems that the fort was built at the beginning of the 2nd century AD by the *coh. VI Thracum* and the *coh. I Ituraeorum*¹¹⁰³. It is unclear if the building had been already built at the time or if it has been added in a second moment.

The cohort of Ituraean warriors left Dacia relatively soon and it appears in the east at the time of Hadrian already, when the cohort was part of the army gathered by Arrian to face the Sarmatian invasion¹¹⁰⁴. Apparently, it never returned to the Transylvanian plateau.

¹¹⁰³ Matei-Bajusz 1997 p. 95.

¹¹⁰⁴ According to Holder 2003 pp. 102 and 117. Contra, Dabrowa 1986 pp. 223-229 makes no mention of the involvement of the *I Ituraeorum* in the east. See also Tentea 2004 pp. 804-815.

Apparently, *coh. VI Thracum* and *coh. II Britannorum*, possibly *milliaria* and previously garrisoned in Cașei/Gilau¹¹⁰⁵, shared the *castra*¹¹⁰⁶ for some decades until the *VI Thracum* was replaced by the *I Batavorum milliaria*, was previous base in Potaissa had been reconverted to host the *V Macedonica* legion arrived in Dacia at the time of the Marcomannic wars¹¹⁰⁷.

As noted by Marcu, the fort is not large enough to garrison *two cohortes milliariae* at full strength. The picture is unclear, and the hypothesis reached should be considered as highly speculative, but it would help to explain the presence of two different *praetoria* of same dimensions in Romita¹¹⁰⁸.

If Romanasi and Romita offer more open questions than answers for the present topic, the situation is no better with the site of **Porolissum** despite the fact that the impressive complex at the Meses Gate represents one of the most stunning and extensively researched sites in Romania.

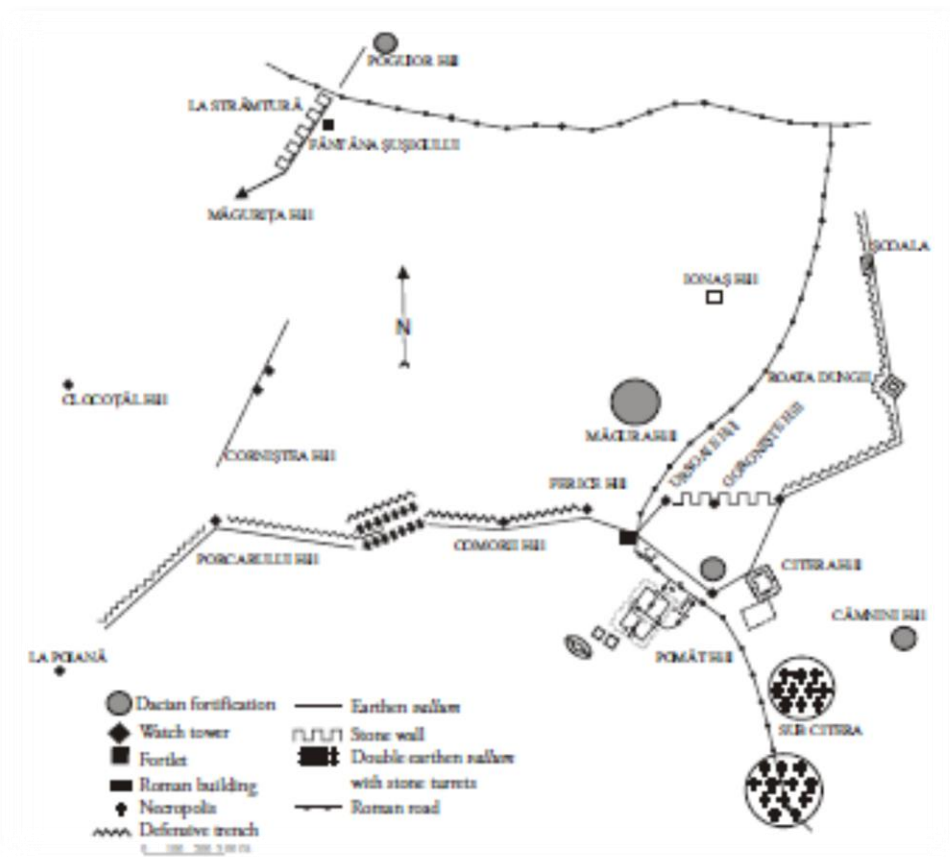


Figure 9 Roman military complex in Porolissum - From Gazdac-Gudea 2006 p. 40.

¹¹⁰⁵ Isac 1987 pp. 179-180.

¹¹⁰⁶ Gudea 1984 pp. 222-223.

¹¹⁰⁷ Bărbulescu 1987 p. 36.

¹¹⁰⁸ Marcu 2009 p. 114.

Known since the modern era, the ruins of Porolissum did not fail to attract the attention of antiquarians and later of modern researchers. The site is enlisted by Torma among the Roman fortifications along the western Dacian *limes*, but archaeologically researches started only in the 20th century¹¹⁰⁹.

The area was inhabited since prehistoric times¹¹¹⁰, but the strategic value of the Meses Gate more clearly emerges only in Dacian times, when native populations fortified the route. Smaller strongholds were built on the hills of Citera (later seat of a temporary imperial fortification¹¹¹¹), Mersid- Poguior (blocking the pass), Cammini-Jac and Druia-Stana, while the largest fortifications were on the Pomet, where the Roman *castra* were later built, and on Magura hills¹¹¹².

Evidently, the Dacian kingdom (or perhaps a more localised power) had recognised the importance of the passage. The area was economically very active in antiquity, surely because of the important road through the Meses mountains, and this favourable position had stimulated the economic development of local settlements.

Huge quantities of Hellenistic and Roman coins have been found in the area together with amphorae from the Mediterranean basin¹¹¹³, proving that the area maintained strong commercial ties with the Graeco-Roman world and it has been suggested that salt exploitation represented the primary engine for this economic development¹¹¹⁴.

It is also interesting to note that a mint was likely active in the area during the Dacian times and this workshop counterfeited Roman coins for local use¹¹¹⁵. The activity of counterfeiting coins continued under imperial administration, when Roman coins were locally counterfeited to be exported in the *barbaricum*¹¹¹⁶.

¹¹⁰⁹ As far as I know, Daicoviciu's reports of 1938-1939 were not published if not under the form of the entry in the Pauly-Wissowa (Daicoviciu RE XXII s. v. Porolissum, col. 265-270), see Ghergariu 1980 pp. 77-79. The old excavations under the supervision of Radnòti (1943) were published only by Tòth 1978. Macrea published the results of his work on the site (1958-1959) few years later (Macrea-Protase-Rusu 1961 and 1962). Complete list of scientific excavations in the area can be found also in the site of the Institutul de Memorie Culturală of Romania (<http://ran.cimec.ro/?codran=142159.01>).

¹¹¹⁰ Găzdac-Gudea 2006 pp. 12-13 for a brief account. See also the quoted works of Borofka 1994 (p. 58 about Bronze Age); Vasiliev 1980 p. 59 (Iron Age); Crişan 1993 (pp. 111-116 about the Dacian period).

¹¹¹¹ Găzdac-Gudea 2006 p. 13.

¹¹¹² Găzdac-Gudea 2006 p. 13.

¹¹¹³ See Chirilă 1981 pp. 189-190 and Chirilă 1991 pp. 153-174.

¹¹¹⁴ Glodariu 1976 pp. 138 and ff.; pp. 196 and ff.

¹¹¹⁵ Pop- Găzdac 1999 pp. 169-187.

¹¹¹⁶ Opreanu- Găzdac 2016 pp. 25-36.

The imperial presence in the area can be dated in the aftermath of the Dacian Wars, when the Roman army pushed north and occupied the Transylvanian plateau. A military diploma issued 11th of August 106 AD¹¹¹⁷ attests that Roman soldiers were already stationed in the area, occupying this vital strategic position. The location of the military base was carefully chosen. The large fort was built on the top of a plateau on the Pomēt peak, with the higher point (the Bisurica peak) at 502 meters. The position was indeed very favourable. The plateau was relatively well protected by stepped slopes from south-east to north-east. From this height, the imperial garrison maintained strong visual contacts with the watchtowers line that borderer the surrounding hills and peaks and overlooked the strategically vital “Meseş Gate”, the mountain pass known as “La Stramtura (or La Stramtoare)” between the two peaks of Magurita and Poguior, the most important access to the province from the North West¹¹¹⁸.

Porolissum itself, today near the modern village of Moigrad, was at the confluence of three important waterways that shaped and defined local topography: the Ortelec Creek, whose narrow pass represents the important Meseş Gate; the Agrij river valley, guarded by the *castra* at Romanasi and Romita; and the Pomēt Creek, that runs near the military base itself. Further north, the small valley of the Frumeşului river represent a small and minor access to the province, guarded as well by the linear defences and the towers of the more advanced line¹¹¹⁹. The complex of military structures and infrastructures in and around Porolissum is vast. A series of watchtowers, *burgi* and linear defences assured a capillary control over the area¹¹²⁰. The application of modern LiDAR techniques and aerial survey has allowed nowadays to have a complete and well-detailed image of ensemble of the area, with a clear pattern of Roman infrastructures and occupational approach¹¹²¹.

Two lines of defence can be further detected on the field. The first one passed closer to the *castra* on the Pomēt hill and the linked settlement. A series of earthen *valla* started from the point known as La Poiana, reached Porcarului hill and continued towards Comorii hill and, from there, the fortified custom in Pomēt hill. This internal line continued with a stone wall towards Citera hill, on the north west slope, and from there the line turned north to reach the *burgi* at Roata. A older earthen *vallum* from the fortified custom at Ferice peak towards Citera was later

¹¹¹⁷ IDR I, dipl. I.

¹¹¹⁸ See Gudea 1986 *et alii* in general; Gudea 1996 in general; Găzdac – Gudea 2006 p. 11 for a resume.

¹¹¹⁹ Matei 1996 pp. 63-76.

¹¹²⁰ See in general Gudea 1985 pp. 143-218 and Cociş 2016 pp. 41-76. See also Pop- Cociş 2018 pp. 63-85 presenting a repertory of stray findings from the line of watchtowers in the area.

¹¹²¹ Roman et alii 2016 pp. 237-262.

abandoned and many private and public buildings are known to overlap the *vallum*¹¹²². A series of stone elements along the line between the hills of Porcurului and Comorii interpreted in the past as small towers, but those traces have been more recently interpreted as the pillars of an aqueduct¹¹²³.

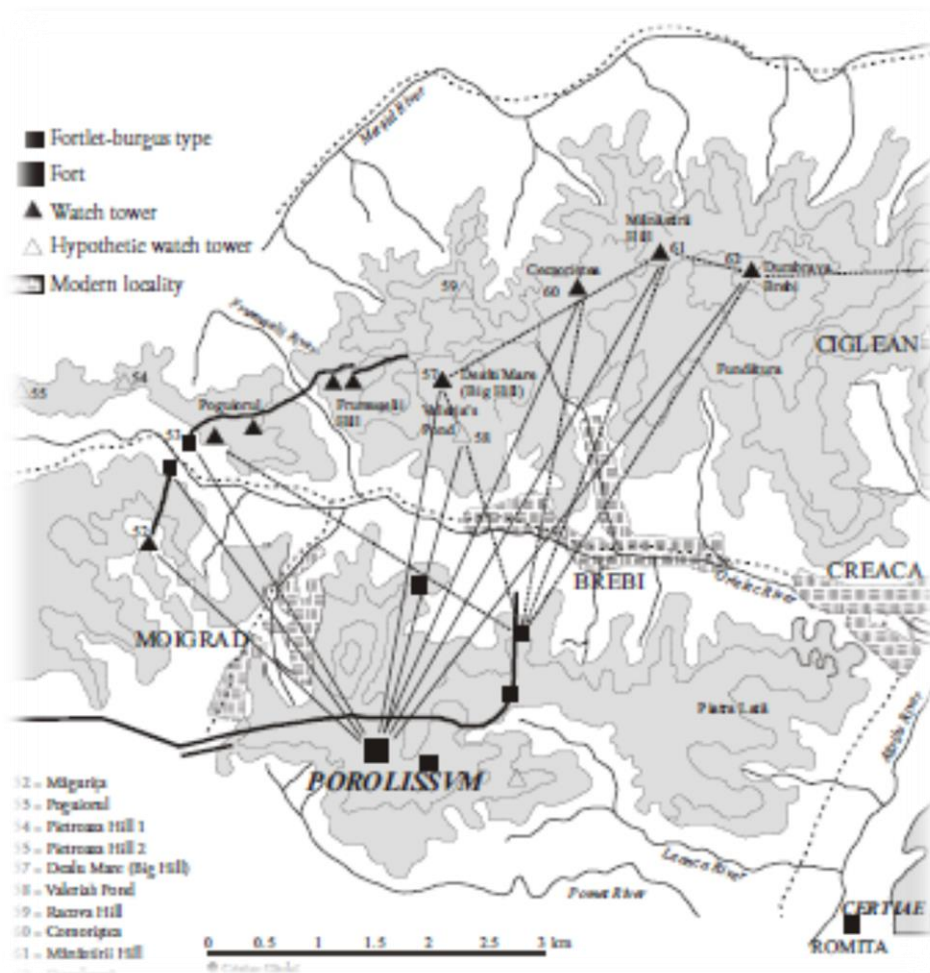


Figure 10 Watchtowers and burgi in the area of Porolissum. After Gudea 1997.

The tower on the “Poiana hill”, pertaining to this very line of defences, has been recently excavated and published¹¹²⁴.

The second line of infrastructures blocked and controlled the Ortelec valley. A stone wall across Corvistea hill intended to block the Ortelec valley was abandoned already in the 2nd century AD, when a new complex was built. The stone *vallum* started on the Magurita hill, reached La Stramtura and continued across Poguior hill, where a Dacian fortress overlooked the Meses Gate, and continued towards the modern village of Mergid, blocking also the small access of the Frumesului valley. At least ten watchtowers were built in the

¹¹²² Gudea 1989a pp. 100-109

¹¹²³ Matei 2005 pp. 293 -311.

¹¹²⁴ Cociș 2019 pp. 45-59.

area, completing the network of *valla* and assuring visual contacts with other installations among the frontiers¹¹²⁵.

At least 2 *burgi* blocked the Meses Gate on the second line (at Fantana Susigului and Poguior hill) and two more were built along the older line of *valla* at Roata Dungii and at Scoala¹¹²⁶, the last one possibly functioning as a custom¹¹²⁷.

Soldiers of Porolissum garrison were fairly spread over the area and were assigned to many different posts. Once again, it is almost impossible to calculate how many men were daily sent to the *valla*, to the towers and to the *burgi* that marked the imperial presence in the region. If the previously proposed figure is maintained (a *contubernium*-team composed by 8 men per tower, 10 *contubernia* per *burgus*), almost an entire cohort were daily sent on duty far from the *castra*, and the figure does not account for patrols and more specific missions. It is even harder to estimate the impact of such a dispersion over the workforce potentially available to local imperial commanders. As it has been previously argued, the activity of *fabricae* and other military workshops was probably not constant during time but fluctuated according to extemporary need and circumstances. In case of need, Roman officers could simply re-locate some squads or soldiers, and the civil settlement born close to the military quarters could provide the necessary workforce in case of need.

The total dimension of Porolissum garrison is indeed hard to estimate. Tracking the presence of military units in *castra* mainly using stamped bricks and tiles is tempting but it rises also numerous questions and problems. The task becomes particularly hard when the same stamps are found in simultaneous level in a multitude of fort.

Relying mainly on tile stamps and brick stamps, Gudea has proposed unlikely high numbers for the Porolissum garrison. Identifying three phases, Gudea has proposed what follows:

- **Phase I, 106-120 AD.** A huge number of units were involved in the construction of Pommet *castra*, leaving their markers in the building materials adopted at the time. Gudea enlists the *cohortes I Ulpia Brittonum, V Lingonum* and *VI Thracum* that were all three *milliariae*. Only the *cohors I Hispanorum pia fidelis* could have been *quingeniaria* according to Gudea, but there was also present in the area a detachment of the *XIII Gemina* legion whose strength has been calculated in 5 hundred – 1 thousand

¹¹²⁵ Gudea 1989a p. 106. See also Matei 1997 pp. 93-100.

¹¹²⁶ Gudea 1989a pp. 95-99.

¹¹²⁷ Gudea 1996 about the fortified custom.

soldiers. In Total, during the very first phase of existence, Porolissum could count on a 5.000 strong men garrison.

- **Phase II, 120- 200 AD.** Due to the importance of the area, Porolissum *castra* were partially rebuilt during the Hadrianic-Antononine age. The garrison was not much weaker than before, with only the legionary vexillation withdrew from the site and the arrival of the *numerus palmyrenorum* and the *coh. I Augusta Ituraeorum* in substitution of the legionary detachment. The Pommet *castra* were however too small to host 5000 thousand soldiers, Gudea admits that it is unknown where the Ituraei cohorts, the Palmyrean *numerus* and the I Hispanorum *pia fidelis* were stationed. The total strength remained between 3300 and 5000 men, depending on which units were still *milliariae*.

- **Phase III, 200- 270 AD.** Porolissum garrison was greatly reinforced during the third and last phase of occupation. The occasion should have been once again Caracalla's arrival in the region that coincided with a vast program of reconstruction of military infrastructures. Pommet *castra* were rebuilt and slightly enlarged. The *cohortes I Ulpia Brittonum, V Lingonum, I Hispanorum pia fidelis* (now considered *milliaria*) and the *VI Thracum* were still in the big fort on top of Pommet hill, now rejoined by detachments of *III Gallica, XIII Gemina* and by a poorly known *cohors III D(acorum)*. The *numerus Palmyrenorum* were still in the area, possibly garrisoned at the small fort on top of Citera hill. Considering all the reinforcements, the garrison was around 5800-7500 men strong, depending on the consistency of the legionary detachments¹¹²⁸.

The main problem with Gudea's figure is in the lack of space and infrastructure to garrison such a strong force. Despite Porolissum *castra* were large and well organized, the military base did not have the dimension of fully operative legion quarters.

It is true indeed that Gudea's reconstruction is intended to be extremely schematic and did not account for the historical dynamic of the area: Gudea fixes three moments, corresponding roughly to the three major building phase of the fort, and does not account for the years between those three moments. As Marcu has however pointed out¹¹²⁹, the presence of building materials bearing the stamp of a military unit does not necessarily imply the presence of the unit itself in the area, but just that the building materials had reached a particular site in the province. Building materials was relatively easy and cheap

¹¹²⁸ Gudea 1989a p. 178.

¹¹²⁹ Marcu 2012 *passim*; Marcu 2011 pp. 123-135.

to produce, but it requires a certain time to be prepared. It was arguably more convenient to share already prepared building materials and to send an eventual surplus.

Legions appear to have been particularly active in these occasions. The legionary detachment signalled during the third phase of Porolissum could have sent building materials during the deep reconstruction underwent during Caracalla's reign.

Similarly, it is likely that the legions participated in building operation in particular during the early phases of the province, when the territory of Dacia still had to be organised and the military network put in place. This intense period of construction forced the whole provincial army into a stronger coordination: it is precisely during this period of frenetic activity that it is more likely to presume that different military units shared competences and resources. One of the problems that have for long undermined the research in this domain is the difficulty in referring a tile stamp or a brick stamp to a specific layer.

The finding position of stamped bricks and tiles is often vaguely marked in reference to trench position and depth or even ignored in older excavation. The impossibility to provide a strong chronological connection between stamped building materials and construction phases has indeed generated a vivid debate.

Tóth, proceeding from the archaeological reports of Radnoti, had simply proposed that the permanent garrison of Porolissum was constituted by the *cohortes I Brittonum and V Lingonum*, garrisoned at Pomet, and the *numerus Pamyrenorum* inside the fort on top of Citera hill¹¹³⁰. To this contingent, Marcu has added also the *cohortes I Ituraeorum* and the *VI Thracum*, both *quingenariae* and garrisoned in the *castra* of Pomet hill¹¹³¹. Legionary detachments stationed also in the area for a while. The presence of other units in the area relies on not very solid bases.

A series of brick stamps bearing a curious turned S (CHS+turned S; CH +turned S+S; CH + turned S+ S(after a slightly larger soace); CHSJ+turned S; CSIJ+turned S) known from the Pomet hill and from Romita¹¹³² has posed many problems of interpretation to modern scholars. The brick stamps have been interpreted as pertaining to the *cohors I Hispanorum* at the beginning¹¹³³, but seems the hypothesis would have implied a series of anomalies and irregularities in how the unit name and title had been written. Szilagy¹¹³⁴ had proposed to

¹¹³⁰ Tóth 1978 p. 12.

¹¹³¹ Marcu 2009 p. 99.

¹¹³² Tentea 2004.

¹¹³³ Daicoviciu 1943/1944 p.320.

¹¹³⁴ Szilagy 1946 nr. 228-231, who therefore proposed the following readings: *c(o)h(ortis) I P(almyrenorum) s(agittariorum)*; *c(o)h(ortis) s(agittariorum)*; *c(o)h(ortis) S(urorum) s(agittariorum)*.

consider the “J” not as a “P”, as it was done before, but rather as a modified version of an “I” to avoid any confusion between the numeral and ethnonym of the unit. While Gudea has attributed the stamps to the *cohors I Hispanorum Pia Fidelis*¹¹³⁵, more recently Piso and his collaborators have proposed instead an attribution to the *cohors I Ituraeorum sagittariorum milliaria*¹¹³⁶, a reading already proposed, but ultimately rejected, by Tóth¹¹³⁷.

Opreanu has more recently challenged Piso’s reading and proposed instead an attribution to the *cohors I Sagittariorum milliaria*, untying any relation between the unit and the Ituraei. The unit briefly stationed in the area between the reign of Hadrian and Antoninus Pius, possibly participating in the realisation of the second phase of Pomet *castra*, to be later moved elsewhere, possibly at Tibiscum, under the reign of Marcus Aurelius¹¹³⁸.

Another unit had left mysterious traces of its presence in the area. A huge number of brick-stamps bearing the COHIII mark has been found by Gudea in the area of the Pomet castrum, with a notable concentration in the principia¹¹³⁹. The absence of any other specification has since there puzzled the scholars who have worked on the site.

Initially considered the proof of a *cohors III Dacorum* presence in the area¹¹⁴⁰, an hypothesis later discarded, the mark has been read by Piso as *cohors III Campestris*, who has therefore proposed a change in the composition of the local garrison occurred in the 3rd century AD, when the *cohors III Campestris* replaced the Britannic soldiers¹¹⁴¹.

More recently, Opreanu has challenged this hypothesis arguing instead that the mark points rather to the *III cohort* of the *VII Gemina* legion, whose soldiers reached the area during the reign of Hadrian/Antoninus Pius, when legionary *vexillationes* participated to a rebuilding and consolidation of local military structures¹¹⁴².

The problem is indeed puzzling and hard to solve. The purpose of this brief *status quaestionis* is only to highlight the present limits of the research and the still open questions, and not to propose a definite conclusion to the various problems. It seems certain that the *cohors I Brittonum*, the *VI Thracum* and the *V Lingonum* stationed in Porolissum for long and probably represented the real garrison of the base, and that *legio IIII Flavia Felix* and *legio*

¹¹³⁵ Gudea 1989 pp. 165-166.

¹¹³⁶ Piso-Deac 2016 pp. 240-248; Piso-Marcu 2016 pp. 165-168.

¹¹³⁷ Tóth 1978 pp. 50-52.

¹¹³⁸ Opreanu 2019 pp. 63-70.

¹¹³⁹ Gudea 1989 pp. 525-534; Gudea 1996 pp. 230-231; Matei 2003 p. 205.

¹¹⁴⁰ Gudea 1989a p. 186 on the base of *coh. III Dacorum* attested in Syria (CIL 3,600). A thesis recently proposed again by Gudea 2011 pp. 327-330.

¹¹⁴¹ Piso 2001 pp. 221-237; 2004/2005 pp. 183-188; 2005 pp. 325-332

¹¹⁴² Opreanu 2013 pp. 177-189; Opreanu 2018 pp. 365-372.

XIII Gemina have participated to the first construction of the fort, and probably *vexillationes* from both legions stationed *in situ* for a while¹¹⁴³

It is more difficult to confirm the presence of other auxiliary units. While in his work on the internal building of Dacia military bases, Marcu seems to accept the correlation between brick stamps and unit presence in a fort¹¹⁴⁴, in a couple of later papers he reaches the opposite conclusion¹¹⁴⁵.

The legionary brick stamp has offered a prominent case study for the topic. As Marcu has demonstrated, the legion *XIII Gemina* from Apulum was active in a very specific “area of competence”: legion brick and tile stamps have been found in every fort on the Meses sector¹¹⁴⁶. It is possible that building parties and teams were from time to time sent in various locations, but chemical analysis done on stamps and tiles have confirmed the same origin for all the building materials. Evidently, it was easier to exploit a large and well-equipped brickyard and to supply the various units with building materials, despite the heavy weight of the good, instead of producing bricks and stamps directly on spot.

There was therefore no need to send large contingent away, the prospected figure of a 500-men strong *vexillatio* in Porolissum during the building phase appears unrealistic. It follows that auxiliary units should have behave in a similar way. Planimetric and architectural analysis in buildings of the same fort have confirmed that building techniques were substantially homogenous, with few constructions showing appreciable differences¹¹⁴⁷.

The conclusion does not apply however to different *castra*: evidently, each unit had a more or less specific technique, and it is evident that building parties from other locations brought with them recognizable building styles.

The hypothesis presents the great advantage of simplifying the picture of the Roman military network in a province: troops and soldiers were not excessively dispersed, and the system assured a profitable management of resources and manpower.

For the purpose of the present topic, the conclusions are particularly meaningful even if not directly connected with the production of weapons and armours. Not only the hypothesis implies that the provincial military network functioned as a real system at least for logistics purposes, but also that the inland transport of heavy goods over relatively long distances was a real possibility even when it did not concerned the supply of food or fodder or other

¹¹⁴³ Piso 2000 pp. 210-211.

¹¹⁴⁴ Marcu 2009 *passim*.

¹¹⁴⁵ Marcu 2009 *passim*. Cf. Marcu 2011 pp. 123-135; Marcu 2012 pp. 43-73.

¹¹⁴⁶ Marcu 2011 pp.124-126.

¹¹⁴⁷ Walthew 1981 pp. 15-35.

commodities. Such a system helped to spare workforce and allowed frontier units to focus on patrol duties and on the control over the border.

It will be therefore considered that the permanent garrison of Porolissum was constituted only by the *cohors I Brittonum*, the *cohors VI Thracum* and the *numerus Palmyrenorum*. The other units stationed in the area only temporarily or, more likely, sent building materials, construction teams and experts to help realising the impressive military base at Porolissum.

Among these units, only the *numerus Palmyrenorum*, possibly garrisoned in the small fort on top of Citera hill¹¹⁴⁸, had a specific need in matter of weapons and armours. The Palmyrean warriors fought as mounted archers and made a good use of the eastern composite bow. It is likely that specifically trained artisans were attached or followed eastern archers units to provide the warriors with one of the finest weapon of the ancient world.

Unfortunately, the small *castra* on the Citera hill remain particularly poorly known. The area benefitted of archaeological investigations only in 1958 and only through the opening of few tranches¹¹⁴⁹. In this occasion, Macrea had signalled the possible presence of a Dacian fortification *in situ*, an hypothesis more recently sustained by Matei also, who has interpreted the large turf-wall that almost surround the Roman fort as what remains of an older Dacian settlement¹¹⁵⁰.

Archaeological investigations were not continued in following years. The area is now densely forested and Roman structures and their remains are now barely visible on the terrain even if not completely hid by vegetation.

More recently, the site has been explored through the use of high-resolution airborne laser scanning sensing techniques (LIDAR), providing a general plan of the area¹¹⁵¹. The fort was of 101.10x66.65 m “with massive gates” protected by rectangular towers and with trapezoidal ones at the corner. No information is known of the iteral plan of the *castra*. The first phase of the fort dates to the beginning of the 2nd century AD and it was evidently built together with the large *castra* on the Pomet. The COH III brick stamps have been found also in the stone wall of the second phase of the fort, and it is therefore possible that the *castra* were rebuilt in stone between the age of Hadrian and Antoninus Pius¹¹⁵². Outside the fort, a

¹¹⁴⁸ Gudea 1989a pp. 83-95.

¹¹⁴⁹ Macrea –Protase-Rusu 1961 pp. 374-376. in particular.

¹¹⁵⁰ Matei 2007b pp. 161-165.

¹¹⁵¹ Opreanu et alii 2014 pp. 73-86.

¹¹⁵² Gudea 1989 p. 93.

large earthen precinct of 270x180 m has been identified, but the purpose and the date of this structure are unclear. Unfortunately, a modern pit cuts the wall of the precinct exactly in the point wherein this touch the perimeter walls of the fort: it is therefore impossible to establish the chronological relation between the two structures¹¹⁵³.

Gudea has argued that this precinct was subsequently added, but it could also have been a temporary fort of Trajanic age, or a non-permanent military camp built during the Marcomannic wars. The irregular shape ad plan has some comparisons with similar structures known in Dacia, such as the *castra* known as “Comarnicelu III¹¹⁵⁴”. It is unclear witch unit was garrisoned in the fort, according to Gudea the *castra* could have garrisoned the numerus Palmyrenorum and the hypothesis seems indeed consistent¹¹⁵⁵. No data are known regarding the internal building of the fort.

The larger camp in Porolissum was built on top of the Pomet hill, an odd ad irregular choice. The area is characterised by a slope on the eastern side, towards north-east and south-east, that shaped the *castra* in a peculiar way: the internal buildings were disposed on different level and from the *porta decumana* was therefore with no visual links with the *porta praetoria*, being the two gates on different levels¹¹⁵⁶.

Despite the multiple test trenches opened across the curtain, the precise phases of construction remain unclear. The fort was more likely built at the beginning of the 2nd century AD, right after the end of the Second Dacian War, with the help of the *XIII Gemina* and the *III Flavia Felix*¹¹⁵⁷. The original *castra* had an earthen *vallum* and the internal buildings realised with perishable materials. It is however possible that an earlier, and smaller, fort of Trajan age occupied the top of Pomet hill for a short period, before being enlarged until reaching its final dimension¹¹⁵⁸

The very first stage of the fort was probably short lived. It is known that an intense reconstruction was undertaken during the reign of Hadrian, when legionary detachments from the *VII Gemina* and the *III Gallica* reached Porolissum and participated in the building activities¹¹⁵⁹.

¹¹⁵³ Opreanu et alii 2014 pp. 81-82.

¹¹⁵⁴ Opreanu et alii 2014 p. 82 quoting Stefan 2005 pp. 304-315 for Cormarnicelu III fort.

¹¹⁵⁵ Gudea 1989 pp. 91-93; Petolescu 2002, pp. 141-143.

¹¹⁵⁶ Marcu 2009 pp. 88-89.

¹¹⁵⁷ Gudea 1997 p. 28.

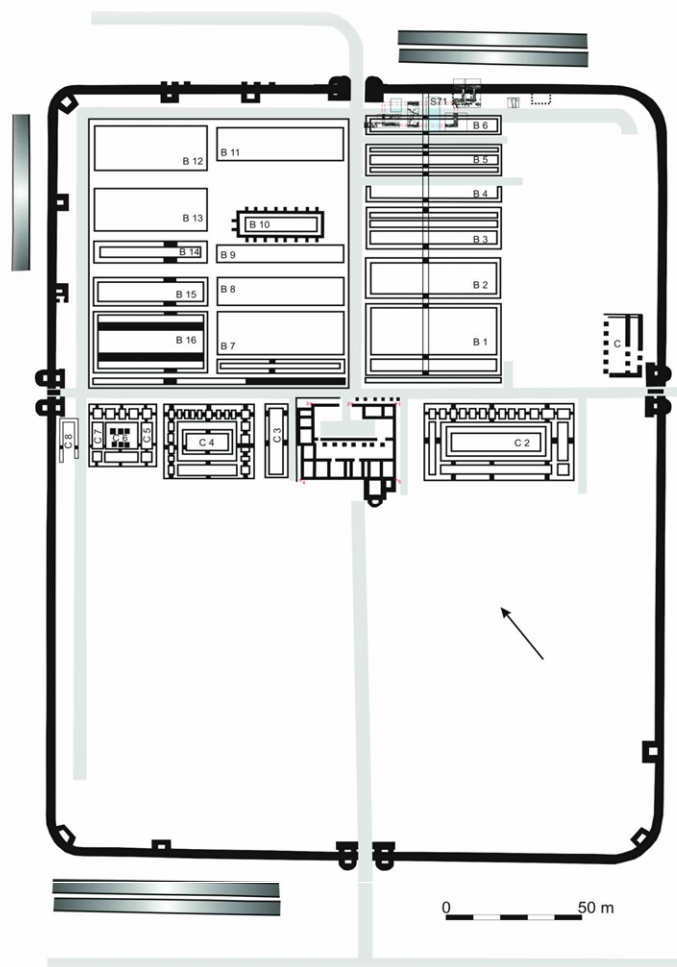
¹¹⁵⁸ Matei 1997.

¹¹⁵⁹ Gudea 1989 pp. 159-161; Opreanu 2013 p. 181.

Studying the occupation layers of curtain towers, Tóth argued that the perimetral defences were re-built in stone a first time under Hadrian, highlighting the stone foundations of rectangular gate towers. He consequently presumed that the *castra* had stone walls already around the mid of the 2nd century AD¹¹⁶⁰. The older excavations and report of Radnoti and Macrea confirm this hypothesis. *Contra*, however, Gudea has argued instead that perimetral walls of Pomet *castra* were rebuilt in stone only at the beginning of the 3rd century AD, in occasion of Caracalla's visit in the region¹¹⁶¹.

Despite Porolissum is one of the most deeply explored site in Dacia, the extensive use of test trenches has heavily impacted on quality and quantity of available information, somehow compromising the results obtained.

Older archaeological excavations were limited both in their purpose and in their means. The first researchers who have worked on the site have focused mainly on the curtain and on the gates with the declared intent to highlight the chronology of Roman occupation and constructive phases¹¹⁶².



constructive phases¹¹⁶².

The plan is from the Raport 30 of the Cronica Cercetarilor Arheologice din România, (2012) but it is based on the plan from Gudea 1989.

Walls and architectural elements uncovered are highlighted in black. While the curtain and the *principia* appear therefore completely excavated, the plan of other buildings have been reconstructed on the base of the long and narrow trenches, as it became evident in the present image.

¹¹⁶⁰ Tóth 1978 pp. 8-12.

¹¹⁶¹ Gudea 1989 p. 81.

¹¹⁶² See Gudea 1989a pp. 57 and ff. for the reports of earlier excavations.

The use of test trenches suited the scientific goal of the archaeological exploration and allowed the researchers to achieve fast results.

Unfortunately, the large adoption of very long and narrow test trenches was maintained also in more recent excavations. The technique adopted greatly affected the resulting plan of castra internal spaces. This is particular evident for the barrack area and *latus praetorii* in Gudea's published report. See in particular the plan published on the *Cronica Cercetarilor Arheologice din România* (figure no.).

The case of building C3 represents a good case study. Located between the *principia* and the building numbered C4, the construction was intercepted only by two test trenches of 95,50 x 1,50 m (S84) and 97 x 1,50 m (S85). It was therefore argued that the construction had a dimension of 7,5 x 30 m, but the total length was simply assumed to have been the same of the *principia*. The structure appears to have been a hypogean chamber, but the purpose remained unclear for long. It has been proposed that C3 functioned as a *schola* or as the fort *aerarium*¹¹⁶³, or even as a *mithraeum* due to the finding of some reliefs portraying the deified "Thracian knight" or scene linked to the Mithraic cult¹¹⁶⁴.

It is interesting to note that it was also diffused a misleading information regarding the presence of a mosaic in the building, but the information ultimately proved to be wrong¹¹⁶⁵.

Only in recent times it has been possible to fully and systematically excavate the structure, finally establishing that C3 building functioned as a water tank¹¹⁶⁶. The hypothesis had been subsequently rejected on the base that the building B10 in the *praetentura* was supposed to have been the same functionality¹¹⁶⁷.

The point is noteworthy for the present analysis, since a water tank is a necessary facility to sustain the activity of a large military workshop especially in case of metallurgic activities.

Gudea has identified two large buildings in *latus sinistrum*, numbered C4 and the complex C5-7. In published plan, both buildings appear to have a very similar layout, with numerous small rooms disposed around a central courtyard¹¹⁶⁸.

¹¹⁶³ Marcu 2007 pp. 259-269.

¹¹⁶⁴ Gudea *et alii* 1986, 122.

¹¹⁶⁵ Pintilie 1999/2000 p. 238, contra Gudea 2002a p. 619.

¹¹⁶⁶ Alicu 2002, 233. More recently Döhner *et alii* 2010 pp. 115-126; Döhner *et alii* 2011 pp. 95-104.

¹¹⁶⁷ Gudea 1988a pp. 150-151; Gudea 1997c p. 25.

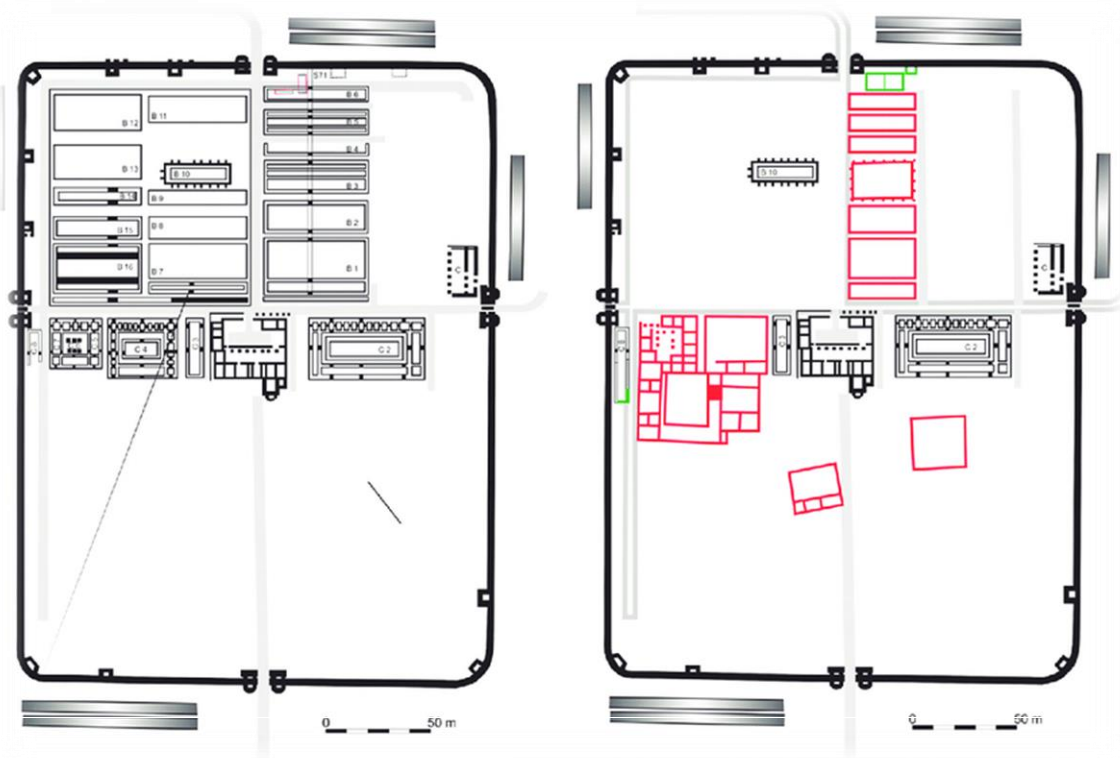
¹¹⁶⁸ Gudea 1989a pp. 67-68.

The plan is compatible with a large array of building: *fabricae*, *valetudinariae*, and *praetoria* were generally arranged in the very same way. On the right side of the *principia*, the huge C2 building has been described by Gudea with identical plan and gigantic dimension¹¹⁶⁹.

One of the building should have been surely a *praetorium*, while the others have been accordingly interpreted as functional construction but with no clear destination. No clear markers of metallurgic activity have been found in test trenches opened in the area.

It is also possible that, because two or more units were garrisoned in the same *castra*, there was more than one *praetorium* to house the multiple unit commanders. The presence of a water tank so close to C4 seems to point to a functional interpretation at least for the *latus sinistrum*. A good amount of medical instruments have also been found in the C4 area¹¹⁷⁰.

The test trenches have however covered a very limited portion of the structures and reconstructing the plan on the base of symmetry has distorted the image of the central area of the fort. More recent investigations have demonstrated that the area followed a completely different arrangement. The structure C4 and the complex C5-7 were actually a large complex with thermal facilities, possibly annexed to a *praetorium* residential complex. The C3 water tank was probably intended to supply the *thermae*¹¹⁷¹. With a large *praetorium* on the *latus sinistrum*, it is unlikely that the plan for the C2 building, reconstructed as before in a symmetrical way



¹¹⁶⁹ Gudea 1989a pp. 23-25.

¹¹⁷⁰ Bajusz –Gudea 1992 pp. 249-291.

¹¹⁷¹ Opreanu- Lăzărescu 2016b p. 265.

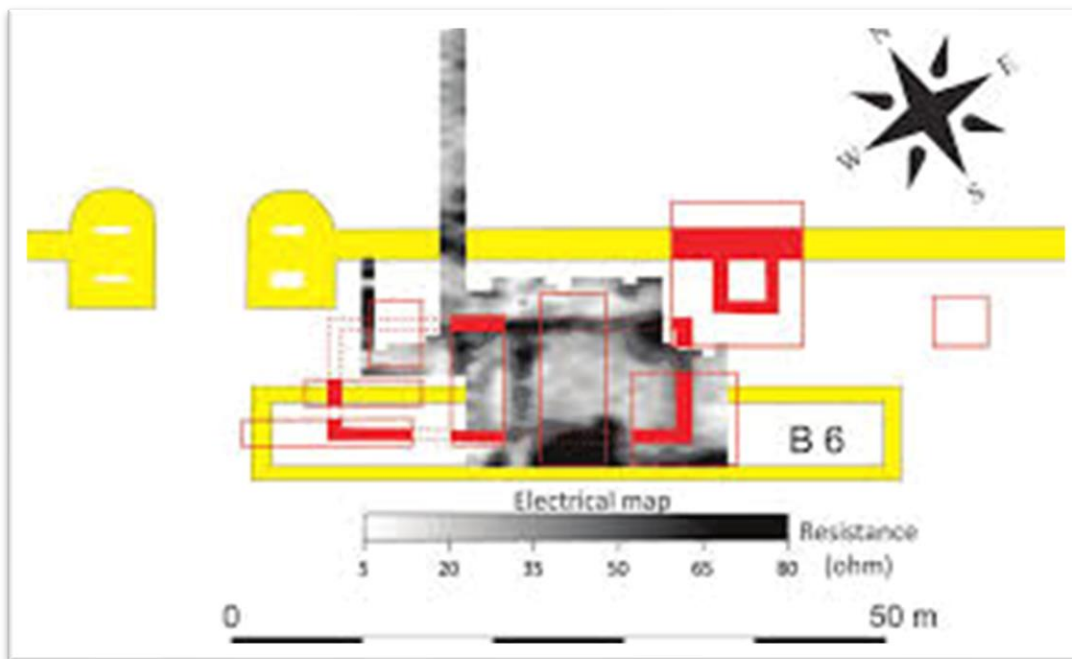
starting from the information gathered from the two test trenches, will remain the same in the future.

It can not be therefore considered as a military workshop. Nondestructive researches have also confirmed the existence of two other residential complexes in the *retentura*, but data are still missing for a consistent part of the camp¹¹⁷².

The plan of the *praetentura* has changed also according to the results of a new geophysical survey. Overall, the buildings in *praetentura dextra* appear to have been shorter than Gudea has hypothesized but a series of possibly barracks has been detected nevertheless.

The only exception is the *horrea*-like construction in place of the barracks B3-B4¹¹⁷³.

The building B6, originally interpreted as a *contubernium* overlapping the *via sagularis*, has been recently investigated, revealing a shorter structure than the one presumed and described by Gudea¹¹⁷⁴.



The purpose and chronology of this structure has puzzled the researchers for a while. Two similar buildings close to curtain walls are known from the *Pomet castra*¹¹⁷⁵. Gudea argued that these structures had been built during the 3rd century AD, but more recent excavations seem rather to point for an earlier date.

¹¹⁷² Opreanu- Lăzărescu 2016a pp. 77-78.

¹¹⁷³ Gudea 1983 pp. 124-125.

¹¹⁷⁴ Opreanu et alii 2013 pp.83-106.

¹¹⁷⁵ Gudea 1997b pp. 41-43; Landes Gyemant-Gudea 1984 pp. 166-171. A third one was described by Rădnoti in an older report.

According to Opreanu, the B6 building was realized around the 140 AD and fell out of use before the 3rd century AD, when the area was apparently left unoccupied¹¹⁷⁶.

Among other findings, a group of artillery projectiles have been signaled from the small building, that could have worked as a storage or as a *ballistaria* wherein artillery pieces and ammunitions were stored¹¹⁷⁷.

It has been debated for long if auxiliary units used these fine war machines or if legionaries were the only ones to have the necessary training and skills to operate field artillery. Since COH III brick stamps have been found inside the building, it is possible that the building functioned when the *vexillatio* of the *III Gallica* legion was in Porolissum and it could be further argued that the legionary detachments were intended to reinforce the area foreseeing the imminent conflict against the Germanic tribes¹¹⁷⁸.

Campbell has argued that auxiliary units used artillery as well, even if in more rare occasion¹¹⁷⁹. Especially presuming that the important Porolissum garrison had some artillery pieces as part of its standard equipment, a proper military workshop, wherein trained *architecti* and craftsmen could work on those pieces, was a sure need for the contingent.

Unfortunately, and despite it is often assumed that a workshop was active in Porolissum, traces of metallurgic activities in the area are surprisingly scarce.

According to Gudea, a heart-fire with associated metal slugs has been found in the B1 structure, but even if the researcher has interpreted the building as a potential workshop, the limited extension of the trenches forbids a proper identification¹¹⁸⁰.

Limited traces of combustion and associated metal slugs came also from a older test trench opened across the curtain. These traces pertain to the earliest layer of the earthen *vallum*, and it was possibly a small and short-lived installation that craft building materials during the construction of the fort itself¹¹⁸¹.

In her paper on military workshop, Benea mentions metallurgic facilities to melt metal inside the *castra* of Porolissum Pomet, but she did not offer a bibliographic reference for it. It is possible that Benea is reporting some un-published information obtained through a personal contact or perhaps she refers to a series of not completely confirmed hypothesis¹¹⁸².

¹¹⁷⁶ Opreanu et alii 2013 p. 86.

¹¹⁷⁷ Opreanu et alii 2013 p. 102.

¹¹⁷⁸ Opreanu 2013 pp. 181-182.

¹¹⁷⁹ Campbell 1986 pp. 117-132.

¹¹⁸⁰ Gudea 1989b p. 21.

¹¹⁸¹ Gudea 1989a p. 537.

¹¹⁸² Benea 2008b p. 386.

Bronze crafting is barely attested in Porolissum with few traces from the *vicus*. Half of a mould for casting bronze brooches has been found in the *vicus*, and more recent excavations have confirmed that the building LM3 possibly served as a *taberna* and a workshop, with few crucibles found in connection with the building¹¹⁸³.

The civil settlement of Porolissum was however particularly dynamic from an economic point of view. The proximity with the imperial borders opened vast commercial possibilities beyond the frontiers, and surely the large garrison attracted many artisans and entrepreneurs.

The commercial and artisan vocation that possibly defined the area since the Dacian times still marked the Roman Porolissum. Weapons, however, could have not be sold outside the imperial borders¹¹⁸⁴. Roman laws theoretically exercised a strong control over the production of military equipment: the production of weapons and armors should have been a profitable enterprise only if the imperial army was involved as main buyer.

Porolissum had surely the characteristics of a strong and well-guarded logistic hub. The area did not only represent a gate to enter the province, but it was at the same time a powerful base from which the imperial forces could strike into the *barbaricum*. Although many indicators sustain the idea that military workshops were active in the area, it should be also recognized that traces of large metallurgic activities, and in particular of iron working, are still lacking.

Porolissum could have been judged to exposed to be chosen as the seat of a large *fabrica*, and in fact the provincial procurator had seat in Napoca with all his staff. At the present state of research, it is probably more prudent to consider that, due to its exposed position, Porolissum was not a major center of metallurgic activity.

11.4 - The Almaş Sector.

Between the Porolisumm cluster and the next group of forts, two military assured the connection between the Meses Gate and the Somesul complex. Ths two forts, built at Tihau and at Sutoru, were located along the Almas river. Both are unfortunately poorly known, even if modern projects are slowly deepening the knowledge in the area.

For **Tihau**, the work of Haalebos has provided a full plan of the structure using techniques soil resistivity measurement¹¹⁸⁵. Besides the expected *principia* and the *praetorium* located along the *via principalis*, it has been highlighted that both the *praetentura* and the

¹¹⁸³ Tamba 2008 pp. 243-295.

¹¹⁸⁴ Rankov 1999 pp. 115-120.

¹¹⁸⁵ Haalebos 1999 pp. 197-210. The fort is overall poorly excavated. See Protase 1994 pp. 75-102 for an account comprising reports of older excavations.

retentura were occupied by barracks of similar sizes and plans. Because Tihau was garrisoned by the *cohort I Cannenafatium, quingenaria* and possibly *equitata*¹¹⁸⁶, the barracks in the *retentura* would have been over-abundant: the cohort needed only 6 barracks and possibly 2 stables to lodge all his men and animals at full strength¹¹⁸⁷. Whether another contingent was present in the camp or the structures in *retentura* were not barracks is unclear, they could have had a different purpose. In Buciumi, a small workshop was indeed realized inside a barrack-like structure, and thus it cannot be excluded that a *fabrica* was active in the fort, but no information can validate the hypothesis at the present state of research.

The second fort of the Almas sector is at **Sutor**. The position appears indeed “natural” and strategically chosen: even before the fort itself was discovered, Torma had supposed a military base in the area¹¹⁸⁸. The *castra*, of 165 x 200 m, were possibly garrisoned by a *numerus Mauretorum* but few other data are available. Recent excavations have confirmed a double phase for the fort and have identified the civil *vicus* and *thermae* nearby the camp¹¹⁸⁹.

Two points should however be highlighted for the purpose of the present research. As other similar units, the *numerus Mauretorum* was possibly a cavalry unit: a mobile tactical reserve was therefore deployed in a most internal position, wherein cavalymen could secure the provincial road network, maintain communications between the various sectors, and intercept potential threat as well.

Since the *numeri* were recruited among specific population of the empire to exploit their military prowess and notable tactical aspects, it should be considered that the *numerus Mauretorum* represented a specialized unit with a very specific tactical role on the field. While the units of eastern archers were equipped with eastern recurve bow, a precious weapon that required specific skills to be crafted and used, it is indeed unclear if the Mauretanian warriors needed a particular *panoplia*. They are generally portrayed as skilled javelinmen.

11.5 - The Someșul Cluster.

Defending the north-west flank of the Porolissum cluster, a series of forts overlooked the valley of the Someșul Mare and the Someșul Mic. The forts of Cășeiu and Ilișua were located on the right bank of the Someșul Mare, overlooking the frontier and at the same time exploiting

¹¹⁸⁶ IMCD p. 435. Protase 1994 p. 97. Haalebos 1999 p. 35 has argued that the troop was *equitata*.

¹¹⁸⁷ Marcu 2009 p. 115.

¹¹⁸⁸ Torma 1863, pp. 10–1.

¹¹⁸⁹ Reports have been published online: <http://cronica.cimec.ro/detaliu.asp?k=1511> (2001 campaign, published 2002) <http://cronica.cimec.ro/detaliu.asp?k=3777> (2006 campaign, published 2007). Archaeological excavations of 2008 have been published together the *Cronica Cercetărilor Arheologice din România in Valahia* 21 (2009), see therefore Ilieș *et alii* 2009 p. 208.

the Someșul as a significant element of the communication network of the province. Both military bases garrisoned infantry troops, the most common solution for the border military infrastructures. The third fort of the cluster, located in nowadays Gherla and on the right bank of the Someșul Mic, garrisoned a troop of cavalymen. It can be recognized the very common deployment pattern with a mobile reserve stationed in a secondary line.

The cluster presents an interesting element of cohesion in the possible presence of *beneficiarii consulares* both in Cășeu and Ilișua. While the *beneficiarii* are well attested by epigraphic documents in Cășeu, where a *regio* is put under the control of these military officers, their presence in Ilișua has been hypothesized on the base of a single *beneficiarii* spearhead. They possibly overlooked the near *regio/territorium* of Arcobara or Arcobadara, but the evidences for a *statio* in Ilișua are indeed particularly *weak*.

Stationes are attested in both forts, but the purpose of these imperial outposts is still relatively unclear, and it has generated a huge debate in the academic community.

The presence of Geto-Dacian populations still loosely tied to the empire has been prospected, but the presence of those officers connected with the central provincial government could have been explained also in connection with the exploitation of local salt mines.

Evidences of military workshops and metallurgic activities are particularly consistent in the cluster, albeit the traces are not homogeneous.

Cășeu/Samum and the *regio ansamensium*. Keep following the Porolissensis line of defence, after the *castra* at Tihau, the imperial army occupied a small plateau on the right river of the Someș river in a locality nowadays known as Cășeu. The fort was strategically located at the confluence of the Someșul Mic (the “Little Someș”) into the larger river Someș that represented indeed an important topographic element of the norther Dacian border¹¹⁹⁰. The fort presents unusually dense traces of crafting activities, with possibly an area exclusively dedicated to workshops activity.

The *castra* were originally built and occupied possibly by the *coh. II Britannorum milliaria*, later occupied by the *coh. I Britannica milliaria*¹¹⁹¹. The last one was surely *equitata* and *stabulae* have been found in the *castra*¹¹⁹². The change could have taken place at the beginning of

¹¹⁹⁰ Isac 2003 pp. 19-20.

¹¹⁹¹ See in general Isac 1987 and Marcu 2009 pp. 67-70. Isac 2003 pp. 33-38 about the *coh. II Britannorum milliaria*, that is well attested in diplomas from Dacia (RMD 148 = CIL 16,163; RMD 47; RMD 64= CIL 16,185). The unity possibly sent building materials to Ilișua at the beginning of Trajan’s age Isac 2003 p. 34. Isac 2003 pp. 38- 47 about the I Birtannica milliaria, attested in Dacia since the aftermath of the Second Dacian War: RMD 148; CIL 16,57= IDR I Dipl. 2; CIL 16,163= IDR I Dipl. 3.

¹¹⁹² Isac 2003 p. 43.

Hadrian's reign, when it is known that military forces in Dacia underwent an unusual activity and were frequently redeployed inside the province.

The fort at Căseiu presents many interesting features and it has attracted the attention of Romanian and international scholar since longtime.

The presence of a Roman military base was vaguely known since the 15th-16th century, when a large quantity of inscriptions was found in the area and subsequently collected and exposed. Many inscriptions were displayed in the nearby Haller castle and the baroque residence was actually build exploiting the stone from the ancient Roman fort¹¹⁹³.

The inscriptions were read and published by Torma and later by Mommsen, entering the CIL. For a long time, the attention of researchers and scholars was almost monopolized by these document and little was known of the fort. Even the position of the *castra* was relatively unknown since the very end of the 19th century¹¹⁹⁴.

Modern archaeological explorations started only in 1928-1929 with the work of Panaitescu as part of a larger scientific program that targeted many important historical sites of Romania. Unfortunately, Panaitescu did not rigorously apply the stratigraphic method, and he published the result of his excavations in two brief papers. The data from these early excavations are therefore limited in quantity and quality: Panaitescu heavily focused on structure and on the most impressive findings in the area, discarding completely "humble" pottery shards and minor artifacts¹¹⁹⁵. The gnoseological void was destined to be filled only starting from the 1980s, when systematic exploration in the fort started again.

Two phases were identified by Panaitescu already and later confirmed in more recent times. The fort is of Trajanic origin and was built at the end of the Dacian wars. The very first phase is poorly known and even the curtain defenses, constituted by an earthen *vallum* apparently with no palisade on top of it, have left few traces¹¹⁹⁶. The curtain was later rebuilt in stone. Panaitescu argued that the reconstruction took place at the beginning of the 3rd century AD, possibly in occasion of Caracalla's visit in the region. It should be noticed however that he based his assumption on an inscription commemorating the empress Iulia Domna, a document that is rather a demonstration of loyalty but does not offer any information about the date of construction of the stone curtain¹¹⁹⁷.

¹¹⁹³ Isac 2003 p. 21.

¹¹⁹⁴ CIL 3, 822; 827 = 7633; 828; 830 = 7631; 831; 7630.

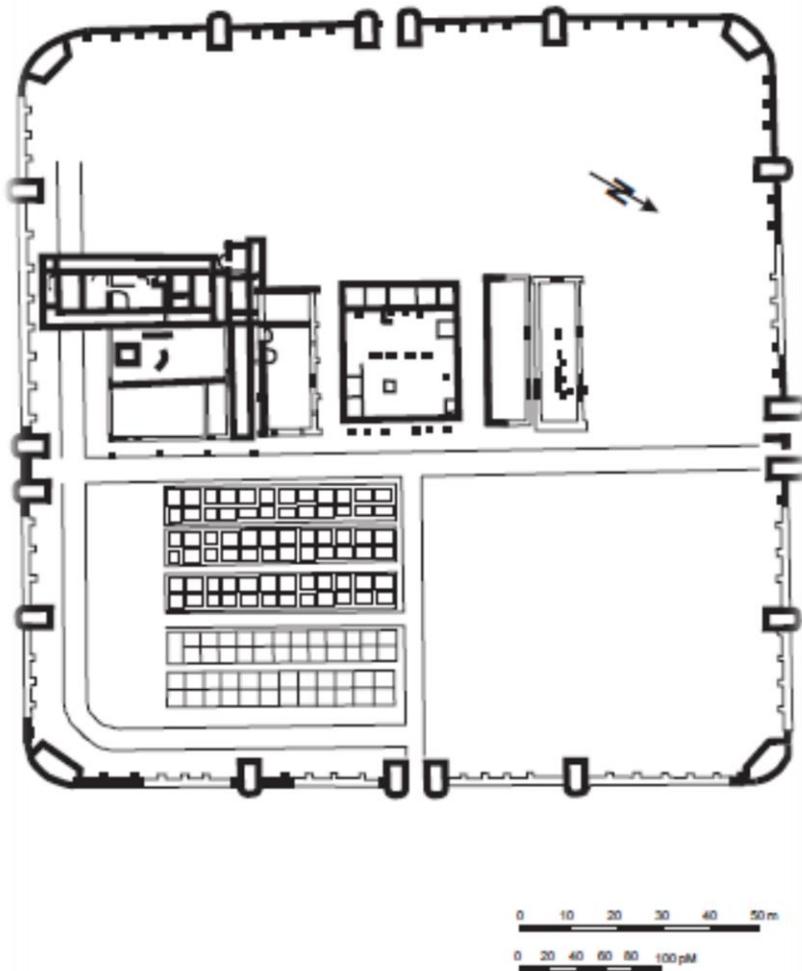
¹¹⁹⁵ Panaitescu 1929a pp. 321-342, e Panaitescu 1929b pp. 73-82.

¹¹⁹⁶ Isac 2003 pp. 60-71.

¹¹⁹⁷ Panaitescu 1929b pp. 78-80.

The hypothesis has been confirmed by recent excavations under the supervision of Isac, who have confirmed Samum chronological development on stratigraphic bases¹¹⁹⁸.

The fort presents a curious squared layout: it measures 165 x 165 m, covering almost 3 hectares¹¹⁹⁹.



A series of internal buttresses define the curtain, a feature that has been widely explained in the past. It was once interpreted as a system destined to sustain an elevated patrol path, but it was probably intended to reinforce the wall. The area was exposed to frequent flood, and the nearby civil *vicus* appears to have been in particular affected by this problem, and the phenomenon possibly undermined the solidity of the curtain¹²⁰⁰.

The internal plan is relatively well known, with fully excavated *principia*, and a well-known *praetorium*.

The headquarter building covers roughly the 3% of the fort (30x25,4 m) and belongs to the Fellman II type defined by the existence of two open air courtyards delimited and separated by four stone pillars. The building presents some similarities with the *principia* in Gilau, in

¹¹⁹⁸ Isac 2003 pp. 114-120.

¹¹⁹⁹ Isac 2003 p. 71.

¹²⁰⁰ Isac 2003 pp. 75-80.

particular the 6-pillars arrangement on the front of the building intended to support the roof¹²⁰¹.

Courtyard A was flanked by 3 rooms per side, but the west part of the area was completely destroyed during the Middle-Age, possibly exploited as a stone quarry¹²⁰². The *courtyard B* gave access to the rooms at the rear of the building, where a tribunal and an *aedes* were located¹²⁰³.

For the purpose of the present work, it is however necessary to point out that the room number 4 of the principia, located on the S-W corner of the building and therefore more close to the first granary of the *castra*, presents traces of crafting activities. In a second phase, the room was equipped with a hypocaust but under the heating system traces of a previous kiln have emerged. The area is defined by 4 roughly rectangular pits arranged in a regular and symmetric way. Each pit is filled with “yellowish clay, burnt pigments, wall dust, mortar and snail shells”. Five more pits were scattered in the area. The two larger pits formed a structure with 80 cm of diameter, partially overlapped by the stone wall of room 4, that has been interpreted as a kiln. The purpose of the structure and the room is not completely clear, but various activities evidently took place in the area before the room was re-purposed in a later time¹²⁰⁴.

The *praetorium* presents also many interesting features for the present thesis.

The building had three phases¹²⁰⁵, albeit the first two, when the commander’s building were realized in perishable materials, are less known. At the beginning, the commander’s house was realized in timber. The dimensions were approximately 26,5 x 31 m, with “very long-shape rooms”, possibly hallways and corridors, but nothing more is known of the plan¹²⁰⁶. The second phase maintained a similar plan and a wood core-structure, but walls had wickerwork stuck with adobe on both sides possibly as a way to face the rigid climate of Dacian winters. The *praetorium* was slightly enlarged in this phase (28,5 x 31 m) and 4 wings, divided in small

¹²⁰¹ Marcu 2009 pp. 54-55.

¹²⁰² Isac 2003 pp. 125-126.

¹²⁰³ Isac 2003 pp-127-131.

¹²⁰⁴ Isac 2003 p. 133.

¹²⁰⁵ Isac-Hügel-Andreica 1994 pp. 56–60.

¹²⁰⁶ Isac 2003 pp. 135-136.

compartments, were arranged around a central courtyard¹²⁰⁷.

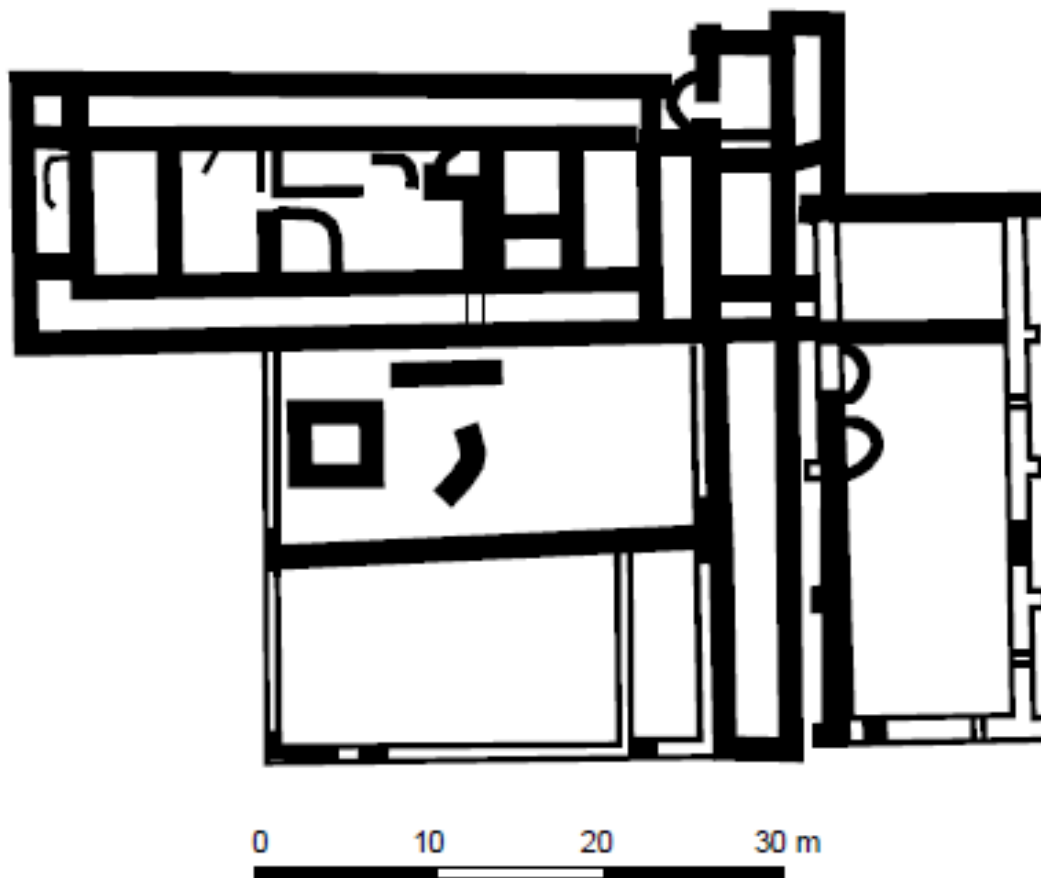


Figure 15 Caseiu - Praetorium (final phase). From Marcu 2009 fig. no. 10.

Only in a third phase the *praetorium* was built completely in *opus incertum* with stones of volcanic origin. Isac signaled that the previous excavations lead by Panaitescu have troubled the stratigraphy of the area, especially in conjunctions with the external walls, complicating the reconstruction of the building¹²⁰⁸.

The position between the *via sagularis* and the *horreum* remained the same, but the plan was re-shaped. Three more sub-phases can be detected. During the phase III a the praetorium was of 25x35 m with a large open courtyard divided in two almost equal sections, A (23,5 x 11 m) and B (23,5 x 10,5), and bot paved. Eight or nine chambers were grouped on the southern side of the building, facing the *retentura*¹²⁰⁹.

¹²⁰⁷ Isac 2003 pp. 136-137.

¹²⁰⁸ Isac 2003 p. 139.

¹²⁰⁹ In eneral Isac 2003 pp. 139-142.

A curious complex, possibly with ritual purpose, has been signaled in the courtyard A. A small building of 5x4 m has been interpreted as a water tank¹²¹⁰. It was situated near a large circular pit (5,5 m of diameter) whose edge was marked by a wall of pebbles and mortars. Evident traces of combustion have been signalled on the wall and inside the pit, shaped as stairs and filled with ashes¹²¹¹.

During the phase IIIb, the *praetorium* complex was enlarged towards the first *horreum* of the fort, that consequently became part of a new wing of the commander's house. A large garbage pit and traces of combustion have been interpreted by Isac as the remnants of a kitchen that functioned in connexion with this new wing, possibly destined to be used as an administrative block of *officia*¹²¹².

During the phase IIIc, the building was further enlarged towards south and east, and a new wing was added overlapping the *via sagularis*¹²¹³. The enlarging of commander's building over older structure and "common" spaces is a known tendency for the area of Dacia and it is particularly marked during the mid of the 3rd century AD and the last decades of the imperial presence in the area. In this third phase, the addition of an east wing to the *praetorium* is marked by a series of spaces destined to crafting activities. It is noteworthy to signal the presence of a furnace, associated with huge quantities of bronze and iron slags, burnt paces and crucibles. In room number 20, a water basin was connected to the small *fabrica* through a channel made with re-used bricks. Further traces of metallurgic and crafting activities were spotted in the room number 24, where iron tools, knives, a *pondus*, crampons, needles and spikes were found in good quantity¹²¹⁴.

A logistic complex was apparently built in *latus sinistrum*, with three more buildings possibly intended as storehouses or granaries. As Marcus has noted, the space occupied by these structures exceeded the average surface occupied by granaries and warehouses, and it is therefore possible that these structures did not function all together at the same time¹²¹⁵. The less known of these structures is a partially uncovered building close to the north wall, but very few information has been provided¹²¹⁶. The so called "second *horreum*" is located left of the

¹²¹⁰ It is indeed of a known type, but the clear purpose is unclear: see Johnson 1987 p. 207.

¹²¹¹ Isac 2003 p. 141.

¹²¹² Isac 2003 pp. 142-143.

¹²¹³ Isac 2003 pp. 143-149.

¹²¹⁴ Isac, Hgel, Andreica 1994, 64; Isac 2003 p. 145.

¹²¹⁵ Marcu 2009 pp. 61-64.

¹²¹⁶ Isac 2003 pp. 149-162

principia, with large dimensions (36x10 m) and very thick walls (1,10 m thick) reinforced by buttresses¹²¹⁷.

Between this second granary and the headquarters, a building of unknown purpose (nominated the “building X”) has been uncovered. The building had a very simple plan, no internal compartments and an overall dimension of 35 x 10 m. It was perfectly aligned with the principia and built in *opus incertum*. No buttresses have been discovered in the building, and thus it is unlikely that it functioned as a granary. The complex seems to be dated around the mid of the 2nd century AD (being built after the principia), but the functionality of those building is unclear¹²¹⁸. No traces of crafting or economic activities have been signaled in the area.

More elements of crafting activities have been signaled from the *praetentura sinistra*. Unfortunately, all the information seems to come from a single test trench (S IX) opened in 1988. The section has crossed a group of 5 *centuriae* and another cluster of 2 *centuriae* separated from the first by a *via vicinaria*. Remains of a destroyed kiln surrounded by iron slags has been found near this second group and possibly pertaining to an earlier stage of the fort¹²¹⁹. Isac¹²²⁰ has hypothesized the existence of a metallurgical compartment, but despite the solid evidences it is still unknown which area was covered by the productive activities and for how long this structure functioned.

The presence of so many traces of productive activities is indeed puzzling. Few data are available about the frontier system of *burgi* and watchtowers in the area. A series of Roman outposts on the neighboring hills have been identified, and more observation and signal towers have been hypothesized arguing that the military unit stationed in Cășeiu had the need to maintain contacts with other contingents of the provincial army¹²²¹.

Because of the lack of data about linear defenses and watchtowers, it has been hypothesized in the past that the imperial frontier was indeed established along the Someș, even though the *castra* at Cășeiu were on the right bank of the river¹²²².

The famous inscription CIL III, 7633=827, mentioning a locality named Samum and a mysterious “reg. ans” has since a long time stimulated a fierce debate about a possible statio in the area or even a tribe of the Dacians still loosely controlled by imperial officers but not strictly part of the empire.

¹²¹⁷ Isac 2003 pp. 163-167.

¹²¹⁸ Isac 2003 pp. 162-166.

¹²¹⁹ Isac 2003 pp. 185-186.

¹²²⁰ Isac 2003 p. 186.

¹²²¹ Ferenczi 1974 *passim*.

¹²²² Panaitescu 1929a p. 82.

The original solution proposed by Domazewski, regarding a sort of local militia recruited by the *vicus* Samum, looks complicated and of difficult application¹²²³.

Pârvan tried to reconnect instead the toponym of the *regio* to the *Ansamensium*, a population of Free Dacians: the hypothesis contemplated a *regio* north the river Somes where Geto-Dacians were still settled¹²²⁴. Russu has argued that the presence of *beneficarii* in situ could be interpreted as the proof of a military outpost on the *barbaricum*, but the solutions appears rather vague and inconsistent¹²²⁵.

In particular, it does not look convincing presuming that the *regio Ansamensium* were located outside the province, nor that an area already under surveillance of a strong military contingent needed a supplementary control. Furthermore, a certain evolution in the administrative arrangement of the area can be noted with two distinct groups of inscriptions, the first one mentioning a station under the authority of *beneficarii* (dated to the time of Severus Alexander) and the second group using instead the formula *agens sub sig(nis) Samum cum reg. ans.* (239 AD) or *r(e)g. ans, sub sig(nis)* (243 AD)¹²²⁶.

On the base of these two groups of inscriptions, Daicoviciu has argued that the *regio* was initially outside the provincial limits despite being under military surveillance, and only under the rule of Gordian the area was effectively incorporated into the Empire¹²²⁷. *Contra*, Isac has instead pointed out that the toponym Samum mentioned by the inscriptions show a clear connection with the modern name of the Somes river: the term could have more simply indicated the area surrounding the *castra* in Cășeiu, not a local population¹²²⁸. Opreanu has indeed connected the “*ans.*” present in the inscriptions to a *regio ansaria* or a more vaguely reference “*Ad Ansam*”, clearly meaning the river meanders that characterized the area¹²²⁹.

All these hypothesis does not completely explain why an area so close to a military base needed a separate administrative arrangement, nor it helps to understand the unusual concentration of artisanal activities inside the *castra* at Cășeiu.

The enlarged and complex *praetorium* of phases IIIb coincides with the reign of Severus Alexander, when *beneficarii* appears attested in the area¹²³⁰. Because no other installation for

¹²²³ Comment to CIL 3,7633.

¹²²⁴ Pârvan 1926 p. 275.

¹²²⁵ Russu 1956 pp. 121-125.

¹²²⁶ Schallmayer 1990 inscriptions numbered 525, 528-529, 532-533 highlighting the evolution of the terminology employed.

¹²²⁷ Daicoviciu 1966 pp. 164-170.

¹²²⁸ Isac 1994 pp. 205 – 217.

¹²²⁹ Opreanu 1994b pp. 69-78;

¹²³⁰ Isac 2003 p. 148.

military officers are known outside the *castra*, it is possible that the *praetorium* served also to accommodate the *beneficarii*, who had their offices in the structure. On the base of similar situation known from the miner district of Ampelum, Wollman has instead argued that the presence of *beneficarii* in situ could have been motivated by the exploitation of local natural resources, in particular of the nearby salt mines¹²³¹.

The hypothesis would help to explain the peculiar development of the *praetorium* during the 3rd century AD, that was enlarged to host also the official of the *beneficarii*, and perhaps even frame the productive and metallurgic activities known inside the forts. While other military bases close to the frontiers present scarce traces of metallurgic activities, the need for Cășeiu to host workshops and productive facilities could be understood in connection with local salt mines.

Ilișua - Arcobara/Arcobadara. East to Cășeiu, the fort at Ilișua contributed to defend the sector of the Tibles mountains¹²³². Established since the end of the Dacian wars, when a first small earth and timber fort was built with the help of the *XIII Gemina legio*, the military base was located in an area with a strong native presence¹²³³.

Thanks to an important inscription found in the *vicus* area in 1989, it has been presumed that the area was named Arcobadara or Arcobara, and a huge debate have since then arose about the possible nature of this administrative unity, whether it was the name of the military *vicus* or a native community¹²³⁴.

The name seems indeed Geto-Thracian¹²³⁵, but Protase did not find any confirmation that the *castra* was built on a already occupied site¹²³⁶. The arrival of the imperial army had massively impacted on local population, and the community grown nearby the fort appears as heavily Romanised¹²³⁷, but huge quantities of Dacian potteries have been found in the *castra* and in the surrounding area¹²³⁸, indicating that a strong native community still inhabited the area. The already mentioned of a *beneficaries* spearhead has been interpreted as a potential proof of the existence of a *statio* in the area, but no more evidences have emerged in this regard¹²³⁹.

¹²³¹ Wollman 1985-1986 p. 292.

¹²³² Protase-Gaiu-Marinescu 1997 p. 29.

¹²³³ Protase-Gaiu-Marinescu 1997 p. 67.

¹²³⁴ See Nemeti 2014 for a recent study on the topic.

¹²³⁵ Parvan 1926 pp. 256-257.

¹²³⁶ Protase-Gaiu-Marinescu 1997 p. 67.

¹²³⁷ Nemeti 2014 105-112.

¹²³⁸ Nemeti 2014

¹²³⁹ Gaiu 2014 pp. 22-30.

After the early archaeological investigations under the supervision of Torma, at the end of the 19th century¹²⁴⁰, no scientific explorations were performed in the area until the 1978, when Protase started a new series of campaigns in the fort, confirming many of the data previously gathered by Torma and deepening the knowledge of the Roman presence in the area¹²⁴¹.

Protase highlighted 3 phases of development of the *castra*. During the Trajanic age, the fort was smaller (140 x 130 m/1,82 ha) and possibly occupied by an infantry unit, the *cohors II Britannica*¹²⁴². It is unlikely that a *vexillatio* of the *XIII Gemina legio* stationed in the camp, it looks more possible that the legion simply sent technicians and building materials to boost the consolidation of the provincial borders.

The small earth and timber fort had been replaced by a larger one at the beginning of Hadrian's reign, when the *ala I Tungrorum Frontoniana*, recently moved in the province, reached the frontier sector in substitution of the *Britannica* cohort¹²⁴³.

The new fort of 182,2 x 181,5 m presents a consistent layer of destruction and apparently the whole site was destroyed with fire. It has been hypothesized that the stronghold was attacked and taken during the Marcomannic wars to be subsequently rebuilt in stone, maintaining the same dimension and the original slight asymmetry that characterised the precedent phase¹²⁴⁴. During the late 3rd century AD, the gates were blocked by poorly realised walls¹²⁴⁵: this phenomenon occurs frequently in Dacia during the last decades of the Roman presence in the area and could signify a general state of alert and insecurity in the area¹²⁴⁶.

The *praetorium*¹²⁴⁷, the *principia*¹²⁴⁸, a *horreum*¹²⁴⁹ (?) and many barracks have been archaeologically investigated. It could be noteworthy to signal two particularities. An ample area in the *retentura* was left completely open, with no structures individuated insofar¹²⁵⁰. A peculiar building with a very simple plan has been identified near the *principia*, in the *latus*

¹²⁴⁰ Torma 1863.

¹²⁴¹ Archaeological reports from 1978 to 1995 have been published in 1997 by Protase together with Gaiu and Marinescu.

¹²⁴² Protase-Gaiu-Marinescu 1997b, 7–9.

¹²⁴³ Protase-Gaiu-Marinescu 1997 p. 68.

¹²⁴⁴ Protase-Gaiu-Marinescu 1997b p. 46

¹²⁴⁵ Protase-Gaiu-Marinescu 1997 p.74. While the *porta praetorian* was surely blocked during the 3rd century AD, the block of the gates appears in Torma's description, but it has not been confirmed by Protase's excavations.

¹²⁴⁶ Isac 2006/2007 pp. 131-163.

¹²⁴⁷ Protase-Gaiu-Marinescu 1997 pp. 72-73.

¹²⁴⁸ Protase-Gaiu-Marinescu 1997 pp- 73-74.

¹²⁴⁹ The *horreum* is mentioned by Marcu 2009 p. 83.

¹²⁵⁰ Protase-Gaiu-Marinescu 1997 pl. 10 no structure appears in the area. However, Marcu has noted that the use of long and narrow trenches could prevent a correct mapping of the area. See Marcu 2009 p.80. Open spaces, a result of particularly large inner roads, are known also from the *castra* of Slaveni, where those spaces were used to train and care horses. About Slaveni see Tudor 1978 p. 306.

sinistrum. The structure appears as a rectangular building of 31,7 x 11,7 m, with two unequal compartments of 10 x 12,8 m and 10,15 x 16,40 m. A series of pillars and column has been noted along the wall, indicating that the building was somehow monumentalized. The purpose is unclear. Protase has proposed to consider the building a *valetudinarium*, but no evidences to sustain the hypothesis are known¹²⁵¹. No traces of artisanal activities are known from that area, it can be therefore excluded that the building functioned as workshop.

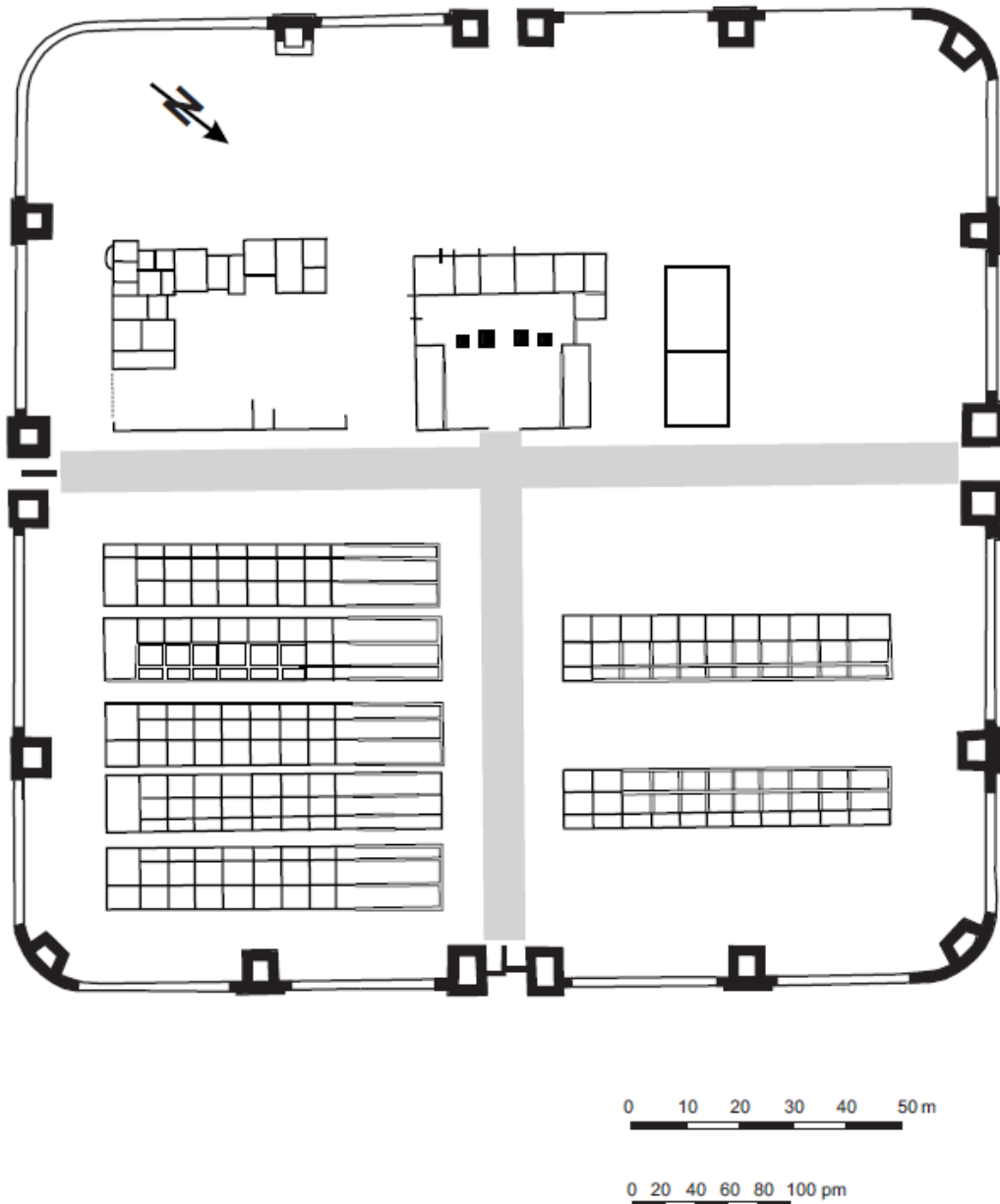


Figure 16 Ilişua, final phase of the Roman castra. Redrawn by Marcu 2009 (pl. no. 10 p. 270) after Protase-Gaiu-Marinescu 1997 pl. VII).

¹²⁵¹ Protase-Gaiu-Marinescu 1997 p. 74.

Thermae have been signalled ¹²⁵² in the *vicus*, and a complex wherein an ironsmith was likely have been also identified in the civil settlement¹²⁵³. Metallurgic activities in the area are known only through indirect evidences of maufacts and slags.

Metal working activities took place in the north west corner of the *castra*, where a huge quantity of crucibles and slags have been found¹²⁵⁴. The presence of casting-molds and unfinished pieces attests also some bronze-working activities in the fort, at least surely for small pieces like fibulae or other decorative/complementary pieces of equipment¹²⁵⁵.

Gaiu concluded that the large number of iron or bronze tools found in the area can be interpreted as a sure indication of the volume of metallurgic production in the site, but the logical induction appears inconsistent: the presence of an object can-not simply indicate that the object itself had been fabricated locally.

The presence of a cavalry unit close to the border is also puzzling, since alae were generally deployed more internally in the province. As for Gherla, the cavalrymen of the *ala*, originally recruited among the Germanic Tungri at the time of Augustus¹²⁵⁶, were equipped with spears and bows, assuring a certain tactical flexibility on the field. It is possible that a cavalry unit had more particular and specific needs than an infantry cohort (iron horseshoes? More frequent activity in patrolling and engaging potential threats? More equipment per soldiers connected to saddles, horse bardings?). Traces of small metallurgic activities have consistently appeared also in Gherla, another fort occupied by a cavalry unit, and this could perhaps explain the present situation.

The absence of associated infrastructures and facilities (kiln, water tanks, recycling deposits) makes impossible to estimate the overall productive output of the fort, but it is more likely that the production was limited to small pieces and equipment reparations.

Gherla. Located on the right bank of the Somesul Mic, the fort at Gherla controlled the important road that connected Napoca, situated at 45 km from the fort, to the northern frontiers guarded by the *castra* of Cășeu.

¹²⁵² *Thermae*, excavated by Torma mentioned by Protase, have been targeted by recent archaeological excavations: <http://cronica.cimec.ro/detaliu.asp?k=360> (report campaign 1995/1996); <http://cronica.cimec.ro/detaliu.asp?k=512> (report campaign 1996/1997); <http://cronica.cimec.ro/detaliu.asp?k=1631> (report campaign 1997/1998); <http://cronica.cimec.ro/detaliu.asp?k=1394> (report campaign 2000/2001);

¹²⁵³ Report published online: <http://cronica.cimec.ro/detaliu.asp?k=1209> (report campaign 2000). No information regarding the building plan has been provided.

¹²⁵⁴ Possibly for iron-working: Gaiu 2001 p. 103.

¹²⁵⁵ Gaiu 2011 pp. 169-178.

¹²⁵⁶ Protase-Gaiu-Marinescu 1997 p. 76: spearheads, pila and arrowheads have been found in the area.

Due to the presence and activity of a wood processing facility, that have played an important economic role in the recent history of the town¹²⁵⁷, the fort has been greatly troubled and few remains are still visible nowadays. The erosion activities of the Somesul Mic and agricultural activities have complicated the situation, but the *castra* were still visible in the 19th century, when the remains were mentioned and described by scholars at the time¹²⁵⁸.

The very first excavations started in the end of the 19th century to be continued at the beginning of the 20th century, mainly thanks to the efforts of Ornstein, who published the first results between the 1901 and the 1903¹²⁵⁹. Archaeological investigations continued in 1906-1907 with Orosz, who published a first plan of the site¹²⁶⁰. The excavations became more sporadic in the subsequent years, with archaeological campaigns in 1937 and 1961-1965¹²⁶¹. The activity of the wood processing facilities imposed many emergency interventions in the area until the years 1980s¹²⁶².

Besides the frequent and well-known inscriptions found in the area, the fort of Gherla is poorly known in its plan and internal organization. The fort was probably 162 x 169 m, enough to host the *ala II Pannoniorum quingenaria* garrisoned in situ¹²⁶³.

In the almost complete absence of data about the internal organization of the *castra*, no structure can be identified as a workshop. The presence of metallurgic activities is however attested by few findings, among which crucibles represent arguably the most meaningful¹²⁶⁴. The extent and productive capability of those structures is unknown, at the present state of research it seems unlikely that a major facility was active inside the *castra*.

It is noteworthy to signal however that many spear heads and arrow points have been found in the military quarters¹²⁶⁵. Despite the Celtic cavalrymen did not traditionally fight as mounted archers, it is possible that the peculiar strategic and tactic situation of Dacia forced the soldiers to widely adopt an equipment well suited for skirmishing actions. Stone projectiles for a ballista were also found, and possibly the fort was at a certain moment defended by artillery pieces¹²⁶⁶.

¹²⁵⁷ Mureşan 2014 pp. 128-138.

¹²⁵⁸ Hene 1836 p. 74; Neigebauer 1851 pp. 231-233.

¹²⁵⁹ Torma 1861 pp. 30-44; Goos 1876 p. 117; Ornstein 1902 pp. 76-89; Ornstein 1902a pp. 3-11; Ornstein 1903 pp. 109-120.

¹²⁶⁰ Orosz 1907 pp. 16-26.

¹²⁶¹ The results have not been published, only 3 inscriptions found in 1937 have been published by Macrea 1949 pp. 232 and ff.

¹²⁶² Archaeological publications of 1937 and of 1961-1965 have not been extensively published, see Protase-Gudea-Ardevan 2008 p. 19.

¹²⁶³ Gudea 1997 p. 102.

¹²⁶⁴ Ardevan 2007 pp. 350-356.

¹²⁶⁵ Protase-Gudea-Ardevan 2008 pp. 75-76.

¹²⁶⁶ Protase-Gudea-Ardevan 2008 p. 112 plate 89, pieces kept in Gherla museum, inventory numbers 379, 80, 2349.

11.6 - East Flank.

From Ilişua, the main road followed the Somesul Mare to reach the confluence between this large river and its affluent Sieu, from there further east the extreme outpost of Dacia Porolissensis on that side was represented by the *castra* at *Orheiul Bistritei*. The fort is globally poorly known, only the *principia* and a thermal complex were uncovered inside the military base¹²⁶⁷. The nearby fort of *Livezile* represent an interesting case of temporary military base: the site was quickly abandoned, possibly when the *castra* of Orheiul were completed. It could have been a marching camp pertaining to the very last phases of the Dacian Wars or perhaps a fort that proved not particularly useful¹²⁶⁸.

Due to the limited amount of information available, no workshop or metallurgic activity has been detected insofar. Only a group of kilns is known in Orheiul Bistritei, but the complex was probably intended to produce pottery or building materials.

The nearby fort of *Brincovenesti* was possibly already part of Dacia Superior. Also in this case, the archaeological exploration of the area is limited to a survey done in 1944 under the supervision of Paulovics and quoted by Tudor. Pottery kilns have been identified in the area¹²⁶⁹.

11.7 - Potaissa and the Legio V Macedonica.

The core of Dacia Porolissensis military network was represented by the quarters of the *V Macedonica* legion, relatively far away from the borders in a position that Gudea defined as a third line of defence.

Garrisoned in nowadays Turda, the *V Macedonica* legion occupied indeed a central position in the province and maintained a strong connection with Apulum and the *XIII Gemina* legion stationed there. Being the strongest unit in Dacia Porolissensis, the legion naturally acted as the armoured heart of the provincial army and constituted the potential heart of every major campaign.

The legion itself had a glorious history on its own. Possibly recruited by Brutus¹²⁷⁰ at the time of the last civil wars of the Republic, the legion was redeployed by Augustus in the Balkan theatre¹²⁷¹. It was particularly active starting from Claudius, participating in the conquest of Thracia and subsequently in the Neronian campaigns in Armenia¹²⁷².

¹²⁶⁷ Protase 2007 pp. 93-173.

¹²⁶⁸ Protase-Dănilă 1968 pp. 531-540.

¹²⁶⁹ Protase-Zrinyi 1975 pp. 58-69.

¹²⁷⁰ DA III,2.

¹²⁷¹ Gerov 1967 pp. 85-105.

¹²⁷² RE XII,2 c. 1573 (Ritterling). Tac. *Ann.* 15,6 (in Armenia).

The legion fought against in the east, participating in the siege and conquest of Jerusalem¹²⁷³ before being transferred again in Oescus, where it was garrisoned since the time of Claudius. Legionaries of the *V Macedonica* fought alongside Fuscus during the Domitian Dacian Wars and subsequently marched north with Trajan during the final stand of the Dacian world¹²⁷⁴. After the AD 106, the legion came back in Moesia Inferior, in Troesmis, where it remained until the age of Marcus Aurelius¹²⁷⁵. The arrival of the *V Macedonica* in Potaissa was probably motivated by the military difficulties the empire was experiencing in the area during the Marcomannic Wars.

Dacia was deeply struck by the “barbarians” and proved to be undefended against potential large-scale operations. It is interesting to note that many soldiers of the *legio* bare the name Aurelius in the mid 2nd century AD. It could have been the result of a special favour accorded by the emperor, Marcus Aurelius or even Commodus, to who had received the citizenship to be therefore enrolled into the legion¹²⁷⁶. It could also have been a necessary measure to face the impressive human loss suffered during the Marcomannic Wars and during the Antonine Pestilence. Sources mention that Marcus Aurelius was forced to recruit even slaves and brigands to face the dramatic situation¹²⁷⁷. It is possible that similar measures interested the *V Macedonica* in such times of desperate needs.

The legion remained in Potaissa until the definitive abandonment of the province under the rule of Gallienus or Aurelianus.

The importance of the legion in Roman history is directly connected with the relevance assumed by Dacia after the reign of Marcus Aurelius.

With two legions and a key strategic position, Dacia was so important to be entrusted to a prominent political figure as Fronto in AD 170¹²⁷⁸. The fact that the military operations against the northern tribes were lead by Pescennius Niger, provincial governor of the Three Daciae, and by Clodius Albinus, *legatus* of the *V Macedonica* legion¹²⁷⁹, confirm that the province was entrusted only to first level figures: both Niger and Albinus later challenged Severus for the supreme control over the empire, albeit the *V Macedonica* remained loyal to Septimius during the civil wars.

¹²⁷³ Flav. Jos. *Bell. Iud.* 3,7; 4,1; 5,1; 5,11; 6,1.

¹²⁷⁴ See IDR II, 601 (from Drajna de Sus) and IDR II, 99; IDR II, 556, 557, 559 (the legion participated in the construction of Drobeta's bridge, see Tudor Olt. Rom. p. 171).

¹²⁷⁵ Ptol. *Geogr.* 3,10,5.

¹²⁷⁶ Bărbulescu 1987 p. 83.

¹²⁷⁷ SHA *Marc. Aur.* 21,6-7; Dio 71,2,5.

¹²⁷⁸ CIL 6,1377. Piso 1982 p. 388.

¹²⁷⁹ Piso 1982 pp. 378-379; Piso 1993 pp. 106-108. The war is mentioned by Dio 72,3,1.

The final decades of the imperial dominion over Dacia are destined to remain relatively obscure. Gordian the III organized a mobile force using *vexillationes* from both the Dacian legions¹²⁸⁰, but the purpose of this decision is unclear. The area of Potaissa was surely interested by the Carpi hostile activities under Philip the Arabs¹²⁸¹. The frequent use of legionary *vexillationes* that defined the reign of Gallienus possibly further weakened the defence of the area until the fatal moment when the imperial army evacuated the Transylvanian plateau¹²⁸².

Globally, the history of the *V Macedonica* is well known through epigraphical documents. A rich prosopography is nowadays available and many commanders, officers and soldiers as well are known. The participation of the legion in Dacia governor's office is also well attested in inscriptions. Unfortunately, much less data are known from the legion quarters. The *castra* of the *V Macedonica* were located along the Arieș, on top of a small plateau easily accessible from north and south, in a strategic position to control the inland route that connected Dierna on the Danube with Porolissum at the frontier, one of the most vital road in the area¹²⁸³.

The toponym Potaissa appears to have been of Dacian origins. It is known that the area was inhabited since the Neolithic, but Dacian settlements have not been precisely identified yet¹²⁸⁴. The area under control of the legion was fairly large, approximately 600 km of *prata legionis*, and legion brick stamps have been found in various civil settlements around the *castra* and along the major inland routes¹²⁸⁵.

The site was occupied at the end of the Dacian Wars, when a fort garrisoned possibly garrisoned the *cohors I Flavia Ulpia Hispanorum milliaria*, but other units (*numerus Miciensium*, *cohors I Batavorum milliaria*, and the *XIII Gemina*) are known by brick stamps as well¹²⁸⁶. A new fort, large enough to garrison a legion, was built when the *V Macedonica* was re-deployed in the sector. The precise moment of its arrival is not completely clear: Fronto surely had the legion under his own command in the 170 AD, but it is unclear if the *V Macedonica* was already in Dacia under the governorship of Agricola (161-168 AD)¹²⁸⁷.

¹²⁸⁰ CIL 11,1836. See also CIL 6, 1645.

¹²⁸¹ The whole Transylvania was interested by Carpi's attack. See Mitrea 1953 pp. 611-640 (an altar erected by Valerius Sarapio in Apulum wherein a fortunate escape from being captured by the Carpi is mentioned); CIL 3, 1054 (from Ulpia Traiana Sarmizegetusa).

¹²⁸² Bărbulescu 1987 p. 31.

¹²⁸³ Bărbulescu 1994 pp. 9-11. Potaissa is mentioned in various forms by written sources: Ptol. *Geogr.* 3,8,4 (Patrouissa); *Digesta* 50,15,1,8,9 (Ulpianus, *De censibus*, under the form *Patavissensium vicus*). While is Patavissa in the Tabula Peutingeriana and CIL 3, 2086 (*decurio Patavissensis*), it appears as *Patabissa* in *Geogr. Ravenn.* 4,7.

¹²⁸⁴ Bărbulescu 1994 pp. 30-31.

¹²⁸⁵ Bărbulescu 1987 pp. 48-53.

¹²⁸⁶ Nemeti 1999 pp. 194-204.

¹²⁸⁷ Bărbulescu 1987 p. 23.

The new fort was built with the longest sides oriented east/south east- west/north west, covering a total of 23,3 ha (573 x 408 m)¹²⁸⁸.

The ruins of the legion *castra* are known since the 16th century AD, when it was described by a French ambassador travelling towards Instambul¹²⁸⁹. Modern studies started only in the 19th century with the works of Ercsei, Niegobaur, and Torma among the others¹²⁹⁰.

Modern activities required emergency excavations in 1950-1952, but systematic excavations started only few years after, in 1958¹²⁹¹. The curtain, the *fossae* and the gate are globally well known, being targeted in various occasions by test trenches and surveys¹²⁹².

The internal plan is largely more obscure. The *principia*, located in the centre of the camp at the conjunction of the *via principalis* and *via praetoria*, are probably the better-known building. The headquarters covered a large surface (124,6 x 72 m; 3,8% of the total surface of the military base). The structure can be classified as a Fellmann III type, with a large central courtyard and a basilica. Many rooms, some with hypocaust systems, have been identified, possibly official and a *schola beneficiariorum*, together with *armamentaria* and *aedes*¹²⁹³.

Partial remnants of the barracks are known from the *praetentura*, but more complete structures have been identified in the *latus praetorii sinistrum*, where the quarters of two *quingenariae* cohorts have been uncovered together with a tripartite *horreum*-storage space¹²⁹⁴. No other structures are known inside the camp.

Traces of metallurgic activities are instead known both from the *castra* and from the *canabae*-area, but no structures can be clearly associated with these activities. Barbulescu mentions studies of Stoicovici on local iron affirming that metallographic analysis have confirmed local production: the chemical analysis have shown similarities between metal slags in the area and iron objects¹²⁹⁵. However, Stoicovici studies seems not have been published. The theoretical problem is that this kind of analysis confirms that local metal sources were exploited, possibly from Moldoua Noua or even the Apuseni mountains, and not that objects were crafted in situ. In other words, it does not exclude importations from a large productive centre.

An iron ingot, iron slags and a fragment of crucible have been found in the *praetentura*-barracks area, not far from the *porta praetoria*, and probably in secondary position and with no

¹²⁸⁸ Barbulescu 1997 p. 14.

¹²⁸⁹ Pierre Lescalopier described the ruins of the *V Macedonica castra* in 1547. Barbulescu 1987 p. 14.

¹²⁹⁰ See in general Barbulescu 1987 pp. 90-97.

¹²⁹¹ Crişan 1961 pp. 431-439.

¹²⁹² See in general Barbulescu 1987 pp. 106-118.

¹²⁹³ Barbulescu 1987pp. 122-164; Barbulescu 1997 pp. 25-32.

¹²⁹⁴ Barbulescu 1987 pp. 164-172; Barbulescu 1997 pp. 33-39.

¹²⁹⁵ Barbulescu 1994 p. 108.

structures associated nor identified as a *fabrica*. A small deposit of metal objects, probably destined to be recycled, has also been identified¹²⁹⁶. The civil settlement is known for a particularly active economic life. Two pottery workshops¹²⁹⁷, each grouping multiple kilns, have been identified together with a vineyard and other economic activities¹²⁹⁸.

The commercial vocation of the settlement seems to be confirmed also by the presence of a negotiator among the *decuriones* of the town¹²⁹⁹.

Other traces of metallurgic activities have been signalled in the nearby valleys of the Sandului and at the base of Zanelor hill¹³⁰⁰. Evidences remain scarce, nevertheless. An altar found at Micești¹³⁰¹ has also shown that a *collegium fabrum* was active in Potaissa, but the possible role of this kind of association will be discussed in a forthcoming chapter. At the present state of research, traces of metallurgic activities have surely emerged from Potaissa, both from the *castra* and from the *canabae*, but without the possibility to identify a proper military workshop, it is still unclear if the total productive output was consistent enough to supply the local garrison with a full equipment or if the base depended on a larger logistic hub. Despite the finding of just a single iron ingot and a small deposit inside the *castra* could appear as poor evidence, it is nevertheless a clear sign that metallurgy was practised inside the fort. It is therefore possible that a proper workshop will be identified in further explorations.

11.8 - Preliminary Discussion.

At the present state of research, the overall situation of the specific logistic aspect of military equipment production in Dacia Porolissensis is very interesting, albeit it remains obscure in many of its aspects.

Tentatively, five clusters have been identified plus the legionary core in Potaissa. At least three radially organized networks can be also detected, each one pointing to Napoca and Potaissa via an intermediary military base: Bologa via Gialu; the sector between Buciumi and Tihau via Sutor; Cășeu and Ilișua via Gherla.

As it appears, the eastern flank, “defended” only by the fort at Orheiul Bistritei (Livezile was abandoned shortly after the end of Dacian Wars and Bracovenesti was more likely part of Dacia Superior) was relatively isolated.

¹²⁹⁶ Bărbulescu 1994 pp. 107-108.

¹²⁹⁷ Bărbulescu 1994 pp 109-115.

¹²⁹⁸ Glass production: Bărbulescu 1994 pp. 115-116. *Cella vinaria*: Catinaș-Bărbulescu 1979 pp. 101-126.

¹²⁹⁹ CILL III 2086.

¹³⁰⁰ Bajusz 1980 pp. 327 nr. 104; 375 nr. 273 and 274; 380 nr. 525-526.

¹³⁰¹ Russu-Milea 1967 pp. 165-173; see also Piso 1991 pp. 131-136.

Globally, traces of metallurgic activities are widely spread but often inconsistent and very few buildings have been associated with these productive activities. The Crisul Repede cluster, constituted by Bologa on a first line and Gilau in intermediary position, has presented scattered and unclear traces. Crucibles and slags attest bronzeworking in both forts, but only at Gilau the so-called Building A could present a plan compatible with a military workshop. It is noteworthy to signal that Gilau occupied an intermediary position and was garrisoned by a cavalry unit. Consistent traces of metallurgic activities have appeared in similar contexts elsewhere in Dacia.

The Meses sector has also restituted misleading data about. Despite the presence of the large and important site of Porolissum, few evidences have emerged. The B5 building in Buciumi is the only structure clearly associated with metallurgic activities: with a simple plan and few combustion systems, the facility should have had however a limited productive output. Another potential structure identified by LIDAR prospections in Romita presents a compatible plan, but further excavations are needed to confirm the identification.

The situation in Porolissum is unclear, mostly because of the limited surface explored inside the *castra* on top of Pomet hill and the uncertain information offered by older excavations. Crucibles, slags and unfinished pieces attest a certain activity, but no major structures have been identified.

Traces of metallurgic activities along the Meses sector and in the Porolissum cluster are globally inconsistent. The Somesul cluster presents the highest density of data regarding iron and bronze working processes. Crucibles have been found in Ilișua, Cășeiu and Gherla, with a potential facility identified in Cășeiu (the so called Building X), where traces of metallurgic activities have been found also in the praetorium, and in Ilișua.

Gherla and Ilișua were occupied by cavalry *alae*, while in Cășeiu, that presents the strongest presence of metallurgic activity, a *cohors milliaria equitata* was quartered. The sector hosted therefore a strong cavalry contingent, actually presenting the highest cavalry-infantry percentage of troops of all Dacia Porolissensis sector. It seems that a connection between mounted troops and metallurgic activity somehow existed, but the complete picture is unclear. Nor the east flank nor the Almas sector have provided information regarding metallurgic activities, mostly because of the limited excavations performed in the sites. Sutor, being a fort of the intermediary line and garrisoned by a cavalry unit, seems to have the highest probability to present a metallurgic facility according to the emerging pattern.

Overall, bronzeworking seems to have been the most frequent metallurgic activity in auxiliary *castra*. Potaissa, despite being occupied by a legion, does not represent an exception. Crucibles are known both from the fort and the *canabae*, the bronzeworking is relatively well attested while ironworking has been signalled on the base of single iron ingot and metal slags from the camp. The total surface covered in the fort is still limited, however, and it is highly probable that, due to the favourable position and the large workforce available, a larger *fabrica* was active in the legionary *castra*. A *collegium fabrum* is known also from the *canabae* developed near the legionary base.

12. Dacia Superior.

Iron and Gold of Roman Dacia.

The disembodiment of the great Trajanic province decided by Hadrian radically reshaped the administrative organization of the area. As consequence of this drastic measure, the two procuratorian provinces of Dacia Porolissensis, cut from the ancient province of Dacia, and Dacia Inferior, whose territories were originally part of the area temporarily occupied by Moesia Inferior army and attached to this province, defended respectively the northern sector of Transylvania, guarding the Meseş gate and the roads that led to Central Europe, and the Alutus sector, protecting the access to the eastern plains.

What remains of Trajan province of Dacia, the part not organised in the new Dacia Porolissensis, constituted the newly formed Dacia Superior, that was surely the most important among the three. From Apulum, chosen as the seat of the provincial governor, a *legatus* of praetorian rank had an entire legion under his command and was entrusted to rule over an area extended from Brancovenesti in the north down to the Danube in the south and between the Apuseni in the west and the eastern Carpathians.

The area was immensely rich in natural resources and economic possibilities. Besides the prosperous pastures and woods of the Transylvanian plateau and the Carpathians, the important gold mines of Ampelum had been attributed to Dacia Superior together with other mining districts for the exploitation of iron and lead. The command over the *XIII Gemina* legion, that represented the strongest military unit in the area until the arrival of the *V Macedonica* in Potaissa, made Dacia Superior the most important among the Dacian provinces, but the strategic importance of the area lied also in the control of the major access to the Transylvanian plateau from the south.

The passages across the Danube was firmly under control of Dacia Superior *legatus* and the army under his command. Drobeta, where the famous Apollodorus bridge crossed the river, was guarded by a strongly garrisoned fort, and the road from Lederata was controlled as well by a military *praesidium*, stationed in Tibiscum. The Danube itself represented a vital artery both for the military network, it is known that imperial fleets patrolled the river and assured logistic support, and for commerce in the area.

Troops of the provincial army overlooked also the mountain passes through the Carpathians that granted the connection between the southern regions and the Transylvanian plateau. Even the richest and most important urban settlement of the region, Apulum itself and

Sarmizegetusa fell under the authority of Dacia Superior and governor, not to mention the most important mining districts of the province and Ampelum gold mines among them.

If, as Macrea once stated, Dacia “defensive system” was a gigantic fan, it had for sure its iron pin on Apulum, in Dacia Superior. The area was massively fortified with a particular regard for the control over the inland routes. The military network was less impressive and dense in the east, where the eastern Carpathians were indeed a hard barrier to pass through. The Alutus valley became much more important at the time of Hadrian, when the militarized border of Dacia Inferior was established.

In a very schematic way, the Dacian network system was centred from the south along three main roads: the Alutus valley itself and the routes proceeding north from Lederata and Drobeta. The last two passed through the Iron Gates and merged in Tibiscum, from where they continued north towards Sarmizegetusa and Apulum, reaching from there the various key-sites of Dacia. The province of Dacia Superior maintained its prominence in the area even after Marcus Aurelius’ reorganization. The reunion of the three Dacian provinces in a larger administrative entity confirmed the importance of Apulum, that remained the seat of the *legatus Daciarum Trium* and of the legion *XIII Gemina*.

Despite its clear importance, Dacia Superior military network is arguably less known than the complex of fortification in Dacia Porolissensis. Fewer studies have been dedicated to the Dacia Superior army as coherent system and many forts remained poorly explored still nowadays. The large majority of military bases is summarily known, or at least the position of *castra* and the main chronological phases have been mapped, but many details regarding the internal plan are still missing. The organization of Dacia Superior military network seems to largely follow a different principle than Dacia Porolissensis one.

Because of the peculiar position of the province and the striking necessity to guard and control the mountain passes across the Carpathians, frontier clusters played apparently a weaker role in the organization of the imperial presence in the area. Only a group of forts protecting the eastern flank and located between Dacia Inferior and Dacia Porolissensis assumes clearly the characteristics of a coherent line of military bases.

The particularly dense concentration of *castra* in the south-west corner of the province adopted a radial organization instead. It is evident that the “cluster” in the case of Dacia Superior assumed the traits of a chain of forts built along a strategic inland route. The protection and control of the communication network evidently represented the strategic priority of Dacia Superior army and the military network was organized as a consequence.

Multiple chain cluster can be detected. From Cigmau, on the road to Apulum, at least four “branches” can be identified, each one representing a major inland route that converged from the south into Cigmau to continue further north: the Varadia corridor was the first cluster to be encountered from the west, overlooking the route from Lederata to Tibiscum passing through Berzobis; the Dierna-Tibiscum corridor; the Drobeta- Bumbesti corridor.

All three routes met in Ulpia Traiana Sarmizegetusa, from where the road continued north towards Cigmau and Apulum. Still West from Cigmau, the poorly known Marisus sector (corresponding to Gudea I external sector) represents a still open problem for modern researchers. Only the fort at Micia is surely known for the sector, blocking an access to the province, while a series of dubious fortifications along the Marisus had an unclear purpose. It could have been a sort of fortified road that penetrated into the barbaricum and assured contact with the Pannonic provinces, it was probably not part of Dacia Superior frontiers.

In the north and in the east, the military network was strongly complementary with Dacia Porollissensis and Inferior ones.

The fort at Razboieni, not so far from Potaissa, continued the line of defence on the western flank, providing an intermediary position between the two legionary bases.

On the opposite site, after Brancovenesti , that completed the Porolissensis East Flank, the forts between Sarateni and Sanpaul represented a line of conjunction with the defences of Dacia Inferior, that hold the southern slopes of the East Carpathians.

It is however evident that the military network of the Transylvanian plateau, planned and realised under Trajan, was imagined for a single province: the *castra* in the north are indeed placed along the frontiers, controlling the major inland routes and the mountain passes that connected the region to Central Europe. The south-west clusters and the south east cluster (the so-called *limes Alutanus*, *limes Transalutanus* and the forts on the eastern Carpathians) flanked and defended a narrow stripe of land that assured the vital connection of the Transylvanian plateau with the rest of the empire.

It is therefore impossible to identify a proper central and intermediary line considering just the forts of Dacia Superior. Despite being on the border between the Superior and the Porolissensis, the *castra* at Razboieni were effectively in an internal position in the province, the fort was indeed part of the intermediary line identified by Gudea.

The central line of defence identified by Gudea comprised just the two legionary fortresses of Potaissa and Apulum and only the second one was part of Dacia Superior. The Transylvanian “first line” was shared by Dacia Porolissensis (forts in the north), by Dacia Superior (forts in the

east) and Dacia Inferior (completing the perimeter occupying the southern slopes of the Carpathians).

Forts in the south were not arranged along multiple concentric lines but rather in a radial way, focusing on the control of important strategic roads. The concept of cluster will be therefore used only for the eastern flank of the military network, while for the complex of fortifications built around the Iron Gate it will be used the concept of “axis” instead. These chains of *castra* show a homogenous purpose in controlling a major route and can be effectively considered functional element of the military network.

12.1 - Varadia-Tibiscum axis.

The first chain encountered coming from the west protected the road from the Danube to Tibiscum passing through the temporary bases of the *III Flavia* legion. The chain is globally poorly known, with few details available. The Danube was overlooked by two *castra*.

The first one, located in nowadays **Banatska Palanka** (in Serbia) is poorly known. Brick stamps of multiple auxiliary units have been found in the site: the *cohors I Cretum*, the *cohors II Hispanorum* and the *ala II Pannoniorum* are attested alongside two legions, the *III Flavia* and the *VII Claudia*. The precise chronology remains unclear, but the fort was apparently suited for an auxiliary cohort¹³⁰².

Between the Varadia chain and the next inland route (the Dierna-Tibiscum axis), the fort of **Pojejena**, again occupied by an auxiliary unit, controlled the passage through the Danube Iron Gates and overlooked the river traffic. The fort curtain is known in some traits, and two phases have been identified¹³⁰³, but the internal plan is obscure and apparently irregular. Few buildings are known in the central area, but no principia are clearly visible in plan. A rectangular structure occupied part of the *latus praetorii dextrum* and a *horreum* is also visible and a structure with multiple compartments¹³⁰⁴. The fort was garrisoned by the *cohors V Gallorum*¹³⁰⁵, but it is likely that the *ala I Tungrorum* stationed in the area for a while¹³⁰⁶. Due to Pojejena unusual features, Marcu has proposed that the *castra* functioned as a sort of fortified supply base and military harbour¹³⁰⁷.

¹³⁰² AE 1912, 78; IDR III/1, 7; CIL III 80745 = IDR III/1 5; Gudea 2001 pp. 57-58; Nemeth 2005a p. 35.

¹³⁰³ Gudea 2001 pp. 13-15 (142-179 m, dated to first hal of 1st century AD) and pp. 59-61 (148-185). Second phase (rebuilding of the fort in stone) can be dated to the 2nd century AD.

¹³⁰⁴ See in general Gudea-Uzum 1973 pp. 85-96; Gudea 1975 pp. 332-343; Gudea-Bozu 1977 pp. 435-436; Gudea-Bozu 1979 pp. 181-189.

¹³⁰⁵ Matei Popescu- Țentea 2018 p. 57.

¹³⁰⁶ Matei Popescu- Țentea 2018 pp. 29-30

¹³⁰⁷ Marcu 2009 p. 150.

Proceeding north from Banatska Palanka, Roman fortifications are known from **Varadia** in two distinct spots. The fort on the Chilii hill was probably a temporary fortified camp that can be dated to Trajans' Dacian Wars, it apparently soon fell in disuse when the provinces was constituted¹³⁰⁸.

A new fortification was built on top of Pusca hill. The curtain (170x154) is relatively well known. It has been remarked that curtain towers flanking the gate and the gates themselves are particularly large, a feature that in Dacia has a comparison only in the fort of Bumbesti¹³⁰⁹.

The fort was probably occupied for a certain time by the *cohors I Vindelica* (*milliaria* and *equitata*), later transferred to Tibiscum¹³¹⁰. Preliminary reports have demonstrated that the *castra* had two phases¹³¹¹. Few information is known from the internal plan with the exclusion of the *principia*, more extensively excavated and marked by a particularly long central courtyard.

Surprisingly, no traces of the *praetorium* have been found: archaeological investigations have partially uncovered only some barracks where the commander house should be, but the surface covered by archaeological excavations remains limited. A fireplace can be associated with the first phase of these structures, but no archaeological materials have been associated with it¹³¹². The apparent absence of the *praetorium* is fascinating. The commander house building could have been located elsewhere in the fort, but this would prove to be a very unusual feature.

I do not know other *castra* without a *praetorium*, but smaller fortifications like *burgi* had no commander house inside. The extension of archaeological investigations in Varadia is still limited, and any conclusion risks to be largely premature, but I wonder if the absence of the commander building could be interpreted as a proof that the fort effectively functioned as an ancillary fortification attached to a larger military base: as an oversized *burgus*, the fort could have garrisoned detachments from different units.

The area has been recently investigated with geo-magnetic techniques for archaeological prospections. No building has clearly emerged from the prospection, and the absence of a clearly identified praetorium remains surprising, but an anomaly in the barracks area have

¹³⁰⁸ Benea 1983, 156; Iaroslavschi-Bozu 2003 pp. 295-300; Nemeth 2005b pp. 689-696.

119, 130-131, 133. 137. See also the reports published online in the Repertoriul Arheologic National:

<http://ran.cimec.ro/sel.asp?descript=varadia-varadia-caras-severin-situl-arheologic-de-la-varadia-dealul-chilii-cod-sit-ran-54519.02> (with reports from 1995 to 2002, and a brief summary of previous excavations).

¹³⁰⁹ Marcu 2009 p. 172. Reports are collected and published online: <http://ran.cimec.ro/sel.asp?descript=varadia-varadia-caras-severin-castrul-roman-de-la-varadia-pusta-rovina-cod-sit-ran-54519.01>.

¹³¹⁰ IDR III/4, 221.

¹³¹¹ The two phases have been identified by Florescu already during the excavations of 1932 (see Florescu 1934 pp. 60-72).

¹³¹² Report of the 2004 campaign: <http://cronica.cimec.ro/detalii.asp?k=3265>.

been interpreted as a possible concentration of metal objects, potentially indicating the presence of a workshop¹³¹³. No more details are however offered.

The next fortress along the line was built in **Surducu Mare**. The area has been however excavated only in two occasions¹³¹⁴ and the fort presents therefore no useful information for the present topic.

The importance of the Varadia axis was evidently known since the period of the Dacian wars. A large legionary fort was built in Berzobis most likely at the beginning of the 2nd century AD and temporarily occupied by the *III Flavia* legion. The military base remained in use until the age of Hadrian, when the legion was sent back to Moesia Inferior¹³¹⁵. Evidently, the area played an important strategic role in Trajan's original arrangement of the northern Danube conquest. The activity of the legion in the area is relatively well known: the soldiers of the *III Flavia* contributed to the construction of the military infrastructures in the area both sending building materials and building parties¹³¹⁶.

For the purpose of the present thesis, however, it should be admitted that the area offers very few information. Only at Varadia a potential concentration of metal objects have been identified, but this concentration does not indicate necessarily the presence of a workshop: a building once used to storage weapons and building materials could perhaps explain the very same anomaly. The single fireplace found in the phase 1 of Varadia *castra* could potentially offer some meaningful information. Simple fireplaces have been found in clear association with slags and crucibles in other forts, and the combustion structure in Varadia is located in a curious context being associated with the unusual organization of the *latus praetorii dextrum*. The position is theoretically compatible with a military workshop, but no information regarding the associated materials nor the complete plan of the building are available. At the present state of research, it should be concluded that the Varadia axis has offered no evidences of military workshops. It should also be considered that the area was originally occupied by Moesia Superior troops, many of which returned to the original province under Hadrian. It is still possible, due to the proximity of the river and the nature of the complex, whose primary purpose was to defend a path across the mountains, that forts in the area were more dependent on logistic support from other military bases in Dacia or from Moesia Superior.

¹³¹³ Micle *et alii* 2010 pp. 139-154.

¹³¹⁴ Protase 1975 pp. 345-348. See also <http://ran.cimec.ro/sel.asp?descript=surducu-mare-forotic-caras-severin-situl-arheologic-de-la-surducu-mare-rovina-cod-sit-ran-52892.01> .

¹³¹⁵ Protase 1967, pp. 49-51 and p. 67; Medelet - Petrovsky 1974 pp. 133-136; Gudea 1997b pp. 29-30.

¹³¹⁶ Opreanu 2006b pp. 51-74.

12.2 - Dierna Axis.

East to Pojejena, another axis can be identified. The route proceeded from Dierna on the Danube to the North, reaching Mehadia, Teregova and finally Tibiscum, from where the route kept towards Ulpia Traiana Sarmizegetusa.

Dierna was an important site already in the 2nd century AD, when a harbour both for military and civil use stimulated a dynamic economic development. Dierna was also a seat of an office of the *portorium Illyrici*: it was evidently at one end of one of the most trafficked road to enter the Transylvanian plateau if the site was provided with custom officers and facilities¹³¹⁷. The site remained part of the empire for long and the imperial presence in the area was maintained until late antiquity¹³¹⁸.

The fort of Hadrianic age has not been identified yet, nothing is therefore known of this earlier fortification. For the purpose of the present work, it is however noteworthy to signal that consistent traces of bronzeworking have been found.

A workshop was surely active in the area, albeit the plan of the productive facility has been largely obliterated by contemporary structures. For what it can be understood, the building had at least two distinct phases: the structure was originally built in perishable materials to be later reconstructed in stone. A kiln has been identified on the terrain and many findings can be associated to it. In particular, the presence of unfinished pieces confirm that a manufacture was active in the place. The workshop apparently produced mainly *fibulae*, but also small other pieces in bronze among which some had military applications. Evidently, the structure produced also for the soldiers in the area¹³¹⁹.

Plumb ingots have been also found, but the metal was rather used in moulding techniques rather than to fabricate objects. The workshop presents many comparable elements with similar facilities in Tibiscu, Micia, Porolissum, Napoca and Ilisua, but in the case of Dierna military commissions are surely confirmed¹³²⁰.

Further North, the fort at **Mehadia** protected the road across the mountains. The fort is poorly known, after the first investigations of the early-mid 20th century, few more trenches and sectors have been opened¹³²¹. In more recent years, professor Benea¹³²² has conducted

¹³¹⁷ IDR III/1, 35.

¹³¹⁸ Ardevan 1998 pp. 36-39.

¹³¹⁹ Bodor-Winkler 1979 pp. 141-155.

¹³²⁰ Benea 2008 pp. 113-114.

¹³²¹ Marcu 2009 p. 142.

¹³²² Benea, report of the 2002 campaign: <http://cronica.cimec.ro/detalii.asp?k=2018>.

some campaigns, confirming the chronology already proposed by Macrea¹³²³ and exploring the *vicus*. The fort itself covers 1,65 ha (116x 146 m) and was occupied until the late antiquity, even after the abandonment of the province. The fort was possibly garrisoned by the *cohors III Delmatarum*, but brick-stamps of the *cohors VIII Raetorum*, stationed in Teregova, and of the legions *XIII Gemina* and *V Macedonica* have been found in the area¹³²⁴.

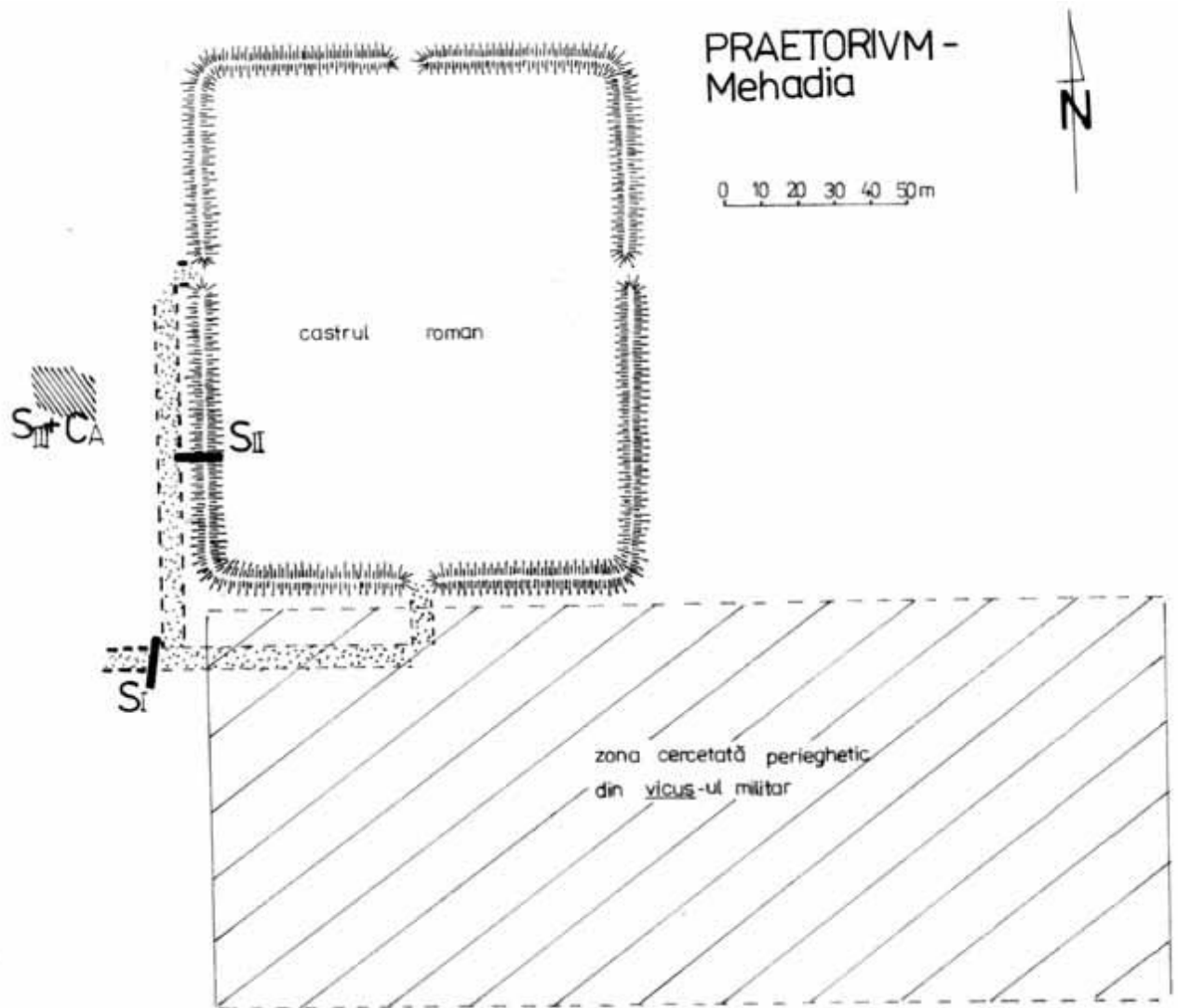


Figure 17 Published in "Cronica Cercetarilor Arheologice din România, Campania 2000", report n. 116.

No internal buildings are known, but more recent investigations have identified part of a temple outside the fort¹³²⁵. Unfortunately, a flood caused by a local water stream and some illegal excavations performed by treasure hunters have caused massive damage to the fort stratigraphy.

¹³²³ Macrea 1949b pp. 139-141.

¹³²⁴ Marcu 2009 p. 143 with references.

¹³²⁵ Benea, report of the 2001 campaign: <http://cronica.cimec.ro/detaliu.asp?k=1429>.

The archaeological excavations have been extended into the *vicus* during the campaigns of the 2002-2003. A temple has been identified and 7 meters east to the sacred building traces of metallurgy have emerged. Facilities for productive activities have been identified in the fort, albeit the data are still very limited and the spatial disposition of information is not easy to interpret.

A trench of 64x2 m oriented West-East from the north-west corner of the front has been excavated during the campaign of 2002. Between m25,25 -28 in the south wall of the section, a room has been identified. Further investigations through the opening of a test area of 6x2,50 m have revealed an installation for clay working. The area was paved with a lay of mortar topped with a further lay of *cocciopesto*. The basin was fixed and waterproofed with mortar, while its foundations were made of stone, pebbles and clay. Fragments of attic pottery have been found inside the basin, together with fragments of a Roman amphora.

Nearby the basin, 7 meters to the east, a pottery kiln has been identified together with his channel of alimentation that crossed the north wall of the section (m. 35,50-37,20). The structures was made with mudbricks, covering an area of 1,20 of maximum diameter. The kiln was of singular central column type, with many air conducts realised inside the kiln. Another installation, possibly another pottery kiln has been found 1,90 m (*sic*- no more direction specified) from the first one. Tough smaller of the first one (the diameter was 1,15 at its maximum), the kiln was built with the very same technique. Huge quantities of archaeological materials have been signalled but not described.

Finally, 2,75 m east (m 43,05-44 of the same section), In the south wall has been signalled another fire structure delimited by tiles. This area was probably used for "multiple artisan activities" and possibly for metal working, but no more specifications nor data are furnished. This structure had been apparently opened cutting an older road inside the fort¹³²⁶.

The last fort of the axis was located in nowadays **Teregova**. It has been recognised as the ancient *Ad Pannonios*¹³²⁷ that appears in the Tabula Peutingeriana, but considering that the fort is near Mehadia it could also have been *Garganae*¹³²⁸.

Few archaeological investigations have been performed in the past inside the fort: few surveys opened by Macrea in 1948 and by Gudea in 1968-1969¹³²⁹. Only in recent times (2000-2004), new test trenches have been opened inside the fort. Unfortunately, a flood during the

¹³²⁶ Benewa, report of the 2002 campaign: <http://cronica.cimec.ro/detaliu.asp?k=2018>.

¹³²⁷ Russu 1973 p. 105.

¹³²⁸ Daicoviciu, I. Miloia 1930 p. 15. Marcu 2009, quoting I. Piso (possibly through personal communication).

¹³²⁹ See Timoc 2004/2005 pp. 187-197 for a discussion over older excavations.

springtime of 2000 has had a heavy impact on the site, destroying or compromising the stratigraphy of a large portion of the fort¹³³⁰.

The campaigns lead by Ardeț and Ardeț have however confirmed the main chronological phases already highlighted by Macrea and by Gudea and confirmed also that the fort was occupied by the *cohors VIII Raetorum*. Dimension reported during the campaign of 2001 are of 120x120¹³³¹, but in the report of 2004 the fort appears 120x100¹³³².

A large layer presenting traces of fire and ashes have constantly emerged in the sectors, it seems possible that the fort was attacked in a certain moment of its history and destroyed¹³³³. Few is known of the internal plan of the *castra*. Barracks have been partially excavated north *via sagularis*. The plan is not complete, the structure was divided in multiple rooms and knew three phases: during the first two, it was built in perishable materials to be later re-constructed in stone¹³³⁴. Two large kilns, functioning in different moments, have been found in the area. Both were apparently used to cook bricks and tiles; no traces of metallurgic activities have been associated with the facility¹³³⁵. Due to the position and to comparable examples, it is possible that the kilns were used also to craft metal objects. Interestingly, the combustion structures functioned also as heating system for some near rooms.

Stamped bricks of the *coh. VIII Raetorum* have been found also in the near fort of Mehadia in the earliest levels. If the area partially uncovered by the archaeological investigations was indeed a military workshop for the production of building materials, it is possible that the Raeti unit had sent some materials to help the construction of other fort in the sector¹³³⁶. Soil analysis in the future can perhaps prove if the clay was particularly abundant in the area, or if it was of a particular good quality.

Drobeta Axis. The third route that defined the south west of Dacia Porolissensis started in Drobeta, where the famous Apollodorus' bridge was built under Trajan, and continued north, passing through the *castra* at Catunele and Bumbesti, to reach the Tibiscum – Ulpia Sarmizegetusa road and from there finally entering the Transylvanian plateau. Located on the Danube river at the eastern fringe of the Mehedinti mountains, Drobeta quickly became one of the most prominent Roman settlement north the Danube.

¹³³⁰ As reported in <http://cronica.cimec.ro/detaliu.asp?k=3250>.

¹³³¹ Ardeț- Ardeț, report of the 2001 campaign: <http://cronica.cimec.ro/detaliu.asp?k=1522>.

¹³³² See <http://cronica.cimec.ro/detaliu.asp?k=3250> for the report of 2004. Also Timoc 2004/2005 have highlighted that fort dimensions change greatly among different reports.

¹³³³ As it emerges from the report of the 2004 campaign: <http://cronica.cimec.ro/detaliu.asp?k=3250>.

¹³³⁴ See in general Marcu 2009 pp. 157-159.

¹³³⁵ Ardeț- Ardeț, report of the 2002 campaign: <http://cronica.cimec.ro/detaliu.asp?k=2120>.

¹³³⁶ Macrea 1960 pp. 339-352.

The famous bridge connected the town to Moesia Superior, it is however important to note that it is unclear when the magnificent construction was destroyed and fell in disuse. According to Dio, the bridge was destroyed by Hadrian the Drobeta seems to have prospered for centuries after¹³³⁷. It is hard to explain why the site was stubbornly maintained as part of the empire if the important bridge was already collapsed at the beginning of the 2nd century AD. Procopius, who mentions the city when the emperor Julian managed to obtain control over the area once again in the 6th century AD, states instead that the bridge was destroyed in late antiquity by an exceptional Danube flood¹³³⁸. This second information seems to be more consistent with the economic development of Drobeta during the 2nd and 3rd century AD.

The town reached the status of *municipium* already under Trajan and became a *colonia* under Septimius Severus. A harbour complex, both for military and civil use, was also realised in situ. The military presence in the area was relevant since the Trajanic age. A large fort with an earthen *vallum* was temporarily occupied during the early 2nd century AD by the troops employed in its construction, but a permanent garrison was stationed in area immediately after the construction of the bridge.

The fort at Drobeta represents a peculiar case. Thanks to extensive exploration from the end of the 19th century, the internal plan of the *castra* is almost entirely known, but because the stratigraphic method has not been systematically applied in older investigations (that area furthermore characterised by a weak attention to findings and manufactures), many data and details are still lacking.

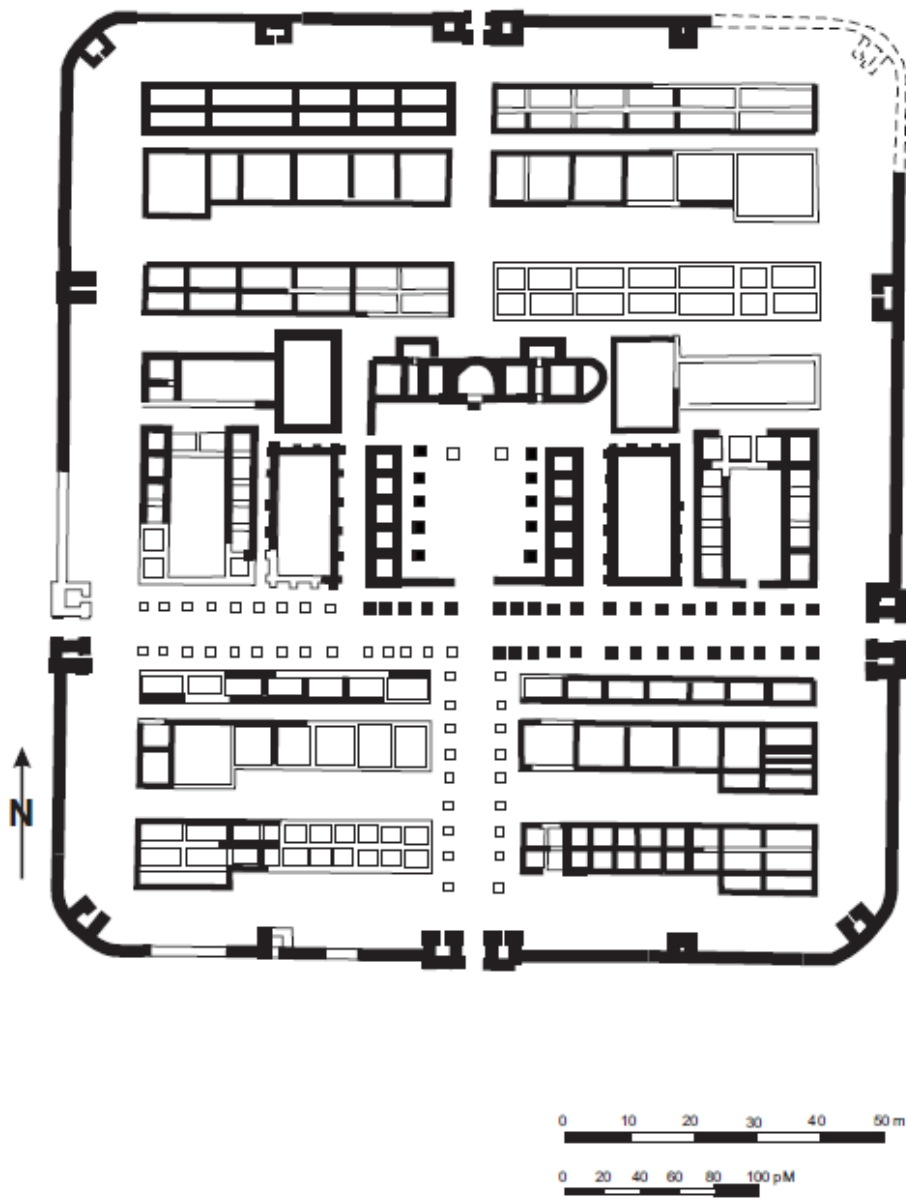
The ruins of the imperial fort are known since the 15th century, when the site was described by Cuspianus, Brodarics and later even by Cantacuzino. Marsigli, who visited the area as military officer under the command of Prince Eugen of Savoia, provided the first relatively detailed map of Roman ruins, correctly identifying the imperial fort on the Danube bank. Archaeological investigations started already in 1837, directed by Bolliac and under the patronage of Prince¹³³⁹ and soon attracted scholars and historians from all Europe.

Nowadays, the fort is well known in its overall layout and main feature.

¹³³⁷ Dio 68,13,6.

¹³³⁸ Proc. *De Aed.* 6,14.

¹³³⁹ Tudor 1978 pp. 274-275



The *castra* cover 1,69 hectares and at least five distinct phases are known: the first three phases cover the entire 2nd century AD, early to mid 3rd century and finally mid-late 3rd century AD¹³⁴⁰. The fort was subsequently rebuilt in later times, but the last phases of the *castra* fall out the chronological range of the present research.

The stamped bricks and tiles of multiple units have been found in the fort. The first phases are marked by the presence of *cohors I Antiochiensium*, *cohors III Campestris* and *I Sagittariorum* but, as Marcu has noted, the fort is not large enough to garrison all the troops at once¹³⁴¹. It is possible that the *cohors I Antiochiensium* participated to the construction of

the fort together with other units and legionary *vexillationes*¹³⁴². The *cohors III Campestris*

¹³⁴⁰ Florescu 1933 pp. 32-53; Florescu 1967 pp. 144-151.

¹³⁴¹ Marcu 2009 p. 138.

¹³⁴² IDR II,14. Marcu 2009 p. 138.

stationed in Drobeta seemingly until the reign of Marcus Aurelius, when it was replaced by the *cohors I Sagittariorum*¹³⁴³.

This unit can be associated with the *cohors I Aelia sagittariorum milliaria equitata*, known from military diplomas found in Pannonia where the unit was probably deployed before reaching Drobeta¹³⁴⁴.

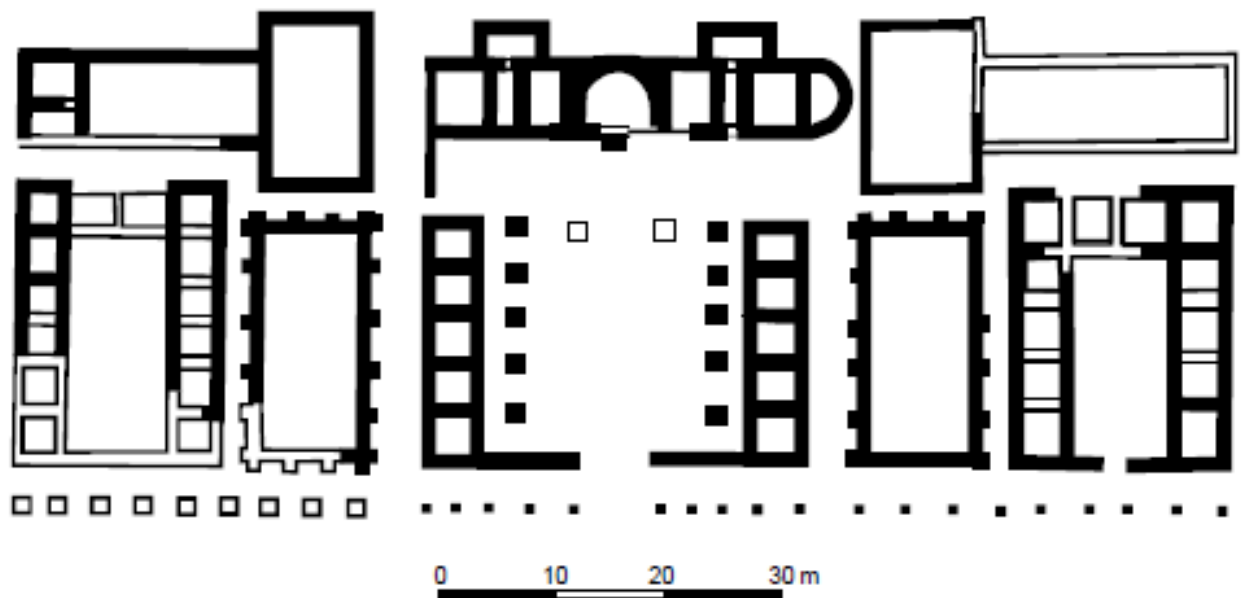


Figure 19 Drobeta, the principia and the surrounding buildings of the central part of the castra. From Marcu 2009 p. 133 fig. no. 28.

The central area of the fort is well known, and it presents some interesting features. The *principia* occupy 6,34% of fort total surface and they are arranged around a surprisingly large central courtyard, whose access was not monumentalised by a tetrapylon but rather with a simple portico, flanked by small rooms interpreted as *armamentaria*. On the rear side, a *basilica* has been identified and two *aedes* alongside other room¹³⁴⁵. The *principia* are flanked by two symmetrical assembles of buildings. Two *horrea* are located near the headquarter building, one for each side. Each one measures 23 x 12 m (276 m²), totally they cover more than 3% of the fort total surface, more than the average surface destined to granaries in an auxiliary fort¹³⁴⁶.

The presence of large granaries can be however easily understood considering the particular position of the fort, that protected the beginning of one of the most vital arteries to Transylvania. Surely, the destined storage area was purposely larger than normal to accommodate supply for transit troops or officers with their guards.

¹³⁴³ Piso 2001 p. 230.

¹³⁴⁴ Jentea –Matei Popescu 2004 pp. 59-296.

¹³⁴⁵ Tudor 1978 pp- 276-277.

¹³⁴⁶ Marcu 2009 p. 134.

A symmetrical module can be recognised also in the other buildings of the area. Both the *latus dextrum* and the *latus sinistrum* present two buildings immediately near the *horrea*, each one defined by multiple rooms arranged on three sides of a central long and narrow courtyard. The building in the *latus sinistrum* is slightly larger (23,8 x 18,5 m; 440, 3 m²) than the counterpart in the opposite of the *principia* (23.80 × 14.80 m, 352.24 m²), but no other appreciable differences have been identified¹³⁴⁷.

The purpose of these structures is unclear. Together, the two buildings occupied almost 800 m², a significant portion of the fort. Possibly because the internal plan of the fort was radically reshaped in later times, no significative archaeological materials have been found associated to these structures, making thus impossible to understand their function.

The accommodation is unusual for a *praetorium*, it appears very odd that a commander would have occupied both buildings at once, nor it seems completely convincing that the two constructions can be interpreted as the private houses of the commander and his lieutenants. No other *praetorium*-type building has been however identified in the fort. A similar building has been archaeologically identified in Hofheim, where however a *praetorium*-building has been identified. In Hofheim, such a structure has been identified as the private house of a detached commander, leading perhaps a vexillation, as a storage room or as a *valetudinarium*¹³⁴⁸. The plan is indeed compatible with the usual organization of a workshop-type building, with small functional spaces opened on a central courtyard or hallway.

Similarly, other two structures located on the rear of the *horrea*-courtyard buildings on both sides of the *principia* are as well. Vaguely resembling a couple of barracks, the two buildings present however unusual feature: the internal spaces are not arranged in the usual way, and a large room, collocated where the officer's lodgement should be, protrude from the main body of the building¹³⁴⁹. It has been proposed again that the structures could have been workshops, stables or storage rooms.

Archaeological traces of metallurgic activity from the *castra* are still missing, it is however highly possible that the fort functioned as a major logistic hub for the province.

Globally, many buildings with unclear purposes have been found inside the fort or in clear connection with the port and, especially, with the military harbour: the unusual large space destined to storage supply seems to confirm that the fort served as platform for official missions in the north. The structures of unclear purpose could have been administrative units, storage

¹³⁴⁷ Tudor 1978 p. 276.

¹³⁴⁸ Baatz-Herrmann 1982 p. 354.

¹³⁴⁹ Marcu 2009 pp. 137-138.

rooms destined to keep and secure important resources (spare weapons and projectiles, commodities of different nature) or even building associated with some productive activity.

An office of the *portorium Illyrici* is known from the area: two *servi villici*, Eutyches and Apulensis, was in charge of a *tabularium* in Drobeta under the authority of *Arelius Heraclitus*, a character labelled as “*procurator Auggg.*” in the inscription¹³⁵⁰. The epigraphic document is dated to the Severan age (198-209 AD). Evidently, the imperial administration carefully overlooked the goods that passed by Drobeta.

An important inscription mentions the existence of a *schola fabrum* in Drobeta:

D.M:/ Iul(ius) Herculanus / dec(urio) sc(h)ol(ae) fabr(rum) i<i>mag(inifer) / vix(it) ann(is) LXXX, Iul(ia) Viv/enia coniux Iul(ius) / Marcianus fi l(ius) im/<ag(inifer) sc(h)ol(ae) fab(rum) vix(it) ann (is) XXVII, Aur (elius) Iuli / us mil(es) c(o)h(ortis) I sag(ittariorum) im /<m>ag(inifer vix(it) ann(nis) XXX, Iul (ius) / Marcellinus fi l (ius) / vexil(larius sc(h)olae fabr(rum) vix(it) / XXV. Iul(ia) Ma/rcia fi l(ia) an(nis) XIII. Iul(ia) Er/aclia.fi l (ia) vix(it) an(nis) VIII. Iul(ia) Marcel(l)ina nep(os) vix(it) an(nis) III. Viv/enia mater se viva f(ecit)¹³⁵¹.

The monument commemorates a series of characters many of which were linked to the local *schola fabrum*: Iulius Herculanus, decurion and imaginifer of the schola (died at 80 years old), his son Marcianus, imaginifer of the schola, who died in young age; Aelius Iuli, a soldier of the *coh. I Sagittariorum*, imaginifer of the association, with his sons and daughters, among which Marcellinus lived enough to become imaginifer of the association.

The epigraphic document seems therefore to mention a family of artisans, but the nature of this association has been debated. For Christescu, who published a study on the document already in 1929, the *schola* was indeed a military association formed between the blacksmiths of the *cohors I Sagittariorum*¹³⁵², an hypothesis recently revived by Benea, who has read in the document a potential evidence for a central workshop in the area¹³⁵³.

Contra, Ardevan had instead considered the possibility that the *schola* was rather a civil association with a para-military organization¹³⁵⁴. It clearly appears nevertheless that those artisans had strong ties with the strong military contingent deployed in Drobeta and probably worked and produced for soldiers.

¹³⁵⁰ IDR II, 15.

¹³⁵¹ IDR II, 135.

¹³⁵² Christescu 1929 pp. 2-5.

¹³⁵³ Benea 2008b p. 385.

¹³⁵⁴ Ardevan 1997/1998 pp. 247-252.

Surely, the presence of a river fleet required additional specialised workers. Furthermore, Drobeta could surely be supplied of raw materials from the southern provinces and along the Danube and, from this well guarded base, the supply could easily travel north, reaching more isolated outposts and forts. Iron from the Dacian mines could reach Drobeta as well along the route that passed through Sarmizegetusa Regia and from there be moved along the river to reach even the far military bases of Moesia Inferior.

The fortification located north Drobeta, at **Catunele**, is poorly known. The site appears already in Austrian military map of early 18th century¹³⁵⁵ but few archaeological excavations have been performed *in situ* in 1973, a small survey by Davidescu¹³⁵⁶, and between the 1982-1984¹³⁵⁷. Test trenches have focused mostly on the curtains (114 x 116 m), the internal plan of the fort is therefore largely unexplored. Few barracks have been partially identified near the *via sagularis* and Petolescu mentions some structures of unknown function also: it is unclear however how and why he did not consider those buildings as *contubernia* as well. Traces of destruction by fire marked the layers of Hadrianic age, but the fort remained probably in use at least until the 3rd century AD, when coins dated to Gallienus have been found in the area¹³⁵⁸.

Military installations at **Bumbesti**, further north along the same axis, are poorly known as well. Two forts were erected relative near one to the other (roughly at 800 m of distance). The small fort on Vartop functioned roughly until the mid of the 2nd century AD¹³⁵⁹, while the fort at Bumbesti knew two phases: the earth and timber fort can be dated to the early 2nd century AD while the stone fort was probably built at the beginning of the 3rd century AD¹³⁶⁰. Another fortification, possibly a marching camp (234x156 m) built during Trajan's Dacian Wars, is known in the spot "Plesa¹³⁶¹". The area was interested by archaeological investigations since the end of the 19th century¹³⁶², but campaigns in the area remained sporadic at best. Furthermore, the Jiu river has progressively eroded the surviving structures¹³⁶³. Only one side of the curtain, of approximately 167 m, has been identified. The area was occupied by the *cohors*

¹³⁵⁵ Petolescu 1986 p. 156.

¹³⁵⁶ Tudor-Davidescu 1976 pp. 72-79.

¹³⁵⁷ Petolescu 1986 pp. 156-163.

¹³⁵⁸ Petolescu 1986 p. 163.

¹³⁵⁹ Reports of archaeological campaign from 1996 to 2008 are collected and published in the RAN (site code 79317.02): <http://ran.cimec.ro/sel.asp?descript=bumbesti-jiu-oras-bumbesti-jiu-gorj-situl-arheologic-din-epoca-romana-de-la-bumbesti-jiu-vartop-cod-sit-ran-79317.02>.

¹³⁶⁰ Reports of archaeological campaign from 1993 to 2009 are collected and published in the RAN (site code 79317.01): <http://ran.cimec.ro/sel.asp?descript=bumbesti-jiu-oras-bumbesti-jiu-gorj-castrul-si-asezarea-civila-de-la-bumbesti-jiu-gara-cod-sit-ran-79317.01>

¹³⁶¹ Petolescu 1980 p. 106; Vlădescu 1986 pp. 132-133.

¹³⁶² See Marinou- Cămui 1986 p. 139 for a brief summary of past explorations.

¹³⁶³ Marinou- Cămui 1986 p. 140.

III Cypria c. R., whose stamped building materials have been found in huge quantity in the nearby *vicus*¹³⁶⁴, but the stone curtain of the *castra* was built with the help of the *cohors I Aurelia Brittonum milliaria* at the beginning of the 3rd century AD¹³⁶⁵, that possibly replaced the cohorts of eastern warriors.

In 1990 (in the section SII) an atelier-complex has been identified, with traces of glass and production and iron-working as well¹³⁶⁶. No clear information has been provided, however. Civil workshops have been identified in both the *vici* near the fort on Vartop and on Bumbesti-Găra: glass, pottery and precious metals were worked locally¹³⁶⁷.

It is however noteworthy to signal the finding of a bronze helmet *in situ*¹³⁶⁸. The type is known and corresponds to type "D" identified by Robinson: it is a conically shaped bronze helmet, originally with a spherical element on top, a type mostly used by eastern archers during the 1st and 2nd century AD. Eastern auxiliary bowmen are represented while using this helmet on Trajan's column during the Dacian wars¹³⁶⁹.

The *cohors* was surely in Moesia Inferior before the conquest of Dacia (it is attested there between 103-1057AD), but it was likely recruited in the mid of the 1st century AD¹³⁷⁰.

It is interesting to note that the use of such a typical helmet was maintained for long if the bronze conical helmet has been found in Dacia. The object presents clear signs of damages, indicating that it was used intensively, but it is not dated to the time of the Dacian Wars: evidently, it reflects the normal consumption of defensive weaponry (damages inflicted in low intensity fights) or may be the helmet was damaged during the conflict that interested the whole area under Antoninus Pius. The helmet presents also clear sign of reparation, but the interventions seem to have not been done by skilled artisans¹³⁷¹.

It can be considered as proof that common soldiers possessed basic skills in metal working, at least enough to maintain and repair their equipment. The finding indicates also that some kind of small facility was available in the *castra* at least for these reparation work.

¹³⁶⁴ CIL 3 14216, 27 = IDR II 179; Petolescu 2002 p. 102.

¹³⁶⁵ CIL 3, 14485A; IDR II, 174.

¹³⁶⁶ <http://cronica.cimec.ro/detaliu.asp?k=708>.

¹³⁶⁷ <http://cronica.cimec.ro/detaliu.asp?k=106>.

¹³⁶⁸ According to Petculescu-Gheorghe p. 603, the helmet had been found by Plopşor in 1937 but the results of his excavations have not been published. The helmet is nowadays kept in Muzeul Judeţean Gorj, inv. 448.

¹³⁶⁹ Robinson 1975 pp. 83-85

¹³⁷⁰ CIL 16, 54; RMD 148; CIL XVI, 37. See Spaul 2000 p. 389.

¹³⁷¹ Petculescu –Gheorghe p. 603-606.

12.3 - Tibiscum -Cigmau axis.

The three roads from Banatska Palanka, Dierna and Drobeta appears to have been roughly perpendicular to the route Berzobis-Apulum, that passed through the forts of Tibiscum and Cigmau.

Tibiscum was therefore in a highly strategic position: point of conjunctions of the roads from Arcidava and from Dierna, the place was easily accessible also from Drobeta, from where the third road proceeded north and met Cigmau axis few kilometres east Tibiscum¹³⁷².

The Roman presence and ruins in the present day village of Jupa were known since the 16th century, when Mazerzius described some inscriptions found in the area, and later by Masigli, who visited the site while he was serving under the command of Eugen of Savoy. It was only at the end of the 19th century that the site was recognized as the ancient Tibiscum, known from the *Tabula Peutingeriana*¹³⁷³.

Modern archaeological investigations started in 1923, with the works of Mateescu and Boros¹³⁷⁴. Unfortunately, the area has been invested by a flood few years later. The calculated damages are massive but their entity it is not completely clear¹³⁷⁵. New archaeological campaigns started in the area again only in 1964 under the supervision of Moga¹³⁷⁶ and they became more systematic during the years, reaching a peak in frequency after during the 90s and until very recent years¹³⁷⁷.

The archaeological situation of the area is extremely interesting and complex. No less than five different forts have been identified, and one more was known to Marsigli but this sixth fort has never been located again¹³⁷⁸. The five *castra* represents different time of the imperial military presence in the area and illustrated well the dynamic development of the Roman military network in the Dacian provinces.

¹³⁷² Benea-Bona 1994 p. 8; Benea 1993 p. 267. Tibiscum appears in the Tabula Peutingeriana at 7,2,3.

¹³⁷³ See in general Benea-Bona 1994 pp. 9-12 about older excavations and researches in the area.

¹³⁷⁴ Researches remained unpublished. See Tudor 1968 p. 38; Răileanu 1979 pp. 108-126.

¹³⁷⁵ Benea-Bona 1994 p. 11.

¹³⁷⁶ Moga 1970 pp. 135-149.

¹³⁷⁷ See the RAN archives for a complete record of archaeological excavations in the area: code RAN 51038.01, <http://ran.cimec.ro/sel.asp?descript=jupa-municipiul-caransebes-caras-severin-castrul-si-vicus-ul-roman-municipiul-tibiscum-de-la-jupa-cetate-cod-sit-ran-51038.01>.

¹³⁷⁸ Benea-Bona 1994 p. 9.

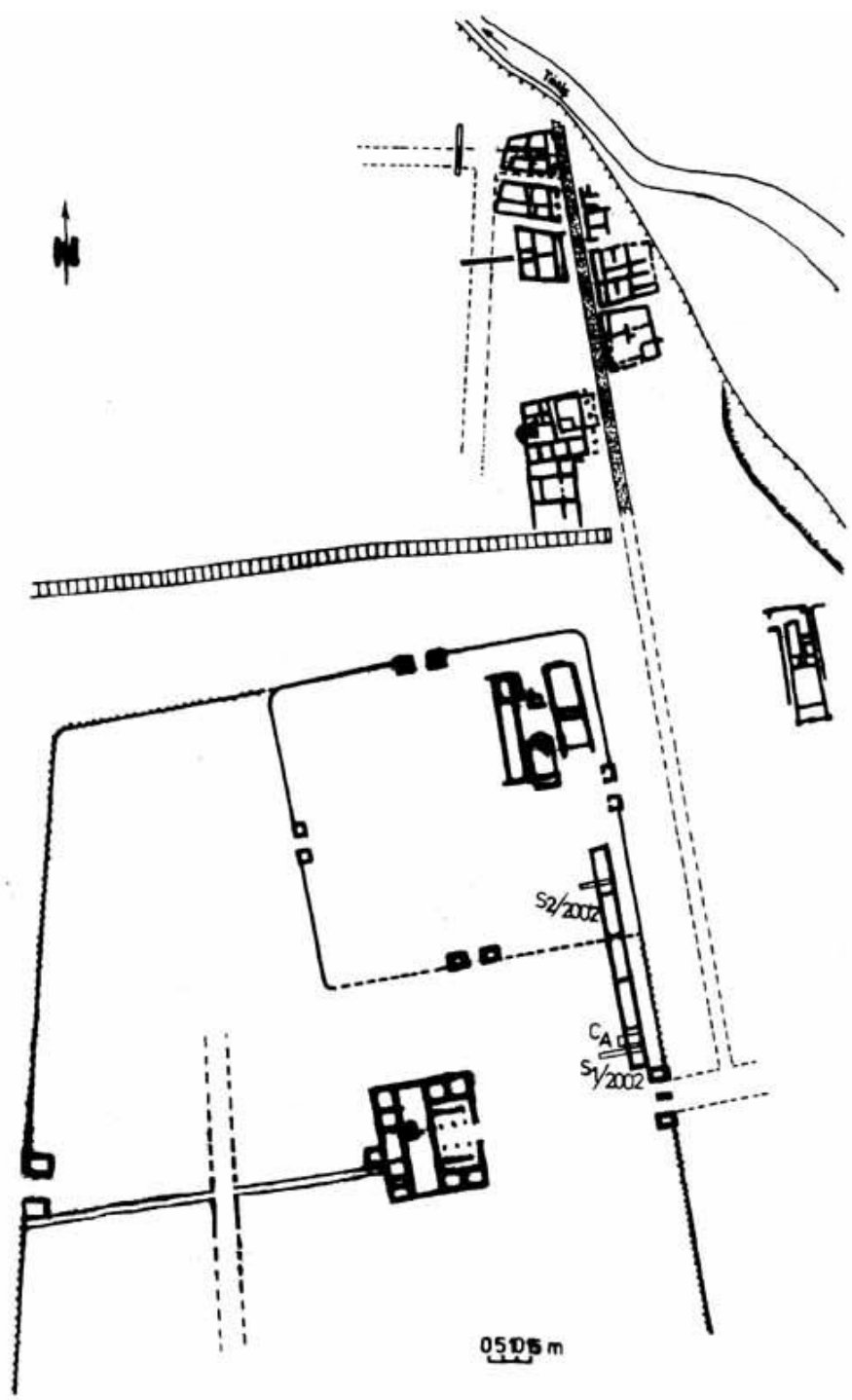


Figure 20 Map of the Tibiscum area. The small and large military castra in the lowest part, and the civil settlement (the vicus) in the north. Published in "Cronica Cercetarilor Arheologice din România, Campania 2002", report n. 106.

The first camp was fairly small (60x60 m) and it was built possibly during the three years between the first and the second Trajan's Dacian wars¹³⁷⁹. Nothing is known of this early installation beyond its dimension. It was soon followed by a second fort of larger dimensions (110x 101 m), originally built with earthen *valla* and palisades and later rebuilt with a stone curtains, probably under the reign of Hadrian and as a consequence of a destruction by fire¹³⁸⁰.

Those first two forts were later reunited in the "large" fort (the fourth one) of Tibiscum¹³⁸¹, but other two small *castra* are known. The third fort has been identified a first time in 1984 and its presence has been confirmed during the campaigns of early 1990s: it was located only 15 meters south the "small" stone camp¹³⁸². The fifth and last camp was located on the other bank of the Timis river, roughly 600 m away the military complex, and it was re-used as civil settlement after its abandonment. It was apparently used for a very short time, but few data are available for it¹³⁸³.

Consistent traces of destruction by fire have emerged in the area. It is possible that Tibiscum was attacked a first time at the beginning of Hadrian's reign¹³⁸⁴, when conflicts with the Sarmatians have been reported by literary sources, and perhaps again in the mid of the 2nd century AD¹³⁸⁵. The area possibly suffered attacks and raids by Free Dacians and Sarmatians under the reign of Antoninus, when a numerus of Mauri was sent as a reinforcement in the area. The large fort could have been built as a consequence of this new situation¹³⁸⁶. Its dimensions are however unclear, Bona, Petrusky and Petrovsky propose 310 x195 m but the figure is highly speculative¹³⁸⁷.

Internal spaces are globally poorly known. *Via praetoria* is surprisingly short in comparison with *via principalis*¹³⁸⁸. The *principia* have been completely undercovered¹³⁸⁹. The headquarters building (31,5 x 36 m) was fairly large but it occupies a relatively small area in relation of the total surface of the fort (just 1,87% of the area)¹³⁹⁰. The plan of the *principia* is "unusual", possibly because of the distortion imposed by the irregular ratio between *via*

¹³⁷⁹ Benea 1993 p. 268. The first camp has been identified in archaeological excavations during the years 1989-1990 whose result was still not published in 1993.

¹³⁸⁰ Benea 1986 pp 451-460. See also Benea 1993b pp. 91-106.

¹³⁸¹ Benea 1993 pp. 269-270; Benea-Bona 1994 pp. 38 and followings.

¹³⁸² Benea-Bona 1994 pp. 36-37.

¹³⁸³ Benea 1993 p. 270. It is possible that this fifth camp should be dated to late antiquity.

¹³⁸⁴ Benea 1993b p. 93.

¹³⁸⁵ Benea 1993 p. 269.

¹³⁸⁶ <http://cronica.cimec.ro/detaliu.asp?k=4550>,

¹³⁸⁷ Bona-Petrovsky-Petrovsky 1982 p. 312.

¹³⁸⁸ Marcu 2009 p. 162.

¹³⁸⁹ Petrescu – Rogoza 1990 pp. 107-145.

¹³⁹⁰ Benea-Bona 1994 pp. 44-45.

praetoria and *via principalis*. The stratigraphic relations of the various walls and elements of the principia is not always clear however. The building had a courtyard flanked by small rooms, possibly *armamentaria*, and a *basilica*¹³⁹¹. On the rear wall, 5 rooms have been identified. One of the rooms present a strange arrangement: the room was painted and presented in its centre a small altar made by bricks; all around a large quantity of ashes and animal bones have been found.

It has been proposed that the structure had a religious purpose, but no clear use has been identified¹³⁹².

In the North-East corner of the camp, a group of buildings has been identified. Two structures present heating system of hypocaust type. The first one (28,8 x 6,8 m) was partially extended over the *via sagularis*, has been recognized as the *schola* used by the Palmyrean soldiers and officers on the base of epigraphic documents associated with the structure and the heating system¹³⁹³. The chronology of the structure is unclear, it has been considered a later structure due to its position, but Marcu has raised some doubts about¹³⁹⁴.

The nearby structure appears to have been slightly smaller (18,4 x 10,7 m). The access was regulated through a small portico and an apse was added to the back wall in a later time. The structure has been interpreted as a storage room or a weapon depot, but the heating system points rather for a different use¹³⁹⁵. Marcu has proposed to consider it as a second *schola*¹³⁹⁶. Few more structures are known from the area. The most recent archaeological investigations have started to uncover barracks area¹³⁹⁷, but data are still missing.

Globally, there no consistent traces of metallurgic activities inside Tibiscum *castra*. Only in one section, carved into the small stone fort, a considerable quantity of metal slags has been signalled¹³⁹⁸.

The large fort knew a considerable military presence. The first troop to have occupied the area was the *cohors I Sagittariorum* at the beginning of the 2nd AD. The unit of Syrian archers appears in associations with stamped bricks and tiles of the *III Flavia Felix*, whose building activities in the area is well known, and the *XIII Gemina*¹³⁹⁹. As in similar cases mentioned

¹³⁹¹ Benea-Bona 1994 pp. 47-48.

¹³⁹² Benea-Bona 1994 pp. 48-49.

¹³⁹³ Benea-Bona 1994 pp. 50-51.

¹³⁹⁴ Piso-Benea 1999; Marcu 2009 p. 167.

¹³⁹⁵ Moga 1965; Moga 1970 or Moga et alii 1979; Bona-Petrovsky-Petrovsky 1982 p. 319.

¹³⁹⁶ Marcu 2009 pp. 168-170.

¹³⁹⁷ Report campaign 2009: <http://cronica.cimec.ro/detalii.asp?k=4550>; Report campaign 2011: <http://cronica.cimec.ro/detalii.asp?k=4737>.

¹³⁹⁸ Bona-Petrovsky-Petrovsky 1982 p. 316.

¹³⁹⁹ Moga 1974.

before, it seems easier that the legions had sent small parties and building materials rather than strong *vexillationes*, but the strategic importance of the area could have indeed required a stronger contingent since the beginning of Dacia as a Roman province. The *numerus Palmyrenorum* was later added to the garrison, probably under the reign of Hadrian¹⁴⁰⁰.

When the troop of Syrian archers was moved to Drobeta, its place was taken by *the cohorts I Vindelicorum*¹⁴⁰¹. The *numerus Maurorum* reached the area only under Antoninus Pius. Marcu has proposed that the African soldiers had initially occupied the small fort identified on the opposite Timis bank river, and the *numerus* was transferred into the large fortification when the large stone *castra* were finally completed¹⁴⁰².

If the military fort has presented no traces of metallurgic activity, bronzeworking and possibly iron working is however well attested in the nearby *vicus*.

Combustion structures associated with metal slags have been found in different buildings in the civil area¹⁴⁰³. In particular, an economic and productive quarter has been identified north the large *castra*. Various productions are attested: bricks and tiles; pottery; a workshop producing glass objects and jewellery¹⁴⁰⁴. Another kiln has been recently discovered in building C XIII but with no traces of metal working associated¹⁴⁰⁵.

Two buildings have shown consistent traces of metallurgic activities. Building C VIII has been only partially uncovered but consistent traces of iron working have emerged nevertheless: massive quantity of iron slags, nails and animal bones used in iron reducing processes¹⁴⁰⁶.

Four other workshops have been discovered in the area of building C VII. The structure had multiple phases, it suffered destruction by fire at least in two separate moments but was reconstructed always with the same plan at least until the late 3rd century AD, when it seems that the building completely lost its productive functionality¹⁴⁰⁷.

More traces of metal working have emerged in a building in front of *porta praetoria*. The archaeological report of 1976-1979 archaeological investigations mentions investigations in two small areas (S1C2 and S1C3) opened on the side of the S1 trench. A small atelier has been

¹⁴⁰⁰ Benea 1982 pp. 176-177.

¹⁴⁰¹ IDR III/1, 137, 138, 253–2. See also Marcu 2009 p. 171 for complete bibliographical references.

¹⁴⁰² Benea 1985 pp. 139-154.

¹⁴⁰³ See in general Ardeț- Ardeț 2004 regarding the civil settlement at Tibiscus.

¹⁴⁰⁴ Benea 1993 pp. 276-278.

¹⁴⁰⁵ Report campaign 2015: <http://cronica.cimec.ro/detaliu.asp?k=5538&d=Jupa-Mun-Caransebes-Caras-Severin-Cetate-2015>.

¹⁴⁰⁶ Benea 1982 pp. 330-334; Benea 1993 p. 278.

¹⁴⁰⁷ Benea 1983 p. 272-273; 278. Benea 1987.

partially discovered, the approximate dimensions being 6,5 x 1,8 m, it seems that bronze and precious metals was worked here¹⁴⁰⁸. The building however does not appear in later plans.

Tibiscum *vicus* appears to have been a large economic centre. The area was well protected by a defensive system that proceeded directly from the large stone fort and local workshops could not only profit of the very strategic position, at the heart of the whole south-west sector, to have easy access to resources and imports, but they can also benefit of a large garrison to have a rich military market at their own disposal.

It is noteworthy to signal however that the workshops were not particularly large, nor the productive activities seem to be continuous over time. As in other cases, bronzeworking is better attested than iron production, it follows that Tibiscum garrison was probably not self-sufficient for weapons supply.

Furthermore, metallurgic workshops seem to have been ceased their activity during the 2nd century AD: at least the artisans quarter discovered shifted its main productions towards jewelry and pottery in later time¹⁴⁰⁹. If the workshop that produced iron pieces really ceased its activity in the early 2nd century AD, its existence could be explained with the need of building materials for the stone fort built under Hadrian. It is however unclear why the massive rebuilt operation started with Antoninus, possibly motivated by a devastating attack suffered by the area, was not sustained by a similar facility: the larger stone fort of phase III and the rebuilt of the *vicus* should have required much more materials than precedent installations.

The most significant changing could be perhaps seen in the movement of the Syrian archer cohort. Eastern archers were renowned for their skill with a composite bow, a weapon that required high skills to be used on the battlefield but also to be crafted as well. It could be interesting to imagine that the workshops followed the unit in Drobeta, where the artisans kept producing bows and arrowpoints for this specialised unit.

The *numerus Palmyrenorum* would have however used the very same or a strongly similar equipment and the soldiers should have arrived during the reign of Hadrian, not many years before the phase III large stone fort. Perhaps, being the *numerus* a smaller unit the demand dropped drastically, or the Palmyrean warriors had their own artisans for supply and

¹⁴⁰⁸ Bona-Petrovsky-Petrovsky 1982 p. 321. It is unclear if from the same area a series of crucibles have been found: Bona-Petrovsky-Petrovsky 1983 pp. 410-411 mentions the trench S1 in their report of 1983 but in the plan (published 1982 p. 324 fig. 1), two trenches labelled S1, one in the area "z.Pod" and another in the area "Pod. Nord". Crucibles should come from the area Pod. Nord, but the area does not match the complex C VII and C VIII, generally interpreted as an artisanal complex, nor the workshop identified in "z.Pod" point.

¹⁴⁰⁹ Benea 1993 pp. 278-279. The chronology of this changing is however not completely clear.

reparation of military equipment: a military *fabrica* could have been opened in the newly constructed *castra*, making this civil workshops somehow superfluous.

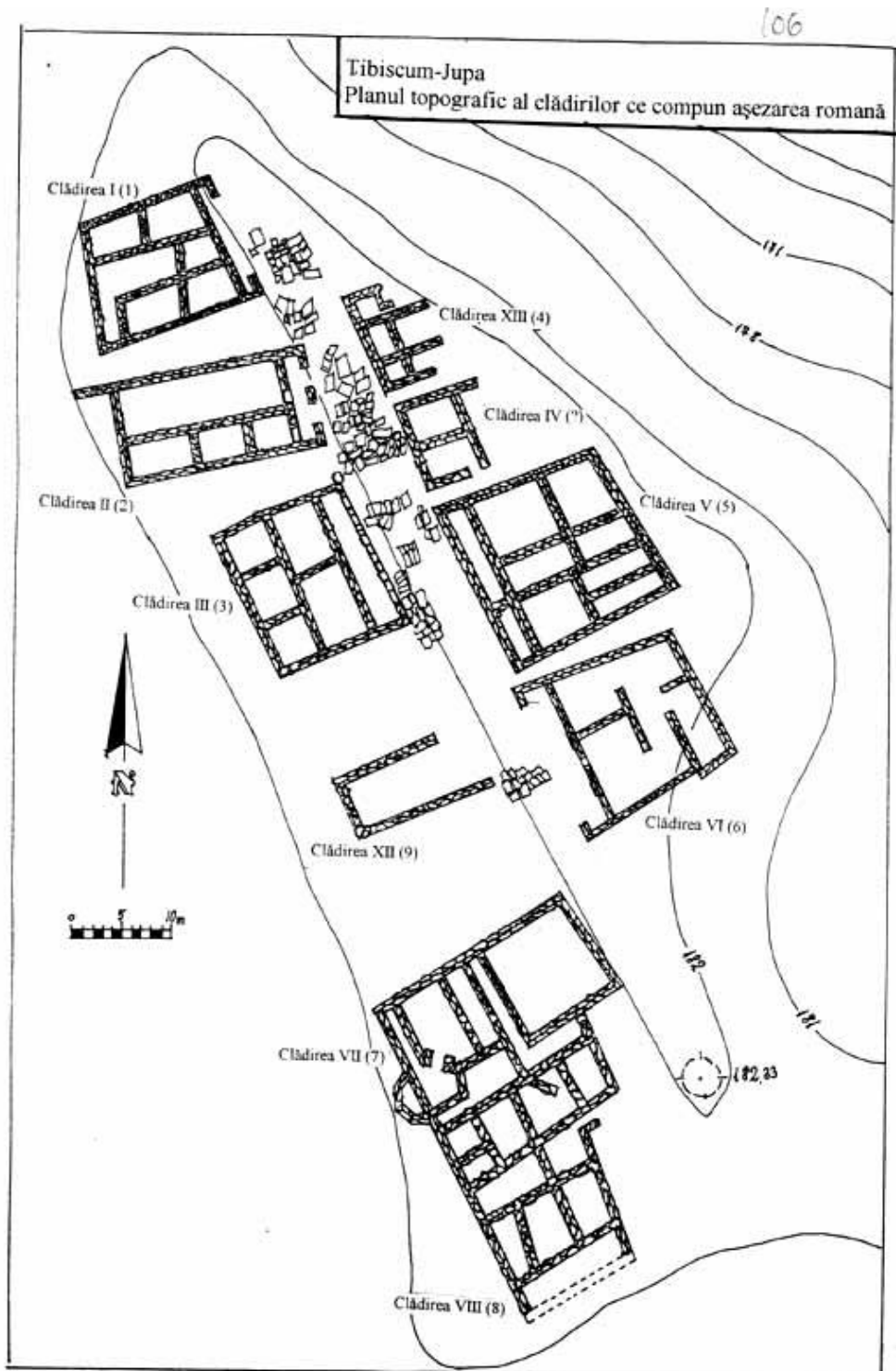


Figure 21 The civil settlement in Tibiscum (vicus). Map published in "Cronica Cercetarilor Arheologice din România, Campania 2002", report n. 106.

The second and last fort of the axis was built in **Cigmau**. The fort is located near the nowadays villages of Bobalna and Geoagiu, on a top of a plateau overlooking the Mures valley. The site must have been known since the antiquity because the spot was named the “Giants’ fortress” by locals¹⁴¹⁰.

The fortress is still poorly known but it shows some very interesting feature: the plan is trapezoidal rather than rectangular, and the *castra* do not show the usual tripartite division¹⁴¹¹. The *principia*¹⁴¹², showing some interesting features as well, and two large *horrea* are known from the site, no traces of metallurgic activities nor potential *fabricae* have been signalled. It is however interesting to note that a *double horrea* indicates a logistic purpose of the fort: the *castra* were located 40 km from Micia, and 45 to Apulum, it is possible that the area was used to store supply to allow troops to move faster in both directions.

The first *horreum* presents large dimension of 29 x 17,5 m, doubling the surface of an average military granary. The second *horreum* is located near the first structure, the complex constituted by the *principia* and the two granaries do not follow the usual parallel disposition of a Roman military camp. The structure presents smaller dimension (28,5 x 10,5 m) and typical plan and sizes. It seems however to have had a heating system under the floor. Traces of another building with buttresses have merged in 2004 near the *principia*¹⁴¹³. Considering that the two already excavated *horrea* cover an unusual large surface of 800 squared meters, Marcu has judged that a presence of a third *horreum* would be considered as a unlikely possibility¹⁴¹⁴.

If Cigmau was indeed a logistic hub, it could have stored much more goods in order to supply troops moving north from the Danube or detachments of the Dacian army moving south.

12.4 - Mures Axis.

Dacia Superior Mures Sector is arguably the most mysterious sector of the Dacian *limes*. In Gudea scheme, the I sector is represented as a line of fortifications and *castra* that overlooked the Mures river, extending the provincial area to the west and guarding one of the most strategic access route for whoever entered the province from the southern Pannonian plains. Because the line has been considered part of the Dacian borders, the existence of the sector II from Partiscum to the Danube was theoretically previewed to complete the perimeter.

¹⁴¹⁰ Marcu 2009 p. 122.

¹⁴¹¹ Hanson-Oltean 2003 pp. 103-109.

¹⁴¹² Marcu 2009 pp. 123-124.

¹⁴¹³ About the *horrea*, see the report published 2005 on the campaign of the previous year:

<http://cronica.cimec.ro/detalii.asp?k=3130>

¹⁴¹⁴ Marcu 2009 p. 127.

However, no forts nor military bases have been identified along this sector II. More recent studies have indeed placed Dacian borders on the Arcidava line and consequently considered the Mures axis as a military guarded road.

It is however unclear when the fortlets along the ancient Marisus were built, how long they remained in function and which units were garrisoned along the line. It is assumed that vexillationes from Dacian legions and auxiliary cohorts. Furthermore, a series of multiple and long linear defences oriented North-South have been spotted on the terrain, but no data have emerged by archaeological investigations: it is unknown when these *valla* have been built, by who or with which purpose.

The Mures valley represented for sure a very important road, one of the most important to enter the Transylvanian plateau from the west. The military base at Vetel, the only fort from where we have enough information, was incredibly large and occupied by a particularly strong garrison. Evidently, the site held a high strategic value for the imperial administration. Marcu has even argued that the fort at **Vetel/Micia** was the most important military site of the whole South West Dacia together with Tibiscum¹⁴¹⁵.

The dimensions of the fort are impressive (360x181 m) and the *castra* covers 6,51 ha. The nearby *vicus* is estimated to cover other 25 ha¹⁴¹⁶.

The site is known since a long time, but it remains globally poorly known. The Roman fort was exploited as a quarry during the centuries, and many monuments and inscriptions were re-used or sold to collectors. The site did not fail to attract the interest of scholars and amateurs in this sense. It was only at the beginning of the 20th century that modern archaeological investigations began, but after the campaigns of Daicoviciu (1929-1930) and Floca (1935, 1939, 1947-1948) they became more sporadic. Researches continued until the 1980s and, after more than twenty years, the site was re-opened to archaeological investigations at the begin of the new millennium¹⁴¹⁷.

Despite all, the internal plan of the fort is largely unknown and only a *horreum* has been surely identified¹⁴¹⁸. It is supposed that the fort was destroyed a first time at the mid of the 2nd century AD, possibly under the reign of Antoninus Pius, and subsequently rebuilt in stone the decades after. The *cohors II Flavia Commagenorum sagittaria equitata* was stationed in Micia since the time of Hadrian, when its presence is confirmed by an altar dedicated to the emperor¹⁴¹⁹. The

¹⁴¹⁵ Marcu 2009 p. 143.

¹⁴¹⁶ Floca-Marghitan 1970 pp. 43-57.

¹⁴¹⁷ Petculescu 1981 p. 109. See also Alicu 1998 pp. 401-426.

¹⁴¹⁸ Petculescu 1987.

¹⁴¹⁹ IDR III/3, 51 = CIL 3, 1371. See also Țentea 2012 pp. 45-52 regarding the history of this unit.

presence of the *ala Hispanorum Campagonum* is sure at least for the 3rd century¹⁴²⁰, when the cavalry units shared the *castra* with the infantry cohort and the *numerus Maurorum Miciensium*, also epigraphically attested in the fort¹⁴²¹. It seems logical to presume that such a strong garrison needed some logistic facilities but unfortunately the archaeological situation is still largely unclear¹⁴²².

The finding of an unfinished fibula in the *vicus* has been interpreted as the proof of a bronze working facility *in situ*¹⁴²³. Few years later, a combustion structure associated with remnants of bronze working activities have been found, confirming the presence of a workshop in the civil settlement. The structure has at least one side of 1,5 m, a clear alimentation channel (0,6 x 0,5 m) and an aeration channel. The structure appears to have remained in activity for a long time (170 – 270 AD apparently, so it is in phase with the construction of the stone fort) and it is associated with casting moulds and metal slags. Nearby the facility, a small wood barrack was apparently used as a storage room: numerous animal bones have been found in it, probably used in metallurgic activities; crucibles and pieces of military equipment¹⁴²⁴.

The advantageous strategic position, the strong garrison and the good connections with Dacia Superior mining district could have brought to the creation of a large logistic hub in Micia. As similar large fort on the frontier, the *castra* worked both as a guard post to defend a main access to the province and as strategic platform from where it was possible to launch large scale operation into the *barbaricum*.

On the other hand, as it appears from the similar case of Porolissum, being the site exposed to external threats, it is possible that key-logistic facilities were located rather more internally in the province. Apulum and Sarmigetusa were indeed not very far, both sites could have host larger workshops for the production of military equipment exploiting the very same mining basin for raw materials.

The case of Micia is noteworthy nevertheless since it clearly attests that workshops in *vici* could work for local military units, both repairing and apparently producing military equipment. Despite no important traces of metalworking have emerged from the *castra*, it is interesting to note that a military workshop was indeed active inside the military base. The finding of a huge

¹⁴²⁰ IDR III/3, 56, 57, 59, 60, 65, 75, 77, 172, 183; IDR III/3, 38a, 196.

¹⁴²¹ IDR III/3, 47.

¹⁴²² Benea 2008a p. 113 quotes Matei-Bajusz 1997 *passim* (sic) regarding the potential presence of military workshop inside Micia fort, but the quoted publication is about Romita-Certiae. The reference results therefore unclear.

¹⁴²³ Rădeanu-Cociş 1999/2000 pp. 205-209.

¹⁴²⁴ Report in the *Cronica Cercetarilor Arheologice* 2004 and 2005: Petculescu 2005 pp. 403-404; Petculescu 2006 pp. 403-404 (published also online but not in the RAN: <http://cimec.ro/Arheologie/cronicaCA2005/cd/index.htm> (2005); <http://www.cimec.ro/arheologie/cronicaCA2006/cd/index.htm> (2006).

quantity of bow stiffeners in Micia, with many unfinished pieces among them, confirms that a manufacture for this very specific piece of equipment was active there at least during the last phase of the fort (until 270 AD)¹⁴²⁵.

Bow stiffeners were essential elements of the composite bow, the deadly weapon in use among the eastern archers in the ancient world. It was an expensive weapon very effective on the battlefield, but it required also a set of specific skills to be used and to be crafted. Evidently, the workshop functioned for troops of eastern archers garrisoned in Micia, but the large production could perhaps indicate that the site served a larger area.

12.5 - The East Flank.

The defence of the eastern part of Transylvania was entrusted to a series of fort extended from Brancovenești in the north to Sanpaul. As for the Dacia Porolissensis, the sector has not been extensively excavated.

Branconvenești is located more in the north. It is however unclear if the fort was part of Dacia Porolissensis or was already in Dacia Superior. The fort was garrisoned by an *ala I Numeri Illyricum*, a troop otherwise unknown in military diplomas from Dacia, but that have left some stamped building materials in the fort bearing the acronym ALNILYR. It is unclear if the use of the term *numerus* in this case corresponds to a vexillation from another unit, but it would be rather unusual that a detachment has remained for such a long time far away to its mother-unit to become the permanent garrison of a frontier base, or that the cavalry unit was one of two units originally recruited in the Illyricum. Since the second unit is recorded in Dacia Superior, it is possible that the fort belongs to this province¹⁴²⁶.

Forts earlier phases can be dated to Hadrian, when the fort was originally built with perimetral earthen *valla* with palisades on top. It was subsequently rebuilt in stone (177 x 144 m). Interestingly, the western wall was reinforced with buttresses.¹⁴²⁷ Unfortunately, the site had been extensively exploited as stone quarry during the centuries, seriously impacting on the conservations of the ruins and spoiling the area of many important epigraphic documents and monuments, both re- employed or displayed in many villas and castles in the area¹⁴²⁸.

¹⁴²⁵ Petculescu 2002 pp. 765-770. For similar pieces see Dinulescu 2010 pp. 145-155.

¹⁴²⁶ See the discussion in Protase – Zrinyi 1975 pp. 62-69 in particular.

¹⁴²⁷ Marcu 2009 pp. 118-119.

¹⁴²⁸ Protase-Zrinyi 1975 p. 58.

Almost nothing is known of the internal plan. A building interpreted as a *valetudinarium* has been however signalled *in situ*, but it is unclear on which base the function of the building has been identified¹⁴²⁹.

A more consistent cluster appears between the fort at **Sarateni** to **Sanpaul**. Globally, the whole sector is poorly known.

The fort at **Inlaceni** had benefitted of limited archaeological campaigns. At the present state of research, it is known that the small fort (142 x 146 m) was occupied by the *cohors VII Raetorum quingeneria equitata* at the beginning of the 2nd century AD but the troop was later by the *cohors III Hispanorum quingenaria equitata*. The change took place possibly during the reign of Antoninus¹⁴³⁰.

The *cohors I Alpinorum* is also attested by bricked stamps and tiles, but it is possible that the cohort stationed in Sarateni and Călugăreni: soldiers of the *I Alpinorum* could have shared building materials in certain occasions. Only the *principia* are partially known from the site¹⁴³¹.

The fort at **Călugăreni** has been interested by recent excavations, that have targeted the internal space of the fort and the nearby civil settlement as well, revealing a thermal complex also¹⁴³².

It is noteworthy to signal that a potential artisan districts have been identified in the *vicus*, not far from the fort itself. The structure has not been fully excavated yet, but geophysical prospections and preliminary results (that are still unpublished) have highlighted the possible presence of dense concentration of metal slags and objects. I'm grateful to dr. D. Nyulas and dr. B. Burkhardt for the information.

No data regarding internal plan are known from Odorheiul Secuiesc nor Sanpaul.

Traces of a Roman fort have emerged also in **Sighisoara**, on the same line with Odorheiul Secuiesc. The camp was apparently short-lived, and it was soon abandoned. It was subsequently reoccupied by a civil community¹⁴³³. It is interesting however to note that traces of some kind of metallurgic activities have been found in the earthen vallum of the fort: it is possible that a small facility functioned during the construction period of the base, possibly to

¹⁴²⁹ Petolescu-Corcheș 2002 pp. 120-126.

¹⁴³⁰ Macrea 1960 pp. 343-344; Gudea 1979b pp. 171-172.

¹⁴³¹ Gudea 1979b p. 173.

¹⁴³² Reports published by Man in 2014 (<http://cronica.cimec.ro/detaliu.asp?k=5309&d=Calugareni-Eremitu-Mures-Castrul-roman-termae-si-vicusul-militar-2014>), 2015 (<http://cronica.cimec.ro/detaliu.asp?k=5477&d=Calugareni-Eremitu-Mures-Castrul-roman-termae-si-vicusul-militar-2015>), and 2016 (<http://cronica.cimec.ro/detaliu.asp?k=5697&d=Calugareni-Eremitu-Mures-Castrul-roman-termae-si-vicusul-militar-de-la-Calugareni-2016>). See also Panczel – Mustata -Dobos 2018 13-20. It is possible that the *coh. I Augusta Ituraeorum* stationed there, while the *coh. I Alpinorum* just sent building materials for the fort.

¹⁴³³ Marcu 2009 p. 155.

produce nails and other building materials¹⁴³⁴. Globally, the eastern flank presents scarce useful information for the present work. It seems that cavalry units were particularly frequent along the eastern border of Dacia, possibly to match the Sarmatian counterpart.

Because to the lack of data, it is impossible to appreciate the extent of metallurgic activities in this cluster. The military network continued south with the forts under the supervision of Dacia Inferior governor.

12.6 - The Inner Core.

Unfortunately, the inner core of Dacia Superior is the less known part of the provincial military network.

The intermediary line imagined by Gudea comprises just one fort in Dacia Superior, though an important one: the *castra* at **Razboieni** garrisoned by the *ala I Batavorum milliaria*. The fort was located between Apulum and Napoca, roughly on half-way from one city to the other¹⁴³⁵.

The site has been briefly excavated in 1995-1996 but just few trenches have been opened inside the *castra*¹⁴³⁶. The dimensions of the fort are not precisely known, it is supposed that the *castra* covered an area of 3,89 ha (175 x 220 m) but the figure is based mostly on the two sides partially uncovered. The fort was originally built with earthen *valla* with palisades on top to be later reconstructed with a stone curtain. The chronology of the two phases is however unclear¹⁴³⁷. If the measures are correct, the fort would have been not large enough to garrison an *ala milliaria*, a cavalry unit that required roughly 6 ha¹⁴³⁸.

Nothing is known from the internal plan except for some buildings located near the *via sagularis*, possibly barracks. It is however noteworthy to signal that constructions of the earlier phase was extended to partially overlap the wall street. No traces of metallurgic activity have been noted in the area.

Unfortunately, the great fort of the *XIII Gemina* at **Apulum** is poorly known as well. The name is of Dacian origins: a large Dacian fort was indeed located roughly 20 km the Roman Apulum¹⁴³⁹.

¹⁴³⁴ Mitrofan-Moldovan 1968 p. 103 in particular.

¹⁴³⁵ Marcu 2009 p. 152.

¹⁴³⁶ Reports published online: <http://cronica.cimec.ro/detaliu.asp?k=168> (1995) and <http://cronica.cimec.ro/detaliu.asp?k=345> (1996).

¹⁴³⁷ Bota-Ruscu- Ruscu- Ciongradi 2004 pp. 291-300.

¹⁴³⁸ Marcu 2009 n. 1015.

¹⁴³⁹ Găzdac-Suciu- Găzdac 2009 p. 1.

Administrative capital of Roman Dacia, in Apulum the highest political authority and military power of the region was gathered.

The site was chosen as the provincial governor seat¹⁴⁴⁰ since the earliest organization of the province and there stationed the *XIII Gemina* legion immediately after the fall of Decebalus' kingdom. An impressive quantity of epigraphic documents and archaeological findings confirm the importance that the area had for the history of Roman Dacia.

Apulum rapidly became one of the largest and richest urban settlement of the province. Originally, the *canabae* appeared as a *pagus* of Colonia Ulpia Traiana Sarmizegetusa but the settlement reached the municipal status already under Marcus Aurelius and it later became *Colonia Aurelia Apulensis* possibly under Commodus¹⁴⁴¹. The proximity of the gold mining district of Rosia Montana surely boosted the economic development of the area and Apulum played an important role in assuring the exploitation of the gold mining area¹⁴⁴².

Unfortunately, archaeological data on the Roman town are largely missing. The medieval and modern city of Alba Iulia was born on the Roman site, effectively obliterating large portions of the ancient city. The legionary *castra* suffered a similar destiny, and a large Austrian fortress was built on the spot. Nowadays, the archaeological data are limited to few element of the stone curtains and the approximate dimensions of the *castra* and the civil settlement¹⁴⁴³. No traces of metallurgic activities have emerged insofar. Despite the quantity of information available is limited, it is possible to reach interesting conclusions, nevertheless.

The "iron heart" of Dacia was indeed well guarded by strong military contingents. The *XIII Gemina* legion remained for almost fifty years the strongest unit in the province, being later matched only by the *V Macedonica* moved into Potaissa. The legion served as strategic reserve for the whole province but also as sort of personal bodyguard for the provincial governor, to whom it also provided the officers of his personal retinue and general staff.

The *ala I Batavorum milliaria* was not however a unit of secondary importance. Auxiliary units recruited among Batavians were highly reputed in the imperial army and considered as élite units¹⁴⁴⁴.

¹⁴⁴⁰ The palace of the provincial governor has been recently brought to light. See Rusu-Bolindeț 2019 pp. 97-120.

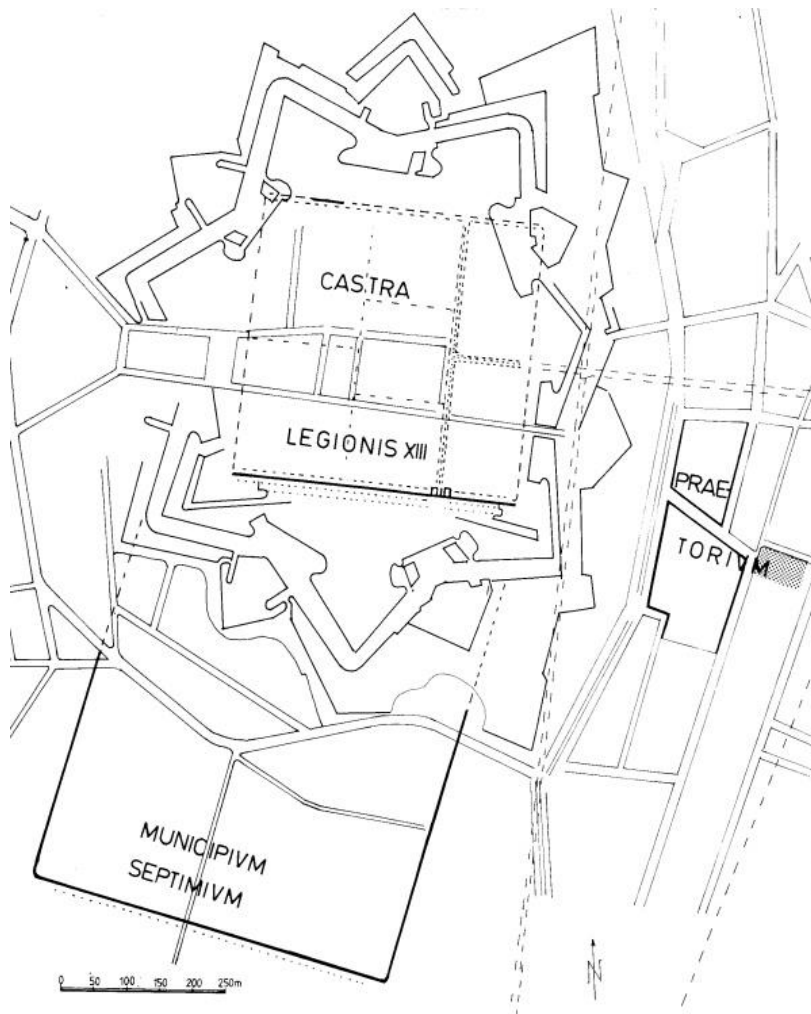
¹⁴⁴¹ Ardevan 1998 pp. 45-50.

¹⁴⁴² The *XIII Gemina* protected the gold mining area (Țentea 2009 pp. 371-381) and assured administrative personnel (CIL 3,1309). See also Găzdac-Suciu- Găzdac 2009 p. 1: *canabae legionis* were in charge with the contracts on slave trade destined to provide workforce to the gold mining area.

¹⁴⁴³ See Moga 1987 pp. 157-168; Diaconescu-Piso 1993 pp. 67-82; Ota-Floerscu 2016 pp. 205-234.

¹⁴⁴⁴ Hyland 1993 p. 128, Saddington 1975 p. 179. See Roymans 2004 and Nicolay 2007 in general.

If we consider that Razboieni guarded the route towards the northern part of the province, the large forts at Micia and Tibiscum overlooked respectively the south and west, it appears clearly that the legionary base was located at the centre of a particularly strong militarized area, when specialised units (*numeri palmyrenorum* and *maurorum*) and élite cavalry formations (the *ala I Batavorum*) were deployed.



This central cluster had the potential to form the most warlike core of the provincial army: a concentration of the strongest units of the area around which it was possible to arrange the rest of Dacian military forces.

Apulum represented the administrative element of the system and it is highly possible that a large part of the provincial logistics was concentrated in the area.

A very interesting inscription, unfortunately lost nowadays, attested the presence of *negotiatores armorum* in Apulum: civil entrepreneurs that

possibly worked to provide weapons and armours to the imperial army¹⁴⁴⁵.

In Apulum was indeed concentrated the provincial administration that managed and had easy access to key natural resources (wood, iron ores), it is extremely possible that this important settlement played an important role in Dacian military logistics.

¹⁴⁴⁵ CIL 3, 1121 (p. 1390) = IDR III/5-1,285.

A bureau of the *portorium Illyrici* is also attested in Apulum¹⁴⁴⁶. Considering the economic relevance of the nearby mines, it seems evident that the imperial administration intended to control and regulate the traffic of goods from and to the area. At Drobeta, where a similar situation is known, the presence of *portorium Illyrici* office is matched with a well attested artisanal presence and strong traces of metallurgic activity.

In comparison, the fort at Razboieni does not present any specific reason to be considered a logistic hub: halfway two of the most important cities of the province, easily accessible from south and north, the cavalry unit could be easily supplied from elsewhere.

The position of an *ala* in this intermediary sector is not surprising, as it has been shown before, and in similar cases relatively abundant traces of metallurgic activities (bronze working in particular) have emerged.

The higher frequency of manufacturing activities could be perhaps explained with the need of animal care and the specific equipment in use among Roman cavalrymen. There are no reasons to presume that the situation in Razboieni would have been different.

¹⁴⁴⁶ IDR III/5-2, 702.

Appendix II: Facing the Steppes.

Possible Military Workshops of Dacia Inferior.

As it has been detailed in the previous chapters, the province of Dacia Inferior was not part of the original province of Dacia as it was created by Trajan. Like the Dacia Porolissensis in the north, that was carved in the north corner of Transylvania, the procuratorian province of Dacia Inferior (later known as Dacia Malvensis from Marcus Aurelius onwards) was a creation of Hadrian times. The new province was formed from what remains of the territories occupied by the Moesia Inferior army north the Danube and put under the authority of its governor in the aftermath of the Second Dacian War. The region, roughly stretched from Drobeta to the Transalutanus line, was maintained by Hadrian, who decided to abandon the rest of Moesia Inferior occupied territories north the Danube, and reorganised to fit the new asset of the whole sector.

Overall, the military network of Dacia was organized along two main axis, generally known as the *limes Alutanus*, along the nowadays Olt river, and the *limes Transulatanus*, further east.

The area between these two lines was scarcely populated and inhabited, it seems that the region functioned as a sort of buffer zone¹⁴⁴⁷. A cluster of forts defended the south-east slope of the Carpathians, effectively completing the perimeter of the province.

The military network was mainly intended to overlook the major communication routes of the area. Patrolling the border was apparently an important duty of Dacia Inferior army, whose soldiers were scattered along these lines and generally stationed in small *castra* to assure a capillary presence all over the provincial frontiers¹⁴⁴⁸.

Cavalry *alae* and mounted troops were particularly numerous in the area, possibly because soldiers needed a certain mobility to move along the frontier and probably also because the sector was particularly exposed to Roxholans' attacks and raids. The strength of cavalry contingents in service of Dacia Inferior army was probably a countermeasure to match the fast and powerful horsemen fielded by the Sarmatians settled in the eastern plains¹⁴⁴⁹.

From an archaeological point of view, Dacia Inferior military network is not particularly well known. Many forts and military installations have been only superficially explored and for many other *castra* there are no information at all.

¹⁴⁴⁷ See in general Teodor 2013 about the Alutus and the Transalutus lines.

¹⁴⁴⁸ Vlădescu 1986b pp. 13 and ff. in general.

¹⁴⁴⁹ Cataniciu 1997b pp. 101-107.

Metallurgic activities are scarcely attested in the area, with only fable traces attested in Feldioara, Racari and Slaveni.

A couple of forts presents however some building that may have been military workshops: these structures can provide a useful comparison for plans and dimensions of *fabricae* in Roman Dacia.

Slaveni arguably represents the most interesting case and the fort presents indeed many interesting features. The area was researched since the 19th century, when Tocilescu and Polonic¹⁴⁵⁰ carried archaeological investigations in the fort, and it has subsequently benefitted of extensive campaigns between the 1962 and 1975 under the supervision of Tudor¹⁴⁵¹. The internal plan of the fort is globally well known. Emergency excavations have been performed in more recent years in the area with more limited results¹⁴⁵².

Curtain defences have two phases as usual. The fort was built at the beginning of the 2nd Century AD with the contribution of numerous units and legionary *vexillationes*, whose contribution is known thanks to the stamped building materials, with earthen *valla* with palisades on top¹⁴⁵³. The second phase can be dated to the 3rd century AD, when the curtain was rebuilt with bricks possibly under Septimius Severus¹⁴⁵⁴. An inscription found in porta *praetoria* has been interpreted as the proof that the *ala I Hispanorum* had worked on the curtain at that date, but doubts have been raised: the epigraphic document attests rather that the unit had repaired something inside the camp, not necessarily that the *castra* were rebuilt completely in that occasion¹⁴⁵⁵. The chronology of the 2nd phase has been rather framed on the base or archaeological data.

The camp covers a relatively large area (190 x 169 m) despite having been garrisoned by the *ala I Hispanorum* that was probably just a *quingenaria* troop¹⁴⁵⁶. The surprisingly large dimensions of the fort can be explained considering the oddly large *viae* inside the *castra* and the large space left completely open in the *latus dextrum*: the unusual arrangement was specifically intended for a cavalry unit, whose animals can benefit of the large spaces to train and move during

¹⁴⁵⁰ Published by Tocilescu in Romanian Academy Annuary, tome XVIII, 100–1 and Tudor 1940, 34–8.

¹⁴⁵¹ See Tudor 1978 pp. 302–307.

¹⁴⁵² Campaigns under the supervision of Bondoc: report 2007 <http://cronica.cimec.ro/detaliu.asp?k=3982> and report 2008 <http://www.cimec.ro/Arheologie/cronicaCA2009/cd/index.htm>. See also Tudor-Popilian-Bondoc-Gudea 2011 in general.

¹⁴⁵³ Tudor 1978 p. 302.

¹⁴⁵⁴ CIL 3, 13800 = IDR II 496.

¹⁴⁵⁵ The *ala I Hispanorum* built also a *basilica* inside the fort at the beginning of the 3rd century: IDR II, 499.

¹⁴⁵⁶ See Marcu 2009 pp. 235–237 for a brief account.

the day. The largest roads were not matched by a superior space destined to men and animals, with stables probably built at the corner of the camp¹⁴⁵⁷.

Principia, barracks and a *horreum* are relatively well known and fairly standards¹⁴⁵⁸. The *praetorium*, on the other hand, presents a rather unusual plan with multiple rooms arranged around a narrow central hallway¹⁴⁵⁹. In *latus dextrum*, a peculiar building has been found. Dimensions have been reported in unclear way, the structure oscillates between 18x22 m and 27x13 m. The plan presents an “unpartitioned central lobby” flanked by four rooms for side with other two large rooms on the backside¹⁴⁶⁰. The plan is consistent with functional military buildings, a *valetudinarium* for instance, the availability of water in the building, attested by water lead pipes, seems indeed to point to a workshop, as it has believed by Marcu and Benea¹⁴⁶¹. Benea in particular has proposed that the structure produced bronze arrowheads of a type particularly popular in the province¹⁴⁶².

The plan is indeed rather simple, and comparisons are possible for both cases. It is noteworthy to signal that this potential workshop functioned once more in a cavalry base planned and realised since the beginning to garrison an *ala* of horsemen. Since relevant traces of metallurgic activities have been often found elsewhere in association with mounted troops, it is possible that the structure was indeed a military workshop, necessary to produce horseshoes and saddle elements for the local garrison.

Less clear is the plan of the potential *fabrica* identified in **Bivolari**, ancient **Arutela**, although in this the presence of crucibles and metal slags seems to confirm the identification. The fort was built along the Olt, and unfortunately roughly half of the site had been destroyed by the river during centuries. Archaeological excavations, that began in the end of the 19th century, were able nevertheless to recover 5 buildings from the preserved part¹⁴⁶³. The total dimensions of the fort are unknown. Approximately 60 m of the north east part of the curtain have been entirely preserved but the overall dimensions of the *castra* must have been relatively limited¹⁴⁶⁴.

¹⁴⁵⁷ Tudor 1978 p. 304, Marcu 2009 p. 226.

¹⁴⁵⁸ Tudor 1978 pp. 306-307.

¹⁴⁵⁹ Tudor 1978 p. 306; Johnston 1987 p. 136.

¹⁴⁶⁰ Tudor 1978 p. 306; Vladescu 1986 p. 33.

¹⁴⁶¹ Marcu 2009 p. 232; Hassal 1983 p. 105.

¹⁴⁶² Benea 2008b p. 380 quoting Petulescu 1991 pp. 35-38.

¹⁴⁶³ Vlădescu 1986, 46.

¹⁴⁶⁴ Marcu 2009 p. 178.

The curtain presents a series of internal buttresses, whose function is not completely clear¹⁴⁶⁵. The complex corresponding to the military *fabrica* has been identified in the *latus dextrum* but only on the base of few walls. The area covered was roughly 20 x 9 m, apparently with no internal division, but a crucible and slags from metallurgic activities have been found in place¹⁴⁶⁶.

Chronology of the fort is unclear, the *castra* have been presumably built in AD 138 and occupied by the *Surii sagittarii*: a small workshop could have therefore served the unit of eastern archers to produce arrow and to repair or maintain the recurve bow that was generally the weapon of choice of Levantine warriors.

The situation from the fort in nowadays **Rasnov** (ancient **Cumidava**) also not completely clear. A series of rectangular buildings, many of which had apparently no internal divisions, have been identified but the purpose of these structure is still debated.

The fort had relatively large dimensions. During the first phase, when the curtains was constituted by an earthen *valla* with a palisade on top, the fort was of 114x110 m¹⁴⁶⁷. The reconstruction of the curtain in stone correspond to an enlargement of the *castra*, that reached the dimensions of 124 x 118 m¹⁴⁶⁸.

The fort was part of the *limes Transalutanus*, but the chronology of its occupation is unclear. According to Gudea and Pop¹⁴⁶⁹, a certain discontinuity in the occupations layers can be appreciated: the fort was built and occupied initially under Trajan to be later abandoned and re-occupied only in the early 3rd century AD, when Caracalla visited the region and the *limes Transalutanus* was finally occupied by imperial forces. An auxiliary infantry cohort was apparently garrisoned here, but the nature of the troop is debated¹⁴⁷⁰.

The site, already identified during the 19th century, was systematically excavated only starting from 1939, when Macrea lead some investigations in the area, and later by Gudea and Mitrofan from 1969-1974¹⁴⁷¹. From 2006, archaeological campaigns have in particular targeted the praetentura area¹⁴⁷².

¹⁴⁶⁵ Vlădescu 1986 p. 51 has suggested that the buttresses were used as storage areas or perhaps stables.

¹⁴⁶⁶ Tudor - Poenaru Bordea - Vlădescu 1969, 22.

¹⁴⁶⁷ Gudea-Pop 1971 p. 14.

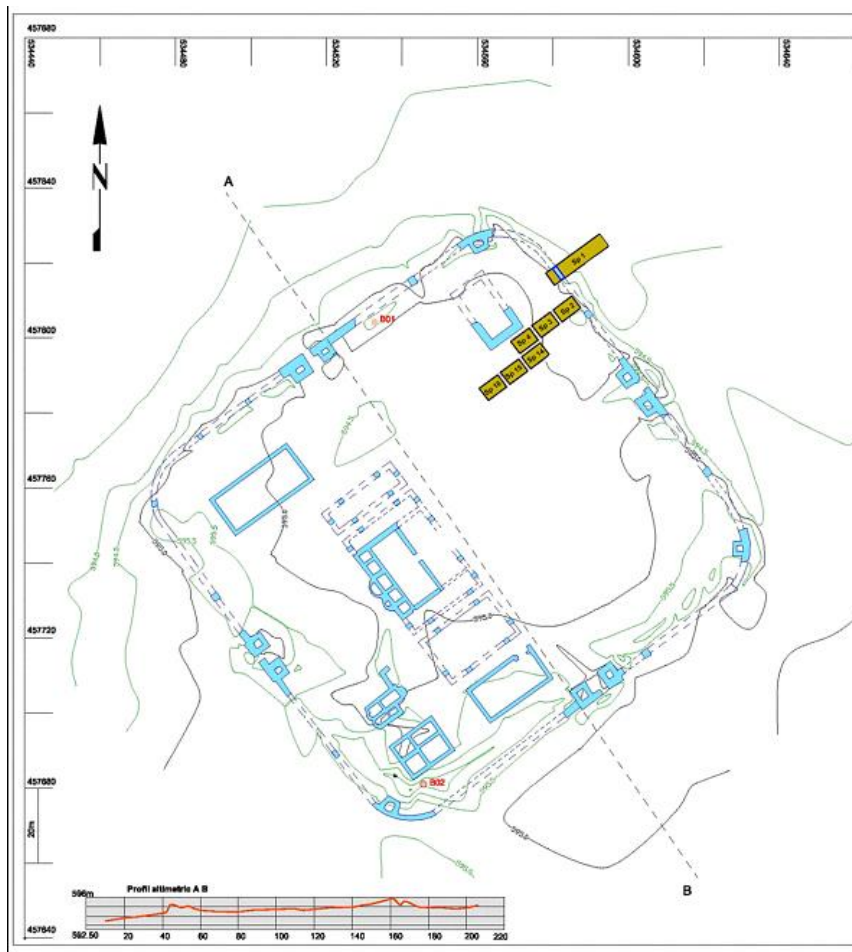
¹⁴⁶⁸ Gudea 1975b pp. 78-81.

¹⁴⁶⁹ Gudea-Pop 1971 pp. 60-63. See also Marcu 2018 pp. 205-226.

¹⁴⁷⁰ See Marcu 2018 pp. 213-218 for a summary of the debate in question.

¹⁴⁷¹ See Marcu 2018 pp. 205-206.

¹⁴⁷² See the RAN archive cod. 40376.1 for the most recent excavations (<http://ran.cimec.ro/sel.asp?descript=rasnov-oras-rasnov-brasov-castrul-roman-cumidava-de-la-rasnov-la-cetate-gradiste-erdenburg-cod-sit-ran-40376.01>).



Principia are located in the centre of the camp as usual¹⁴⁷³, with the *praetorium* identified in a 24x 16 m building right to the headquarters¹⁴⁷⁴. Near the *praetorium*, still in the *latus dextrum*, another rectangular building (Building C) of 20,5 x 10 m have been identified. Despite the absence of buttresses, the particular thick walls may have been strong enough to let the space be used as a storage room¹⁴⁷⁵.

In the *latus sinistrum*, another rectangular building of 24,75 x 11,8 m could have been

functioner as a *horreum* too¹⁴⁷⁶. The space dedicated to logistic purposes appears therefore relatively large. Two buildings of unclear purpose have been identified also near the southern corner of the *castra*, in the *retentura dextra*. The building B was much likely a bath facility, while the purpose of the nearby building A is unclear: the structure of 13,8x 10,5 m was divided in four contiguous rooms, no significant finding has been associated with the building¹⁴⁷⁷.

Building D (10,3 x 7,8 m)¹⁴⁷⁸ located in the *praetentura sinistra* and the so called "hospital" (25 x 13 m)¹⁴⁷⁹ located in the *retentura sinistra* have similar rectangular layouts with apparently no internal compartments. The function of these structures is unknown. All these

¹⁴⁷³ Gudea 1997b p. 66 mentions 2 distinct phases for the *principia*, but the information does not appear in other reports or study dedicated to the site.

¹⁴⁷⁴ Gudea-Pop 1973 p. 59.

¹⁴⁷⁵ Gudea-Pop 1971 p. 37.

¹⁴⁷⁶ Gudea-Pop 1973 p. 16.

¹⁴⁷⁷ Gudea-Pop 1971 pp. 30-32 (building A); Gudea-Pop 1971 pp. 33-37, see also Macrea 1944 p. 235.

¹⁴⁷⁸ Gudea-Pop 1971 p. 41.

¹⁴⁷⁹ Marcu 2009 p. 223.

structures present a relatively simple plan, compatible with different functional buildings: *valetudinaria*, *fabricae*, *storehouses*. Further archaeological excavations will precise the internal plan of these buildings, possibly allowing to identify the proper function of each facility.

Despite a workshop has not been located, it is possible that a military *fabrica* functioned in the camp and possibly in one of these rectangular buildings. A fragmentary crucible, with traces of bronze inside, has been found near *porta praetoria*¹⁴⁸⁰ but the piece cannot be associated to any structure. It is also unclear if the crucible pertains to an earlier or later phase of the camp. In 2015, in the sector Sp. – 36 opened near the *via sagularis* in the *praetentura sinistra*, a kiln has been identified near a barrack complex¹⁴⁸¹. No findings have been published yet, the structure seems however to have functioned during the earliest stage of the fort. It could have been perhaps a temporary facility to produce building materials during the construction period.

This appendix is not intended to provide a complete and exhaustive sketch of the situation in Dacia Inferior, but few conclusions can be reached, nevertheless. Originally part of Moesia Inferior, the area probably maintained stronger contacts with southern provinces across the Danube. The military network appears indeed to have been organised along the Alutus river with a series of relatively small forts. Local defences lacked the complexity in organisation and disposition of the other Dacian provinces, and it is possible that forts of Dacia Inferior were more dependent to external supply: *castra* are generally smaller and troops were possibly scattered around, being the patrol of the border the most important duty of the local sector. It appears unlikely that military bases of reduced sized were equipped with large logistic facilities.

Arguably less known from an archaeological point of view than Dacia Porolissensis and Dacia Superior, the area has provided scarce traces of metallurgic production. Besides some scattered findings, the few structure that could have actually functioned as military workshops present a simple rectangular layout, in the case of Slaveni with multiple rooms arranged around a central space. No one has been clearly recognised as a workshop, however.

It is noteworthy to signal that metallurgic activities have been especially noted in connection with a cavalry unit and a troop of eastern archer. The situation is similar to the one observed in the other two Dacian provinces, where workshops were apparently more active for *alae* and *numeri* than for auxiliary infantry cohorts. This peculiar pattern can be perhaps explained

¹⁴⁸⁰ See Petculescu 2006, archaeological report: <http://cronica.cimec.ro/detaliu.asp?k=3742>.

¹⁴⁸¹ Raport published by Petulescu 2015: <http://cronica.cimec.ro/detaliu.asp?k=5531&d=Rasnov-Brasov-Gradiste-Erdenburg-2015>.

considering the specific needs of both these types of units: cavalry contingents needed blacksmiths and workers to help the cavalrymen to attend their horses, possibly repairing and manufacturing horseshoes and saddle parts; eastern archers on the other hand had more specific needs in matter of equipment, and Levantine soldiers probably had skilled artisans at their own disposal to produce arrows and to repair or craft recurve bows.

It could also be considered that cavalrymen were employed on regular basis to patrol the roads and to carry other tasks inside the province, while archers possibly consumed arrows and projectiles at higher rate even in normal peacetime: the higher “consumption” of equipment require more frequent reparations and supply, and maintaining an active military workshop represented therefore the most obvious answer to these needs.

Appendix III: Cry Havoc.

Weaponry and fighting style in Roman Dacia.

It is generally assumed that a unit role on the battlefield was determined by its equipment. The assumption however is vaguely based on available historical narratives of battles, a type of document that could be heavily biased, on few technical treaties, and on common sense.

Furthermore, the available accounts are scattered among many centuries and sometimes apparently contradictory.

Auxiliary infantry cohorts, sometimes labelled as light or medium infantry in comparison with the heavily equipped legionary soldiers, were used to engage enemies' frontline during the battle of Gropius Mons, in the mid of the 1st century AD¹⁴⁸², and auxiliary units are more often depicted in close quarter combats than legions in the Trajan's column¹⁴⁸³. Contrary, legionaries formed the heavy centre of Arrian's formation in the *Contra Alanos*, where they were supposed to hold firmly against the charge of Sarmatian cavalry¹⁴⁸⁴.

Many problems and open questions appear indeed tied together. The nature of the field of battle could have dictated the tactical approach more than literary sources may suggest. Where the heavy infantry of legion could not perform at their best, such in difficult terrains like woods and thick marshes, the lightest and more manoeuvrable auxiliary units step in to form the main battle line.

Auxiliary units progressively replaced the old *velites* and other light compartment of the Roman army of Republic times, inheriting a similar role on the battlefield: they assured mobility and they filled many "support roles" (skirmishers, bowmen) to work together with the legions. To offer an alternative to the ironclad ranks of legion, auxiliary should have been equipped with a distinctive equipment. The debate is complicated by the relative paucity of archaeological findings and by the obscurity of figurative and literary sources in this sense.

It has been discussed for instance if the differences in military equipment between auxiliary and legionary soldiers as it is portrayed on the Trajan's Column should be considered

¹⁴⁸² Tac. Agric. 29-37.

¹⁴⁸³ Ogilvie-Richmond 1967 p. 272. In their commentary of Tacitus' *Agricola*, the two authors highlighted that auxiliary "light" infantry were generally used to open the fight and sustain the first frontline fight in many major engagements. This practice has been interpreted by some authors as ideologically linked to the practice of sparing Roman citizen soldiers (legionaries) as much as possible at the expense of auxiliary units.

¹⁴⁸⁴ Arrian *Contra Alanos* 1-9.

as a trustworthy depiction of how the Roman soldiers were armed at the time. Recently, Bishop and Coulston has proposed again that, at least at the beginning of the 2nd century AD, the auxiliary soldiers lacked the *lorica segmentata* that was wore by legionaries¹⁴⁸⁵.

Such a difference between weaponry style in various Roman army corps can-not appreciated, where the equipment appears to be much more standardized and it seems to confirm that process of transformation and simplification of soldiers' equipment was still ongoing at the time.

Auxiliary units, originally recruited to integrate fighting styles of different cultures in the imperial army, progressively lost their specialisations. Recourse to recruitment procedures on local bases contributed to loose the ties of a unit with the original cultural background: auxiliary units tended to recruit massively in the region they stationed in, embedding themselves into the provincial world during the centuries.

Furthermore, the differences in pay-scale between auxiliary and legionary forces seems to have faded away and it has been questioned in the most recent debate. While Speidel¹⁴⁸⁶ has concluded that legionaries soldiers were payed more than the auxiliary counterpart, implying that the old legions had maintained for long their superior status as élite forces, Altern has more recently argued that no difference can be appreciate in this matter: auxiliary units were no inferior soldiers, not even on the pay scale, and their different organization respected rather their different role on the battlefield than their inferior status¹⁴⁸⁷.

It is however true that if most of the close combat auxiliary cohorts had progressively lost the war and cultural tradition they had when they were recruited, while other more specialised units maintained their unique equipment. For instance, moorish troops were most likely equipped with javellins and fought as light cavalry in Dacia¹⁴⁸⁸. On the Trajan's Column, the Moorish cavalry lead by Lusius Quietus still appears lightly armoured, with small shields and throwing spears¹⁴⁸⁹. Similarly, Levantine warriors were famous for their prowess with bows and warriors from the east were frequently recruited as archers: in the Trajan's Column, eastern bowmen appear wearing their traditional conical-shaped helmet, resulting in this way clearly distinguishable among other Roman soldiers.

It is also known that Roman commanders favoured certain units in determined situation. Archers and javenlinmen were considered particularly useful against Germanic warriors,

¹⁴⁸⁵ Bishop-Coulston 2003 p. 208.

¹⁴⁸⁶ Speidel 1973 pp. 141-147; Speidel 1992 pp. 87-106. .

¹⁴⁸⁷ Alston 1994 pp. 113-123.

¹⁴⁸⁸Hyland 1990 p. 12; Hyland 1993 p. 70.

¹⁴⁸⁹ Their representation on the Trajan's Column match the description offered by Strabo 17,3,7. Rossi 1971 p. 104.

possibly because they generally lacked defensive weaponry¹⁴⁹⁰. Cavalry was instead preferred to match the higher mobility of Sarmatian tribes, known to field strong contingents of mounted troops and shock knights¹⁴⁹¹. It can be hard to appreciate if the Roman army in Dacia fully respected the “standard” during the whole period of occupation of the province, or if local troops developed a more peculiar approach to the battle.

Overall, the distribution of troops in Dacian provinces respected known principles of Roman tactics and strategy. Particularly high concentration of cavalry and mounted troops have been noted along the eastern borders of Dacia Inferior¹⁴⁹². The plains of Wallachia towards the east represented an optimal terrain for these kinds of units and the Sarmatian menace imposed specific counter measures. The Transylvanian plateau was apparently considered to be protected enough by the Carpathians and auxiliary units were just deployed in order to guard the mountain passes: cavalry units stationed in the intermediary lines of the Transylvanian plateau, no particular concentration of mounted units have been noted on this part of Dacia. Units of archers seem to have been concentrated in particular in Dacia Porolissensis and in the south-west corner of Dacia Superior, where their weapons proved vital to fight German warriors and the Iazyges tribes. Mounted archers were particularly frequent along the eastern frontiers of Dacia Inferior as well, where they served to patrol the lines along the Alutus and the Transaluts and where they could match the extreme mobility of Sarmatian cavalymen¹⁴⁹³.

Because of the few findings available in the area, and to the lack of data necessary to surely link offensive and defensive weapons to specific auxiliary units, it is hard to appreciate potential differences in equipment and fighting styles among other auxiliary formation in service of the Dacian provincial army.

As far as I know, there are no types of javelins that can be considered as specific of Moorish troops, but it is likely that North African warriors in Dacia, and the *numeri maurorum* in particular, had maintained their traditional combat style while deployed in the region. Few swords have been found in Dacia¹⁴⁹⁴ and apparently no specific type were developed or introduced in the region: each finding has solid comparison in already known weapons.

¹⁴⁹⁰ Herod. 7,2,1. In this sense role of skilled javelinmen, Moorish appear among the troops gathered by Severus Alexander (and later used by Maximinus Thrax) to wage war against the Germanic tribes.

¹⁴⁹¹ Eadie 1967 pp. 166-167 argues that cavalry (and heavy “shock” cavalry in particular) was further developed by the Romans to counter the aggressive tactics of Sarmatian tribes along the Danube.

¹⁴⁹² Cataniciu 1997 p. 105. See also Vlădescu 1974/1975 pp. 23-54.

¹⁴⁹³ Cataniciu 1997 pp. 105- 107

¹⁴⁹⁴ Gudea 1989a p. 578 7/6 Pl. 170/6 and Gudea 1996 p. 240 no. 9, pl. 65/9 (from Porolissum); Gudea 1989a pl. 179/12 (it is unclear if the sword, that was is part of a collection, has been found in Porolissum or in the fort of Tihău);

Weapons found in tombs and even in the *barbaricum* as proven an invaluable source to study the equipment used by Roman soldiers in the area, but no singularities have emerged¹⁴⁹⁵. Weapons in civil contexts far from *vici* and settlements connected to military forts appear to be rarer in Dacia, but sporadic pieces (arrowheads, daggers, spearheads) have been found in Sarmizegetusa and Ampelum, where military contingents were surely displaced to control the area¹⁴⁹⁶.

The most commonly attested offensive weapon attested in Dacia are spears and the functional couple of bow and arrows¹⁴⁹⁷. Spearheads of different shapes have been found in every fort in Dacia. Evidently, the weapon was largely in use among Roman troops all over the area and the frequency of findings have allowed to develop chronological seriation of known types for both weapons. It is impossible however to connect this seriation to an evolution of fighting styles. Apparently, different types of spearheads were simultaneously in use in a same unit. Probably, older equipment was kept and only progressively renovated, not substituted all in once from time to time.

Economic and logistic reasons partially explain the wider adoption of this weapon, but further reasons can be added. With the standardization of equipment and recruitment procedures, that favoured an approach more based around military bases rather than an ethnic one, training and fighting techniques became standardised as well.

Recruits of different origins and backgrounds were asked to fight as a unit and were trained by officers who could have been served in many different units, being transferred especially in case of promotions.

A relatively standardized equipment assured that training and fighting capabilities were rather homogeneous. In other words, a Roman soldier could share its own equipment with a comrade from another military unit without seriously impacting on his efficient on the battlefield: it meant easily conserving weapons from discharged soldiers or easily placing an order for weapon supply in every civil or military workshop of the empire. Modern army are characterised by this kind of resiliency as well, and commanders often prefer to rely on proven and trustworthy weapons when possible¹⁴⁹⁸.

Miks 2007 p. 845; Tudor-Poillian-Bondoc-Gudea 2011 p. 211; Petculescu-Barbu 2016 pp. 177-184 (Micia). Petculescu and Barbu mention also unpublished pieces from Potaissa and Cigmău (Petculescu-Barbu 2016 p. 179).

¹⁴⁹⁵ Petculescu 1999 pp. 895-905.

¹⁴⁹⁶ For instance, Ilieș 1981 pp. 413-423 (Ulpia Traiana Sarmizegetusa), Lipovan 1994 pp. 203-206 (Ampelum).

¹⁴⁹⁷ See Doru 1991 pp.34-51 and Doru 1992 pp. 5-26.

¹⁴⁹⁸ See in general Giacomello-Badialetti 2009 pp. 215 and ff. for a debate about weapons in modern and contemporary armies: how commanders and soldiers reacted to the introduction of a new weapon and why.

For many categories of military equipment (swords, helmets, armours), there are not enough archaeological data and findings to propose a chronological seriation¹⁴⁹⁹. Pieces or fragments of defensive weaponry are even more rare, and, with the notable exception of the Bumbesti bronze helmet, impossible to surely link to a unit or to a specific style of combat.

It could be generally assumed that Dacia provincial army underwent the same evolution of imperial military forces as the rest of the empire, mutating and evolving the military equipment accordingly. A few remarks are however of interest for the purpose of the present work.

A notable exception to this rule appears to have been the *cohort II Aelia Gaesatorum* enlisted as part of Dacia Porolissensis army and stationed in Bologa. The unit still bore the name of a revered “heavy spear”, the *gaesum*, in use among the Celtic population from which it was originally recruited¹⁵⁰⁰.

As far as the weapon had been described by ancient authors, the *gaesum* was at the same time a thrusting and a throwing weapon, suited to be used in close quarters fights and during the skirmishing phases that usually opened a battle. It is unclear if *gaesum*-type spearheads have been found in the site, the archaeological evidences for the use of this kind of weapon in Dacia are unconvincing. Even if this peculiar weapon still in use among the soldiers of the *II Aelia Gaesatorum*, the *gaesum* was used together with other types of spears.

It is more likely that the Celtic *gaesum* had lost its specific features at the time and it was used as more common polearm. The opposite case would imply that original Celtic fighting style would have been transmitted from one generation of soldiers to another regardless their ethnic origin, and that a local workshop would have produced this specific weapon for one unit only. It remains unclear how the *gaesum* impacted on practical bases, if it really made a difference on the battlefield or not. Beside spearheads, the most frequently weapons surely attested in Dacia are arrows.

Seriation for arrowheads have been proposed on the base of findings from specific fort, however, as in the case of spears¹⁵⁰¹, it is unclear if different types had different use on the field, nor if the variations implied a certain change in fighting style.

It is interesting to note that arrowheads have been found also in *castra* not occupied by specialised archer troops: bow were evidently a widely spread weapon all over Dacia. Vegetius confirms that legionaries were trained in the use of bow and sling, even if they fielded a

¹⁴⁹⁹ Chronological seriations are however possible at the level of the whole Roman empire: see Miks 2007 about sword blades.

¹⁵⁰⁰ Caes. *Bell. Gall.* 3,4; Verg. *Aen.* 8.661. Coussin 1926 pp. 214-217.

¹⁵⁰¹ Gudea 1991 pp. 69-80.

different role in battle¹⁵⁰². Auxiliary soldiers were probably trained in archery too. The sling was a very cheap and effective weapon, made only with few leather strips and that used projectiles made of stone or of pottery. In case of need, pebbles found on spot can be easily use with a sling. The bow was however much more expensive and heavier, and it required specially crafted arrows as projectiles to be use. It's wide distribution in Dacian area is significative and it could be understood as a confirmation that engaging Germanic or Dacian warriors from afar was the preferred approach in the area.

Bows could have been also useful to defend ramparts and fortifications in case of attack¹⁵⁰³. It is indeed unclear if soldiers trained to be close quarters infantrymen, as it is supposed that the vast majority of auxiliary cohorts were, used bows in action when they were part of a large army. Probably, when gathered together to form a stronger contingent, auxiliary cohorts maintained their primary role: *cohortes sagittariorum* fought as regimented archers, while other units engaged the enemy in close quarters fight. A deep difference existed however in the cultural status of archery between western and provinces of the empire.

European war cultures did not attribute an important role to the weapon, often disregarded as a humble piece of equipment and mostly used by lower classes. Thracian and Cretan archers, relatively highly reputed amongst the European *sagittarii*, used a longer weapon, mostly made on wood¹⁵⁰⁴. This bow was possibly too impractical to be used on horseback, and these warriors mainly fought as infantrymen.

The cultural status of the bow in the East was however much different: the recurve bow of oriental archers was a composite weapon, smaller but more powerful than the European counterpart, made by woods and bones glued together, particularly expensive to produce and therefore exclusively used by the wealthiest class of the society¹⁵⁰⁵.

Trilobate arrowheads are associated with this kind of weapon and are generally considered as a sure indicator for the presence of a contingent of eastern archers in a site¹⁵⁰⁶. A consistent amount of trilobate arrowheads have been found in Porolissum, where the numerus of Palmyrean archers were part of the permanent garrison, but the fort of Jidava has probably provided the largest quantity of this kind of arrows from all the Roman world: more than 400 trilobate arrowheads were conserved in the armamentaria of the fort headquarters¹⁵⁰⁷.

¹⁵⁰² Veget. Epit. 1,15 (bows and arrows) and 1,16 (slings).

¹⁵⁰³ Davies 1977 pp. 265-266.

¹⁵⁰⁴ Coulston 1985 pp. 288-289.

¹⁵⁰⁵ Feugère 1993 p. 212.

¹⁵⁰⁶ Jentea 2012 pp. 108-11.

¹⁵⁰⁷ Popescu - Popescu 1970 p. 257, fig. 12/2.

Eastern archers, of various origins and cultures, were particularly numerous in Dacia. Their arrival in the area can be traced back to the war against the Iazyges that dates to the beginning of Hadrian's reign: the emperor, who had maintained a very favourable attitude towards Palmyra during his rule, exploited his positive relations with the caravan cities to recruit numerous Palmyrene archers on the battlefield, and it is possible that Palmyrene warriors, who are recorded in military diplomas from the AD 120 onwards, received citizenship in behalf of their role in the war¹⁵⁰⁸.

It is interesting to note that the Roman interest for Palmyra apparently shifted from a purely economic consideration under Trajan to a predominant military focus under the rule of Hadrian. It has been proposed that the Palmyrene élites succeeded in matching the constant need of skilled soldiers of the empire providing well trained and well-equipped soldiers for the Roman army¹⁵⁰⁹. The involvement of Palmyrene élites granted to the city a privileged status and laid the foundations for the future prosperity.

Eastern archers likely maintained their own equipment and fighting style. Besides the recurve bows (attested only by bow stiffeners¹⁵¹⁰) and trilobate arrowheads, bowmen *ex oriente* still used conical bronze helmet, attested in Bumbesti and possibly also at Micia, where characteristic narrow cheekpiece has been found¹⁵¹¹.

It is unclear for how long this "levantine-style" equipment resisted to romanization and cultural hybridation processes. Surely, the precious recurve bow that distinguished these troops and made them valuable on the field was for long maintained as part of their equipment. Specialised workshops and artisans were therefore required. Bow-makers or eastern artisans are not epigraphically known, but I suspect that each unit had many craftsmen "attached" to it. It is also possible that civil artisans worked especially for these élite corps, following the soldiers if they were transferred elsewhere.

Numerous units of Eastern archers are known from Dacia:

- **Ituraens:** *cohors I Ituraeorum sagittaria equitata milliaria*¹⁵¹² attested in Dacia Porolissensis. *The Ala I Augusta Ituraeorum*¹⁵¹³, that probably remained in Dacia only temporarily, is interesting because it represents the only cavalry troop known to have been recruited among the Ituraens.

¹⁵⁰⁸ See Jentea 2012 pp. 371-378 for a discussion.

¹⁵⁰⁹ Seyrig 1941 p. 228.

¹⁵¹⁰ Petculescu 2002 p. 765.

¹⁵¹¹ Petculescu- Gheorghe 1979 pp. 603-606 (Bumbesti); Petculescu 2002 p. 129 (Micia).

¹⁵¹² Chirilă-Gudea 1972 p. 117; Gudea 1997c p. 24; ILD 635 (from Buciumi).

¹⁵¹³ Jentea 2012 pp. 31-34.

- **From Commagene:** *cohors I Flavia Commagenorum Sagittaria Equitata*¹⁵¹⁴, from Dacia Inferior; *cohors II Flavia Commagenorum Sagittaria Equitata*¹⁵¹⁵, from Micia in Dacia Superior.

- **Others:** *cohors I Sagittariorum*¹⁵¹⁶ attested in Tibiscum in Dacia Superior and at Drobeta.

Besides the auxiliary *cohortes*, *numeri* of eastern warriors are also known:

- *numerus Palmyrenorum* at Tibiscum (*Tibiscensium*¹⁵¹⁷) and at Porolissum (*Porolissensium*¹⁵¹⁸). A further *numerus Palmyrenorum O[...]*¹⁵¹⁹ is also known, the unit was probably garrisoned in Colonia Ulpia Traiana Sarmizegetusa,

- *numerus Surorum sagittaria*¹⁵²⁰ from Radacinești.

The distribution pattern of Eastern élite units clearly appears: strategically significant military bases (Micia, Porolissum and Tibiscum) where garrisoned with these formidable warriors, and forts that overlooked important inland routes where entrusted to auxiliary cohorts of eastern archers.

The purpose and nature of *numeri* in the imperial army remains however unclear and it is still debated. Apparently, they functioned as sort of parallel formations that maintained stronger ties with their native land, conserving in this way their specific fighting styles. Hypothetically, while auxiliary cohorts massively recruited in the region where they stationed, the *numeri* kept enrolling new soldiers from the mother land.

Numeri Palmyrenorum had indeed their own social structures, attested in the form of *scholae*¹⁵²¹, that functionally built a distinct identity for their warriors, and were often lead by members of Palmyra upper class.

Due to the epigraphic attestation of a *decurio* of the *numerus Palmyrenorum Porolissensium*¹⁵²², it is generally presumed that the *numeri* were relatively small unit of mounted archers (possibly with less cavalymen than an *ala* but with more mounted warriors than a *cohort equitata*). It should however be noted that available prosopography indicates that even the auxiliary

¹⁵¹⁴ IDR II, 382; IDR II, 528; ILD 164; Zahariade- Dvorsky 1977 p. 23; Zhararied—Lichiardopol 2006 p. 127; Bădescu 1981 p. 292.

¹⁵¹⁵ Gudea 1976 p. 518; Petolescu 1976 p. 397; IDR III/3, 197; Hügel 1996 p. 74.

¹⁵¹⁶ Drobeta: IDR II, 106; IDR II, 106b; IDR II, 106 c. Tibiscum: Flutur 1999-2000 p. 376. See also Bozu 1977 p. 316 about brick stamps from Zăvoi.

¹⁵¹⁷ IDR III,1, 256a.

¹⁵¹⁸ ILD 744.

¹⁵¹⁹ Țentea 2012 pp. 75-76 (ex Oriente ad Danubium).

¹⁵²⁰ IDR II, 383 (Romula); IDR II, 529 and IDR II, 530 (Slăveni).

¹⁵²¹ Marcu 2007 pp. 259-269.

¹⁵²² See the discussion in Southern 1989 pp. 102 and ff.

cohorts kept recruiting soldiers of eastern origins¹⁵²³, and the frequency and vitality of eastern cults¹⁵²⁴ in the area confirm that a constant flow of manpower and soldiers from Levantine provinces interested the Roman Dacia through all decades of Roman dominion.

The specific logistic need of these troops, and the possible presence of specifically skilled and trained artisans to satisfy the demand should be taken in account.

¹⁵²³ Jentea 2012 *passim*.

¹⁵²⁴ Jentea 2012 pp. 79-96-

Part III. Inference from Absence.

13. A Low Intensity Pattern.

Quality and quantity of available information is not only relatively limited for the area taken in consideration, but also data are also distributed in a non-homogeneous way. Dacia Porolissensis largely seems to be the most extensively indagated area, with a consistent number of forts intensively excavated or researched through the application of non-destructive techniques of prospection. Overall, the disposition of internal buildings remains only partially known in the majority of cases but the layout of several forts in the northern part is nowadays known, despite the lack of information from specific buildings or unknown or unclear stratigraphic relations between the various phases of the *castra*. In comparison, Dacia Superior seems to have benefitted of particularly frequent excavations in older times, but it is overall less known and arguably fewer teams are working on the fortifications of the area in more recent times. The most important data can be summarized in the following figures:

Dacia Porolissensis.

<i>Castra</i>	Sector	Cluster/Axis	Garrison	Storage Surface	Metallurgic Activities
Gilau	Area E - Intermediary	West Flank Cluster, Crisul Repede, second line.	Mounted Infantry (<i>coh. I Pann. p.f. eq.</i>) than cavalry Ala Siliana .	Not enough data.	Bronzeworking; combustion structures; workshop in praetorium,
Bologa	Area B – Sector V (Frontier)	West flank Cluster, Crisul Repede, first line.	Infantry , <i>coh. I Aelia Gaesatorum</i> .	Estimated less than average (1%). Average if considering building with unclear purpose (2%).	Bronzeworking, no structures associated.
Buciumi	Area B – Sector VI (Frontier)	Porolissum Cluster.	Infantry (<i>coh. II Aug. Nervia Pacensis mill.</i>) from Hadrian onwards.	Average, potentially more than average (3% or more).	Bronzeworking. Small workshop in building B5 (all phases?).

					Possible activities in B4.
Romita and Romanasi	Area B – Sector VI (Frontier)	Porolissum Cluster, Agrij Valley	Infantry(?) unclear.	Not enough data.	<i>Fabrica</i> -compatible structure in Romita.
Porolissum	Area B – Sector VI (Frontier)	Porolissum Cluster, Meses gate.	Infantry and mounted infantry? <i>coh. I Britt.; coh. V Ling.; coh. VI Thracum; Numerus Palmyrenorum.</i>	Possible logistic hub.	Bronzeworking in <i>castra</i> (?). Building C5-7. Bronzeworking in <i>vicus</i> .
Tihau	Area B – Sector VII	Almas Sector	Mounted Infantry (<i>coh. I Cannan. quing. eq.</i>).	Not enough data.	No traces, but more barracks than normal.
Caseiu	Area B – Sector VII	Somes Cluster	Mounted Infantry (<i>coh. II Brit. milliaria, than coh. I Brit. mill. eq.</i>).	Unclear, possible logistic hub.	Bronzeworking. Building X. Small workshop attached to praetorium.
Ilišua	Area B – Sector VII	Somes Cluster	Cavalry (<i>ala Tungr. Front.</i>)		Ironworking. Bronzeworking. No structure associated.
Gherla	Area B – Sector VII	Somes Cluster	Cavalry (<i>ala Pann. quing.</i>)		Metal slags. No structure Associated.
Potaissa	Area D – Core sector.	Central Cluster	Élite infantry (<i>V Macedonica legio</i>).		Bronzeworking. Ironworking. Ingot, recycling depot. No structure associated.

No traces of metallurgic activities have emerged in the forts of the east flank (Orheiul Bistritei, Livezile, Brincovenesti).

In few of the cases considered, forts do not present clear traces of metallurgic activities, possibly because of the limited extension of archaeological investigations, but structures with a plan compatible with a *fabrica*-building have been partially or entirely revealed: Romita (from LIDAR prospections), Tihau (more barracks than normal), Porolissum (despite its importance, data from Porolissum are unclear).

The Almaş sector is quite curious. No data regarding metallurgic activities are known from Sutor, while in Tihau it is possible that a workshop had functioned in one of the barrack in excess in a way that resembles the organization adopted in Buciumi, where traces of metallurgic activities are emerged in the barrack-like B5 building, although no finding has confirmed the purpose of this extra *contubernia* insofar. At the present state of research, no metallurgic activities are known from the forts of the east sector and the Almaş sector.

Globally, *castra* occupied by cavalry forts present more consistent and clear traces of metallurgic activities in Dacia Porolissensis.

Dacia Superior.

Castra	Sector	Cluster/Axis	Garrison	Storage Surface	Metallurgic Activities
Dierna	Area A – Sector IV (?)	Dierna Axis			Bronzeworking. Fibulae production in <i>vicus</i> .
Mehadia	Area A – Sector IV (?)	Dierna Axis	Infantry – <i>coh. III Delmatarum</i>		Bronzeworking, no structure associated,
Teregova	Area A – Sector IV (?)	Dierna Axis	Infantry – <i>coh. VIII Raetorum</i> .		Kilns
Drobeta	Area A – Sector IV (?)	Drobeta Axis	Infantry – <i>coh. I Aelia Sagitt.</i> (eastern archers).	More than average (3%).	Structures with unclear use inside <i>castra</i> . Bronzeworking

					attested in <i>vicus</i> . <i>Collegium fabrum</i> (?).
Bumbesti	Area A – Sector IV (?)	Drobeta Axis	Infantry – <i>coh.III Cypria c.</i> <i>R.</i> (Easter archers).		Repaired bronze helmet – Bronzeworking?
Tibiscum	Area A – Sector IV (?)	Tibiscum Axis	Infantry and mounted archers (?) <i>Coh.</i> <i>I Aelia Sagitt.</i> <i>Numerus</i> <i>Palmyrenorum</i> (eastern archers).		Ironworking and bronzeworking attested in <i>vicus</i> .
Cigmau	Area A – Sector IV (?)	Tibiscum Axis		More than average (double <i>horreum</i>).	No metalworking attested, compatible structure identified.
Micia	Area A – Sector I	Mures Sector	Infantry and mounted troop. <i>Coh. II Fl.</i> <i>Commagenorum</i> ; <i>Numerus</i> <i>Maurorum</i> .		Bronzeworking, no structure associated. Bone working for bow construction.
Sighisoara	Area B – Sector VII	Dacia Superior East Flank			Temporary workshop inside earthen <i>vallum</i> .

No building can be clearly associated with metallurgic activities inside the *castra* of Dacia Superior. Bronzeworking and ironworking appears to be less attested in military contexts, but the economic life of the nearby *vici* was on contrast particularly dynamic and many of the civil settlements that were developed nearby *castra* has shown a particularly dynamic and active economic life. Traces of metallurgic activities, both bronzeworking and ironworking, are known from Tibiscum, Drobeta and Dierna.

Differences between infantry units and cavalry or mounted units are less evident in this part of Dacia. It is however noteworthy to signal that crafting activities have been in particular

signalled in relation with the units of eastern archers. Levantine warriors used not only the composite or recurve bow, whose production and use seems attested in Micia at least were a huge number of bone terminal stiffeners have been found, but also a specific defensive equipment: the bronze helm found in Bumbesti can be seen as a proof that oriental bowmen had maintained their traditional style in military equipment at least until the 2nd century AD.

The presence of workshops in *castra* occupied by Levantine archers can be explained by the need to craft and repair this peculiar equipment: it is possible that specialised artisans were needed to maintain the specific equipment in use among soldiers recruited in eastern provinces, and it is also likely that those artisans followed or were attached to a particular unit. However, the correct identification of a fort garrison remains often problematic, a difficulty that persistently complicates the analysis of archaeological evidences. In every fort in Dacia, stamped building from different military units have been found, with a particular emphasis for period of very intense building activities. It is likely that units deployed in a same sector shared resources when possible, and it was probably more convenient to send small building parties rather than dispersing soldiers from a same unit all over a large sector.

Because unit identification is often based on findings stamped bricks and tiles, the situation for many forts results blurred, especially when multiple units stationed in the same military base. Limited archaeological excavations and/or the partial publication of the results has sometimes prevented a full-scale analysis both of the chronological span of metallurgic facilities and the plan of buildings that could have functioned as military workshop. It seems indeed that a *fabrica* can be identified only on archaeological bases, at least in Roman Dacia, since inscriptions offer no clues in this sense.

Military ranks of the Roman army were vague in this respect and even the officers and sub officers in charge of the military workshop (the *optiones*) bare no specifications of their assignments. More specific titles are known from juridical sources and sporadic inscriptions, but no one connected to metallurgic activities is attested from Dacia insofar. The only notable exception could be the inscription remembering the collegium *fabrum* from Drobeta. This family of artisans surely worked for the army, but it is unclear if the collegium was indeed an association between the *fabri* of the unit, soldiers specifically trained to work in the military *fabrica*, or if the collegium was rather a civil association that grouped many artisans. It is noteworthy to stress again that Drobeta presents a very unusual situation due to the particularly important position of the town: controlling the important passage across the

Danube, Drobeta was founded to be a strategic crossroad for the area and it was further developed to be a hub across which many goods passed through and by.

The fort itself presents different buildings whose nature and purpose are unclear. One of these structures could have functioned as a workshop, but there are no archaeological confirmations for the hypothesis of a military nature of the *collegium fabrum* attested by the epigraphic document.

Because of the difficulty in properly identifying a military workshop and the limited information available for many buildings, the catalogue of known plans for this kind of facility is therefore limited. The most “typical” layout with multiple rooms organised around a central courtyard is only barely attested in Dacia.

A building with this layout is known from Romita but the structure is known only through LIDAR aerial prospections, no metallurgic traces that could confirm its function. A similar problem interests Porolissum. The huge structure labelled C5-7 from the great *castra* at Porolissum- Pomet is known only through few narrow trenches and the plan has been reconstructed on the base of the few data available. Gudea describes the facility as a large building with a symmetrical layout, with multiple rooms arranged around a central rectangular courtyard. Working spaces were apparently modular, having standard dimensions.

It should be however highlighted that there are not enough archaeological data to confirm this layout. The case of the structure C2 from the same *castra* demonstrates how dangerous this method could be. In Gudea’s original plan of the military base, the C5-C7 building had a similar layout with multiple rooms arranged around a central open space. When the excavated surface have been enlarged, a completely different situation has been noted. It is highly possible that also the area covered by the supposed C2 structure presents indeed a completely different layout.

The fort of Slaveni, in Dacia Inferior, presents a building with a central but narrow open space, around whose 3 sides were arranged a series of small rooms. The purpose of the building is however unclear, it could have been a *valetudinarium* or a *fabrica* as well. The most common layout for productive facilities and workshops in Dacia seems actually to have been derived not from the multi-spaced Mediterranean house plan, the very same adopted for *valetudinarian* and *praetoria*, but rather from a simplified barrack-layout.

It seems indeed that this relatively simple and rectangularly shaped structure with a functional use were relatively common in military camps of Roman Dacia. It looks possible indeed that these buildings were intended to be a multi-purpose. Without a pre-determined

use, these modules easily adapted to soldiers' needs and could fill different purposes according to circumstances. Small rectangular warehouses are known to have been built partially overlapping the *via sagularis* in many forts. The case of Porolissum-Pomet is probably the best known since some artillery projectiles were stored in the structure: seemingly, the fort was provided with some artillery pieces for a short period of time (the structure apparently fell out of use after few decades) and it was therefore needed a space to store the *ballistae* and their ammunitions. Other rectangular buildings in similar positions are known in other forts from Dacia, but their purpose is remained largely unknown.

In Buciumi, a barrack-like structure was converted to function as a small bronzeworking *atelier*. The structure maintain the simple layout and lacked internal divisions, it could be argued therefore that, because the multiple rooms of larger *fabricae* were probably intended to boost the division of works and to allow many teams to work on different projects, few soldiers were daily on duty in the structure and the production should have been limited to few pieces. Traces of metallurgic activities from barracks area are known from other forts and it was probably a common solution to host small crafting activities.

Both the *castra* at Drobeta, in Dacia Superior, and at Tihau, in Dacia Porolissensis, presents some barrack-style buildings of unclear use: in Tihau, the barracks outnumbered the need of the troop, and it is likely that some of those contubernium-style buildings served different purposes; Drobeta presents a more uncommon internal layout, in which the central area appears to be characterised by many structures of unclear purpose, possibly warehouses or small workshops. Possibly because of the danger connected with the use of fire and high heat facilities inside buildings, it appears that many workshops had open air furnaces. Combustion structures were nevertheless built in connection to specific buildings: barrack-like structures represent a common choice, but also small atelier opened inside or nearby *praetoria* are known.

The role played by the commander's house appears particularly interesting in the region taken under analysis. The headquarter building of Cașeiu is arguably the most stunning example of peculiar practice: parts of the *praetorium*, whose theoretical destination was to function as commander's personal quarter and *de facto* headquarter of the troop, were repurposed to host productive activities or administration offices. In the case of Cașeiu a whole wing of the *praetorium* was apparently destined to host productive activities and numerous traces of bronzeworking have been found inside the *praetorium*.

Another practice is particularly noteworthy for the purpose of the present discussion. Small and temporary workshop, sometimes opened directly in a niche excavated in the slope of the

earthen *vallum* of the very earliest phase, have been detected. Although those structures are very “rare” and hard to find, their identification confirms the rather obscure practice of relying on temporary facilities to sustain the building phases of a fort. The case of Sighisoara is a particular lucky one, since the fort has been barely excavated, but it is possible to appreciate there a small furnace built exploiting the slope of the *vallum*. A similar case is known from the very early stage of Porolissum as well, but it is likely that this solution could have been more widely adopted than archaeological data suggest.

These facilities were just temporary workshops necessary to produce building materials for military bases under construction. Unfortunately, this highly interesting typology is still under- documented. Outside proper military bases, metallurgic workshops were opened in *vici* and *canabae*. These manufactures surely worked in close connections with the imperial army, but they can-not be considered as strictly military facilities: there is no evidence to presume that these workshop were under the authority of local military commander nor that military workforce was employed.

More likely, ateliers in civil settlements were opened by entrepreneurs and artisans attracted by the economic possibility represented by the presence of a strong garrison itself. Settlement born on particularly important inland route, such as Porolissum, Dierna, Tibiscum or Drobeta, developed a dynamic economic life and metallurgic activities are generally well attested. Surely, those centres benefitted of their position to participate to a large network of exchanges and commerce. The commercial vocation of sites as Porolissum and Drobeta is strikingly evident: in Porolissum, bronzeworkers manifestly produced for exportation and Roman products, seemingly crafted in the Mese-gate area, have been found deep into Central Europe, highlighting the full extent of the commercial network developed in the area.

Overall, bronzeworking is much more attested in military bases and in nearby *vici* than iron working. The situation can be seen as a bit surprising considering that iron was used for the largest part of military equipment and widely used for producing building materials and working tools, beside being cheaper than the copper-tin alloy.

Roman soldiers potentially had easy access to copper and lead, both present in the area and used to produce bronze alloy, but tin was probably rarer and more expensive. On the other hand, bronze required simpler furnaces and lower heat to be melted: workshops that produced predominantly small bronze object arguably need less fuel to work and it is possible that small bronze objects had a higher commercial value, being relatively more precious in relation with metal used and therefore better good to sell.

Despite its undisputable usefulness, iron required more complex furnaces to reach higher temperature and, therefore, more fuel to function. Ironworking is surely attested in much less cases than bronzeworking even in military *castra*. It is possible that “small” auxiliary bases lacked the complex facilities and organization to undergo production of iron objects on large scale. Many pieces of military equipment, such as mail armours and other pieces of defensive weaponry, required substantial amount of metal and many hours to be crafted: it is possible that small garrison, such in cases of *castra* with just one auxiliary cohort, lacked the workforce and the infrastructures to undergo huge metal working processes.

The picture deriving from available archaeological data is that of a low intensity pattern of workshops and productive sites. Metalworking is overall widely attested across the military network of Roman Dacia and many of the *castra* that have been archaeologically investigated presents some traces of bronzeworking at least. However, even the military bases that have been most extensively excavated do not present large facilities and productive infrastructures overall seem to have been confined in relatively marginal areas of military camps.

The total output of the system was very low: each unit could repair its own equipment, or at least parts of it, and produce small bronze objects at a good rate, but military workshops apparently produced on local bases and it is unlikely that each unit's *fabrica* had large quantities of goods and resources to share. Even the legionary bases in Dacia, that elsewhere in Europe present large *fabricae* on more regular bases, lacked the complex facilities for the mass production. The *XIII Gemina castra* at Apulum have been unfortunately obliterated by the modern Austrian fortification, preventing any research in this direction on the site, but the *V Macedonica* base in Potaissa does not have provided consistent signs of metallurgic manufactures on large scale. The few findings related to productive activities (crucibles, iron ingots, a small recycling depot) seems to confirm this “low intensity” pattern. Apparently, even the legionary activities were limited in their productive output and there is no reason to consider the *castra* at Potaissa as a logistic hub, from where the large quantities of equipment were produced and distributed among neighbouring units.

The picture appears to a be puzzling one indeed. If the Bishop's model of a sort of disorganized pattern of small military workshops appears overall confirmed, but it should also be stressed that the *fabricae* archaeologically identified in Dacia are just small installation with a very reduced productive outputs: no military camp was auto sufficient in this aspect.

A decisive element in Bishop's paradigm (the substantial autarchy of the army in matter of logistic need) cannot be confirmed by archaeological data in the Dacian provinces.

14. A digression on “Shooting guns”.

The situation poses a theoretical and interpretative problem. The “low intensity pattern” sketch in the previous chapter is not an auto-sufficient one, it could rather act as a complementary infrastructure for a different organization.

Three possibilities should be accounted at this point:

- **Inference 1: Archaeological data should be “overestimated”.** Two factors combine to reduce quantity and quality of available data. Archaeology is substantially an information- destructive process and it is therefore possible that older excavations have failed to identify decisive traces, that are now forever lost. Furthermore, traces of human activities naturally tend to fade away during time so that they became thinner and rarer over the centuries: perhaps, the few findings stand as the last remains of a once larger activity. It should be argued consequently that military workshops were able to supply the military camp wherein they were built with all the equipment needed.

- **Inference 2: Military workshops existed but they have not been found yet.** Bishop’s model can be maintained as valid despite the low intensity pattern identified if it is presumed that the available data are just partial and conditioned by the limited extent of archaeological excavations. Many key areas of important camps remained poorly known nowadays, and the *castra* only barely explored or even never archaeologically indagated are still numerous. *Vici* and *canabae* have in particular benefitted of fewer modern excavations. It is therefore possible that larger productive facilities existed and that those structures have not been identified yet. Due to the limited space outside military camps, military workshops could have been built outside the *valla* in the same area occupied by the civil settlement or elsewhere near the fort. It is indeed beyond any doubt that many areas have still to be properly explored and that the knowledge of Dacian military network will surely expand in the future, but it can and must be debated if future discoveries will confirm the model.

The first two hypothesis aim to maintain Bishop's model as a valid paradigm by presuming respectively that archaeological evidences are more meaningful than it appears or that more studies on the field will finally reveal the missing elements of the equation.

It should however highlighted that many *castra* had limited space to destiny to metallurgic production. Buildings that could be associated with productive activities were relatively small, especially if compared to workshops known from other provinces, and had a very limited potential. Even *castra* wherein the internal plan is only partially known or from where structures of unknown purpose have been signalled could not have hosted large metallurgic facilities.

The *castra* on top of Porolissum-Pomet are the only fort among those examined to have still enough space advance the hypothesis that a large military workshop was active inside the fort. Doubts regarding the plan of the supposed large building labelled C2 are legit, especially considering that the two complexes C4 and C5-7 that had a similar plan in older publications proved to be in the end only one large structure identified as the *praetorium*, but there is in any case enough space for one or two impressive buildings, one of which could have been a *fabrica*, but also a *valetudinarium* appears as a valid possibility.

For the remaining and completely unexplored *castra*, no signs indicate the presence of large productive facilities in each one of them. It would be very strange if only the non-investigated military bases of Dacia were the one with clearly identifiable workshops inside: this should be considered a theoretical possibility, but it looks very unlikely from a statistic point of view.

As far as the distribution pattern suggests, there are no specific reasons to presume that one of the still unexplored *castra* should have had a workshop: the low intensity pattern that has been identified rather suggests that small facilities should have been active in various forts, and notably in connection with cavalry units or troops of eastern archers, but the presence of a large *fabrica* in at least one of the non-explored forts does not appear as a likely possibility.

As it has been previously discussed, the two Dacia legionary bases offer no clues in this sense. The large military base of Potaissa, garrisoned by the *V Macedonica* legion and the only one still available for archaeological investigations, does not present consistent traces of metal working facilities, and there are few chances to obtain more information from the *XIII Gemina castra* at Apulum, nowadays lying under a modern fortified complex.

The possibility that military *fabricae* existed outside the *castra* is mainly based on a document from Egypt regarding the activity of the *fabrica* of the II Traiana Fortis legion that seems to imply that the workshop, wherein also civil personnel was employed, was somehow out the

*castra gates*¹⁵²⁵. The evidence is however unclear and non-definitive. Even if accepted, the differences between Egypt, a rich and heavily urbanised province, and Dacia, where the texture of urban settlements were much weaker, are impressive. Even Bishop acknowledges that military workshops played a most important role in the western province, while in the east this part of the logistic was possibly entrusted to civil communities¹⁵²⁶.

The second inference is substantially an argument *e silentio* but it looks fallacious: because the model is right, the absence of proving data means only that data will be found in future¹⁵²⁷.

A possible inference 2b could be articulated as it follows. Each fort had its own small workshop, however, because the network was not auto-sufficient globally, some *castra* had larger *fabricae* thanks to which it was possibly to supply the necessary equipment to nearby bases. This variant substantially proposes a sort of “mid ground solution” between the original inference 2 and the following inference 3. It seems however to present different problem. Bishop’s model is saved by presuming that a new element, absent in the original paradigm, completes the system (in this way, the inference 2b violates the Okkam’s razor already) but it also necessary to presume that these mid-range military workshops (*fabricae* that produced for a limited number of forts in the nearby surroundings) were most likely placed in highly strategic bases. Because these facilities have not been identified, it should again be argued that they were located out the areas that have been archaeologically investigated or perhaps that some post depositional processes have completely obliterated their presence on the terrain.

In the end, this mid ground solution has few to offer: it simply shifts the problem to a further level, but it can-not solve the theoretical impasse.

- **Inference 3: Since archaeological data do not confirm Bishop’s model, it should be concluded that this part of military logistic was organised in a different way in Dacia.**

The third possible conclusion appears rather vague, but it bears important consequence. The logic inference can be reconstructed as following.

Archaeological data seems to not confirm the *fabricae* model as it is usually imagined: at the present state of research, there are not enough data to presume that units of the imperial army in Dacia were auto sufficient in producing their own equipment. Furthermore, since no

¹⁵²⁵ P. Berlin inv. 6765.

¹⁵²⁶ Bishop 1985 pp. 16-17.

¹⁵²⁷ See in general Walton 1996, more in particular pp. 2-5 and 25-28. The argument can be in this case re-written also as a fallacious *argumentum ad ignorantiam*: because it can’t be proved otherwise, the argument should be considered as correct. See in this case Copi and Cohen 1990 pp. 93-94. With exceptions: Walton 1992 pp. 381-387.

facility suited for mass production has been identified in military context, it should be argued that no unit could produce enough to provide armours and weapons to other military corps. On the other hand, it is logically necessary to presume that someone produced all the weaponry needed for the army, a condition *sine-qua non* to have a functioning military force stationed in a region.

Presuming that a mid-ground solution, as it has been explored in the argument 2b, offers no real solution, the only possible inference is to conclude that few central workshops existed in the province and that the most consistent part of the military equipment needed by the troops were produced by these large facilities, possible located in large civil settlements of the province or in any case not necessarily placed inside or nearby a military base.

This conclusion has been proposed already by Benea¹⁵²⁸ in a recent contribution, but it has remained at the level of work hypothesis. In comparison to previous mid-ground argument, it offers some advantages. Urban settlements are arguably less known than military bases (sometimes, as in the case of Napoca, because the site was continuously inhabited until nowadays, seriously impacting on the quantity of data available for researches) and the exploitation pattern of the countryside in Roman times is even more obscure. It is more logical to presume that few logistic and productive complexes, even if large, went unnoticed in archaeological investigations (because excavations did not have targeted the “right” place, or because significant traces have been obliterated during times) rather than presuming that military workshops have been systematically avoided in every exploration for misfortunes, or that traces have degraded in a particularly fast way.

Every possible alternative lead however to the very same theoretical impasse that can be labelled as the inference from absence problem: what can be logically and rightfully deduced from a notable absence/from a missing set of data? Dealing with the absence of information in historical and archaeological studies is relatively common and always puzzling, the problem itself can be variously shaped.

A greater attention has been paid regarding the use of inference from absence and argument from absence in connection with the use literary sources. It seems that there is no consensus about the epistemic value of the inference from absence in this sense.

¹⁵²⁸ Benea 2008c p. 384.

Newall¹⁵²⁹ defines it only as the logical fallacy of the negative proof:

P1: No evidence has so far been found for A;

C: Therefore A did not exist/happen.

Adding that “This is a formal fallacy: what is needed is an additional premise, to the effect that no evidence for A will ever be found subsequently¹⁵³⁰”.

This however a very particular and simplified case. It is true that the use of inference from absence risks to slip into a logical fallacy, but a more precise definition is required. The problem can be sketched as it follows: an evidence is expected from a determined set of sources, but it is indeed its absence that is supposed to drive the argument.

The most common problem related to the inference from absence is the potential happening of an event ignored by the source database.

It can be formulated in bayesian terms as it follows:

$$P(\sim H|\sim E)/P(H|\sim E) = P(\sim H)/P(H) \times P(\sim E|\sim H)/P(\sim E|H).$$

Being H the happening and E the evidence (and $\sim H$ the non happening and $\sim E$ the absence of evidence) and P the probability.

The argument indicates what it reasonable to believe and, as it is explained by McGraw, being the inference from absence a probabilistic argument its nature is essentially contrastive: “its force depends on the contrast between the expectation of the absence of the evidence ($\sim E$) if the event in question had not occurred ($\sim H$) and the expectation of the absence of the evidence if the event had occurred (H). This feature is encoded in the two conditional probabilities known as the likelihoods, $P(\sim E|\sim H)$ and $P(H|\sim E)$ ¹⁵³¹”.

The formulation bears important consequence. Since the strength of the argument itself can be measured on the base of the contrast between $P(\sim E|\sim H)$ and $P(H|\sim E)$, the argument is “forceless” when the absence of evidence is equally possible if the events happened or not (and so numerator and denominator are equal), and it is also extremely weak also in the case that the event occurred but it is unlikely that the event has been recorded (and so $P(E|H)$ is particularly small).

In other words, the inference from absence is a blunt tool in case of “insignificant” event that would have normally be avoided by contemporary witnesses. However, the argument from ignorance assumes infinite strength when $P(H|\sim E)$ tends to zero, and so when it is extremely unlikely or even impossible that the happening of an event had not been recorded.

¹⁵²⁹ Newall 2009 pp. 262-273.

¹⁵³⁰ Newall 2009 p. 270.

¹⁵³¹ McGraw 2014 p. 221.

To be valid, a series of preliminary postulates must be accepted to consider valid an argument from silence: if the event X happened, it is necessary that someone has witnessed it and that he, or someone who has collected the information, has recorded it; the account of the event X must in the end survived until present days to be analysed.

These preliminary conditions has been already pointed out by Langlois and Seignebos¹⁵³² among the others, but as it has been noted by Lange¹⁵³³ it is not an absolute certainty that these conditions are met.

The inevitable fading of information and sources has to be stressed once again: “the past has not been benevolent in preserving itself for the present¹⁵³⁴”. This is especially true for antiquity and for the Roman empire in particular. In the case of the present discussion, the absence of evidence regards the existence of centralised workshops for the production of military equipment.

As it has been argued before, historiographers offer very few details about the practical details of preparing and leading a military campaign and it is highly possible that even if such workshops really existed, their presence had been witnessed (ancient historians knew of their existence) but not recorded and it is also equally possible that even if their existence was recorded, the account did not survived until present.

This is true in particular for official documents, a particularly rare type of source for the period under analysis. It is extremely possible that if centralised workshops really existed, they had been surely recorded but it is also true that the survivability of this document is particularly low. It is noteworthy to highlight that the case differs greatly if we consider every type of possible source or if we limit the analysis to singular texts or to singular classes of documents. Evidence from inscriptions and from tablets and papyri could be scarce, but they are present, nevertheless. It should be also considered that historical facts have meaning only if contextualised in a paradigm of common believes, theoretical knowledges and postulates¹⁵³⁵. Remaining in the field of epistemology, the idea that an historian could work on the past in complete isolation, or that a piece of information should be considered as self-explanatory, falls in what is generally defined as the Baconian fallacy and should be rejected¹⁵³⁶. If ancient historians and witnesses did not pay importance to a certain event or to a certain fact because

¹⁵³² Langlois-Seignebos 1898 pp. 256 and ff.

¹⁵³³ Lange 1966 pp. 288-301.

¹⁵³⁴ Henige 2005 p. 175.

¹⁵³⁵ A point already proposed and discussed by Bintliff 2012 pp. 7-22. See the whole volume, edited by Bintliff - Peance 2012, wherein the paper is published for the entire discussion on the topic.

¹⁵³⁶ Fischer 1970 p. 4.

they failed to insert it in their cause-effect explanatory models, they most likely discarded it as non-meaningful.

Furthermore, the cases of event happening and the reality of an institution differ greatly. While a war, for instance, could have or could have not happened, it is absolutely sure that offensive and defensive weaponry were produced. The problem is not “if” the military equipment were produced, but rather where and by who. The same topic has received much less attention in archaeology, but recent contributions have opened an interesting debate over the epistemological value of inference from absence of archaeological data.

The basic logic structure of the inference remains roughly the same, but archaeology has some very distinctive traits that should be accounted in the discussion.

While an historical fact must be witnessed, considered meaningful within a theoretical paradigm, and then transmitted continuously to the present (and to the attention of the historians who are going to use it), archaeological traces of human activities are less likely to faint. Currie has recently proposed an interesting model, the “ripple model”, to frame the problem. Currie refers to the concept of radiation asymmetry, that characterises phenomena as wave and electromagnetic radiation (as the light), as metaphor to account a cause-effect chain of events¹⁵³⁷.

Being a certain event happening in a moment of time (t_0 in Currie’s formulation), it can be argued that a series of other events proceed from it, as caused by this original happening, in later moments (t_1, t_2, t_3 and so on). This chronological progression coincides with a chronological and spatial spreading of traces: the more events proceed from the original cause, the more traces are distributed through space and time. The more the *streams* of events and effects, the more the evidence of this process: this phenomenon is defined *dispersal* by Currie¹⁵³⁸. It follows that *dispersal* increases over time, and this increase coincides with an augment of traces.

It is interesting to note that this kind of epistemological dynamic (according to which later times had more and more varied effects) was known and studied, before Currie but different conclusions had been reached. While Cleland¹⁵³⁹ has concluded that the past appeared therefore overdetermined by this dynamic, being the evidence more numerous after a certain

¹⁵³⁷ Currie 2018.

¹⁵³⁸ Currie 2018 pp. 112-118.

¹⁵³⁹ Cleland 2011 pp. 551-582.

amount of time, Tucker¹⁵⁴⁰ has instead argued that the past is undetermined because of the evidences tend to fade during times.

To solve the difficulty, Currie has introduced two complementary concepts to account the epistemic effects of the dispersal: *gappiness*, the relative completeness of a potential trace set, and *faintness*, the relative difficulty of linking traces to the past and of locating traces¹⁵⁴¹. Ultimately, “the ripple model represents the epistemic tension between two processes, the spread of disturbance – aka the spread of cause-effect chains from a certain origin - (which has an epistemic benefit) and their degradation (which comes with an epistemic cost)¹⁵⁴²”. It should be however noted that *gappiness* and *faintness* vary from case to case and this determine how well an event or a period is known to contemporary historians: “events in the past with high gappiness and faintness, unless offset by high dispersal, will have a low retrievability¹⁵⁴³”. Currie’s ripple model can provide a clear context inside which is possible to evaluate the epistemic value of the inference from absence.

The logic structure of the argument obviously remains the same: its strength depends on the relations $P(\sim H|\sim E)/P(H|\sim E)$.

As Wallach has noted, “many archaeological traces are neither particularly *gappy* (because a high proportion of the original stuff, abundant in itself, is likely to survive) nor very *faint* (because the traces are distinct and stable)¹⁵⁴⁴”. Wallach argues therefore that, consider the volume and the resilience of the material traces left by human activities, the likelihood that an event happened without leaving appreciable traces should be considered particularly low. An epistemic “noise” represented by false traces, an effect of post depositional processes, should however be considered.

Wallach proposes the following formula: $R^- = (1 - \alpha q)/(1 - \alpha)$. Being q the “noise” of finding a stray trace in the area, and α the likelihood of detecting a meaningful trace. R^- denotes the likelihood ratio of $P(\sim H|\sim E)/P(H|\sim E)$, adding that “the higher the ratio, the safer the inference”¹⁵⁴⁵. In the case mentioned by Wallach (a quest to understand if a certain area was inhabited in a moment of time), the noise is represented by isolated findings, for instance objects whose date does not coincide with the date proposed for other objects or traces appear out of context.

¹⁵⁴⁰ Tucker 2011 pp. 805-829.

¹⁵⁴¹ Currie 2018 p. 125.

¹⁵⁴² Currie 2018 p. 112.

¹⁵⁴³ Currie 2018 p. 125.

¹⁵⁴⁴ Wallach 2019 pp. 2-10.

¹⁵⁴⁵ Wallach 2019 p. 6.

If it is more probable to find a significant trace than to detect a noise (if therefore $\alpha > q$), R^- assumes a high value and the inference from absence becomes stronger from an epistemic point of view.

A further variable can be added to account more specific situation, let this variable be p representing the likelihood of finding a very specific trace, the so called “smoking gun”.

The strength of inference from absence will be:

$$R^- = P(\sim E|\sim H)/P(\sim E|H) = (1 - \alpha q)/(1 - \alpha p).$$

When p and q are roughly the same, no inference is particularly strong: it means that even the significant traces found in a site are most likely “noise” and result of post-depositional processes.

A good example could be the positive inference to date a site. Let be supposed that the site was dated to the 1st century AD, but the majority of findings point rather to a later date and only one object can be dated to the I century AD (this is p), while one finding has been dated to a much earlier date (this is the noise q): being p and q equal and of equal epistemic value, there is no reason to date the site on the base of q .

It is therefore possible to evaluate the strength of a potential inference from absence in the case of the present study, but a weak spot remains in the model. The previous figures are based on the attribution of a theoretic value between 0 and 1 to the likelihood of finding or not finding a trace, or for a trace to survive and remain detectable until present.

There is no “objective” way to appreciate this value, it is only possible to propose some conjectures on empiric observations. Following the ripple model, we could assume that if the *fabricae* system was implemented in a certain moment of time, the dispersal of traces should have interested the area: theoretically, traces of the *fabricae* system should become more numerous during times and more evident in forts and surrounding. Consistent traces of metallurgic activities are expected to be found in all layers of occupation, and progressively more should be possible to link more and more objects to these military workshops. The stream of cause-effects is however less clear and more difficult to identify from an archaeological point of view. The Roman military network in the area followed the principles of the dispersal-effects: the more the time passed, the more the system of infrastructures evolved and became more complex. The reconstruction of forts in stone, the enlargement of structures and buildings and even the evolution of auxiliary infrastructures (linear defences, watchtowers and *burgi*) can be considered as the effect of dispersal dynamic from an event at t_0 (the establishment of the imperial army in the newly established province of Dacia).

It should be noted however that nothing similar can be appreciated for the development of the productive network constituted by military *fabricae*. Chronology inside *castra* is sometime unclear, but many facilities seems to have stopped their activity from one phase to another.

The faintness of metallurgic activities traces is also difficult to appreciate. Despite not being resistant to atmospheric agents and to chemical processes as pottery, iron and bronze can survive for a many century in right conditions. It should be however considered that metallic objects, due to the intrinsic value of the material employed, were recycled: metallic parts of broken or outdated objects were melted again and again to save the precious metal. The frequent presence in Dacia of deposits of iron and bronze objects confirms the high value of iron and bronze at the time: these depots were intended to hide some valuable goods in time of perils or perhaps to collect tools and objects that could be recycled.

Weapons and armours are particularly faint and “gappy” traces, because military equipment was most likely transmitted from one soldier to another during the decades, it was frequently recycled and, in the end, when imperial soldiers evacuated the province, they surely brought their weaponry with them.

It should also be noted that finished part of military equipment, that are therefore relatively rare findings, are not particular significant to identify a workshop as it could appear. The case of the repaired bronze helmet from Bumbești is strikingly interesting in this respect: the helmet could have be repaired in a small “camp” facility, or perhaps it could have been repaired elsewhere, in occasion of an official mission or even because the unit garrisoned in the local *castra* relied on a workshop active somewhere in the province. It is only because the conically shaped bronze helmet is of a type known to have been used by Levantine archers, a troop of whom stationed in Bumbesti, that the presence *in situ* of a workshop had been presumed.

Even more inconsistent are the findings of more common weapons: swords, *loricae*, helmets and also spearheads and arrowheads, usually found in large quantities in every well excavated military camp, could have been fabricated elsewhere.

Metallographic analysis has confirmed the use of local sources of raw materials, presumably the mines active in the Apușeni mountains at least for camps along the Western and Northern sector of Dacian frontier, but offer no direct clues about the place of production. This kind of studies confirm only that weapons were produced in Dacia and not imported from other provinces. The frequency of weapons in a camp represents a clear example of a highly expected trace of military activity and their distribution confirms the dispersal dynamic prevue by the ripple model when the context of the finding is military in its own nature (*castra*, watchtowers,

burgi, valla). Weapons are much less present in civil context. Some weapons are for instance known from Colonia Ulpia Sarmizegetusa, but those findings can be considered as a “noise” in the analysis: their mere presence does not indicate a local production.

The case is however different for the few unfinished objects known, a very rare finding that attest nevertheless a local production.

There are arguably more reason to justify the movement of a piece of military equipment (that could be lost in action or abandoned/forgotten during an official mission, even if during peacetime) than to consider the findings of moulds and crucibles as potential “noises”. These objects can be found in a secondary position, and many cases in which they cannot be associated with a specific structure are known, but it would be extremely unlikely to have them very far away from a productive facility.

Crucibles and moulds can be considered good “smoking guns” to identify the presence of a military workshop, but the presence of metal slags and wastes of metallurgic activities in an archaeological layer is even more useful in this respect because it attests beyond any doubts that crafting activities took place *in situ*.

How likely is to find these traces remains questionable. Wallach seems to imply that this probability depends mostly on technical aspects and digging methodologies¹⁵⁴⁶, but theoretical paradigms are equally important: older researchers and scholars did not consider these traces as particularly meaningful because they were uninterested on this kind of research, or perhaps because they lacked a model in which these traces assumed a meaning, and they failed to record this specific set of data.

It seems reasonable to presume that, despite all the difficulties, the prolonged activity of a workshop would have left more consistent traces on the terrain than few slags and some fragmentary crucibles. The volume of production is also to be considered: the more intensive was the production, the more evidences should have been left on the terrain.

If we consider slags and production wastes as the most meaningful traces for metallurgic activities (α) with a good a relative high probability to be found on the terrain if a workshops was active in situ, and crucibles and moulds as specific and more rare findings (p), it should be concluded that the presence of a military *fabrica* can not be argued from absence: a workshop should left important traces if present, but slags and crucibles are most certainly absent if no *fabrica* was active and the inference loses all its strength in this way.

¹⁵⁴⁶ Wallach 2019 p. 5.

A similar conclusion can be reached for the previously mentioned “mid ground solution”: it appears extremely unlikely that a system of *fabricae* active on a mid-range (on sector level, for instance) systematically left no appreciable traces.

There are no appreciable differences between the different *castra* in matter of traces of metallurgic activities, and even forts wherein productive activities are better attested seems to have had a limited productive output.

In contrast, the workshop in Micia specialised in the production of bow stiffeners for composite bows have furnished a much more abundant volume of traces despite the facility has never being interpreted as a structure intended for mass supply. Even more abundant findings and traces should be expected for the theorized the multiple workshops necessary to supply the various Dacian frontier sectors, but evidences remained scarce.

Now the case of large workshops active on provincial level should be considered from inside the same theoretical frame.

If the central workshop model is accepted, the dispersal of traces becomes extremely evident: the largest part of equipment found in a province could be linked to these central *fabricae*. Arrowheads and spearheads, that were relatively easy to produce in large quantities and in a relatively fast way, could represent an exception, but swords, armours, and other more valuable pieces of equipment (daggers, artillery pieces, possibly sheaths) required more time to be crafted and a more specialised and numerous workforce to be produced in large quantities. This dispersal traces are just indirect evidences that can be linked to a central workshop only in a speculative way.

If only archaeological traces are taken into consideration, the likelihood of finding direct positive traces of central workshops is however particularly low. Military *fabricae* were not only more numerous, but the context wherein they were situated are generally better preserved. After their abandonment, *castra* in Dacia were largely abandoned and never occupied again, and a *vici* and *canabae* seems to have suffered a similar fate.

Some exceptions are notable (Drobeta for instance) but not particularly numerous. Besides natural phenomena, such as the erosion caused by large rivers, military bases have mostly suffered from later human actions, being often exploited as open-air quarries. Overall, military contexts are arguably better preserved than civil ones.

Of the largest and richest civil settlements of Dacia, Napoca and Apulum were occupied without seamlessly until present days. Drobeta maintained its prominent importance during late antiquity and in later centuries, being continuously occupied until present days.

Besides some *vici* (Tibiscum, Porolissum) that arose in richness and importance during the century before being largely abandoned, only Colonia Ulpia Traiana Sarmizegetusa seems to have abruptly declined after the end of the Roman province and as a consequence to present still nowadays a relatively clear and scarcely troubled archaeological situation.

However, a civil settlement could extend for many hectares, with structures and manufactures spread all over the countryside. In this situation, the possibility to archaeologically detect a metallurgic facility are extremely unfavourable: such a structure could have been obliterated in more recent times, it could have changed purpose and use at certain date or more simply could have existed in a spot still not identified on the terrain.

If only archaeological evidences are considered, the epistemic value of the inference from absence tends to zero in this case, but the logic structure of the model is flexible enough to account the simultaneous use of literary and archaeological sources.

The dispersal effect on evidences maintained its theoretical value and describes well the evolution from a decentralised network of small facilities to the system of state fabricate for mass production implemented in late antiquity.

This evolution remains archaeologically under-represented, but literary evidences increase over times and become progressively more dispersed in space as well.

Globally, evidences are scarce but this paucity adds strength to the inference from absence: details regarding administration of military affairs left very few traces in general, and every piece of information assumes a high epistemic value.

15. Model Last Stand.

The low intensity pattern that emerges from archaeological data does not fit the need of the Imperial army stationed in the province.

The whole province was heavily militarised and strongly garrisoned, with a particularly dense network of military infrastructures. The effort to organise the area, that was scarcely urbanised before the Roman conquest and probably under-developed from many points of view, had surely required an immense afflux of raw materials and commodities.

In similar cases, the establishment of the Roman army and the imperial administration in a newly conquered region stressed the economy of the empire and forced other provinces to participate by supplying products, commodities and raw sources. For instance, the titanic effort to bring the Germanic regions and tribes under Rome talon had forced other provinces to participate in the enterprise: as it has been showed before, *Galliae* provided horses, Italy furnished gold and iron arrived from Spain¹⁵⁴⁷.

The consume of iron surely occupied a very precise and important spot in the list of materials supply to the army: building materials and tools, a whole array of small objects (keys, locks, joinery) and metallic parts were required for the construction of *castra*, civil settlements and roads. Many of the strategic assets necessary for “state building” fell under a more direct imperial control during the first decades of the empire, and iron was not an exception.

It is noteworthy to signal that many of these strategic assets fell under a more direct imperial control during the first decades of the empire. The triumph in the last civil war of the Republic allowed Augustus to obtain the control of many profitable economic enterprises and to appropriate of the immense wealth of his defeated rivals. The personal property of the emperor became a consistent part of state finances and progressively arrived to play a great role in the administration of the state.

Roman provinces and Italy itself paid a heavy toll during the civil wars, but the last decades of the 1st century BC and the first years of 1st century AD were marked nevertheless by an intense war activity that continued under the reign of Tiberius, despite the heavy losses suffered in Germany and the difficulties experienced in the long and bloody conflict in Pannonia had convinced Augustus to halt the expansion of the empire.

¹⁵⁴⁷ Tac. *Ann.* 1,81.

It is probable that Tiberius' attempt to seize the control of important mines right at the beginning of his reign was not a mere coincidence. Suetonius reports that Tiberius, pushed by an immense avidity, did not only confiscate the patrimonies of many wealth personalities, but he also retired the fiscal and economic privileges of many communities. Mining rights in particular were retired: *plurimis etiam ciuitatibus et priuatis ueteres immunitates et ius metallorum ac uectigalium adempta*¹⁵⁴⁸.

The passage is apparently confirmed by Tacitus: in AD 33, Tiberius confiscated the mines of Sextius Marius, the richest man of Spain, and acquired in this way the extremely valuable Iberian gold mines¹⁵⁴⁹. The aftermath of Sejanus' conspiracy was a difficult moment for Tiberius, and literary sources tend to portray the emperor as bloodthirsty and paranoid in this period¹⁵⁵⁰. Sextius Marius was indeed stroke down thanks to a specious accusation (he was accused of having an incestuous relation with his daughter¹⁵⁵¹) and subsequently condemned, but Tacitus highlighted also that the important mines were illegally transferred to emperor's private property instead of being put under the legit control of the state.

Clearly, the slow process of concentration of political powers in the hands of the *princeps* was at the time already ongoing and the imperial monopole on the most strategic state ad economic assets was a critical aspect of it.

The two passages have been sometimes interpreted as a strong evidence to suppose that from the beginning of Tiberius' reign onwards, the most important mines were secured under direct imperial control, *de facto* excluding civil entrepreneurs from the sector¹⁵⁵². The situation was surely more nuanced, it is unlikely that a same arrangement was systematically adopted in every province of the empire and without regard for the various situations encountered¹⁵⁵³.

It is however beyond doubt that the imperial leadership succeeded in exercise a certain control over mining operations and successfully defended its interest during centuries.

A certain increase of the involvement of public authority can be appreciated starting from the 2nd century AD to become more evident during the 3rd century AD¹⁵⁵⁴. The control over the mines was probably a necessary step for the centralization phenomena that characterised the

¹⁵⁴⁸ Suet. *Tib.* 49,2.

¹⁵⁴⁹ Tac. *Ann.* 6,19. See also Dio 58,22,2.

¹⁵⁵⁰ See Levick 1999 pp. 160- 180. See also Syme 1983b pp. 3-23 and Woodman 2006 pp. 175-189 about the year AD 33 and its "pivotal" role for Tiberius' reign.

¹⁵⁵¹ Tac *Ann.* 6,19: *Sex. Marius Hispaniarum ditissimus defertur incestasse filiam et saxo Tarpeio deicitur.*

¹⁵⁵² Marquardt 1884 p. 259 ; Orth 1924 s.v. *Bergbau* in RE col. 152 ; Rathbone 1996 p. 315; Harris 2000 p. 722.

¹⁵⁵³ Rostovtzev 1904 p. 445; Täckholm 1937 p. 97; Domergue 1990 p. 239.

¹⁵⁵⁴ Hirt 2010 *passim*.

late Roman empire and a clear effect of the increasing complexity and dimension of the bureaucratic apparatus.

A firm control over strategic raw materials was surely the most effective way to develop the system of large state-owned manufactures known from the 4th century AD and granted to the imperial administration a certain control over the prices of iron ingots, keeping the cost of weapon production relatively low and manageable.

In the case of Dacia, the need of organising the province corresponded to a heavy economic effort from the Empire and the need of a huge volume of materials for the buildings of infrastructures, of civil settlements and for the set-up of the provincial military network, and of course large quantities of commodities and goods to accommodate civilians and soldiers as well. The Carpathian barriers represented however an obstacle that complicated the transport of heavy goods from the provinces South the Danube to the Transylvanian plateau.

Supplying the newly conquered provinces with iron (ingots or ready-made objects) would have been expensive and complicated, especially if considering that the area was rich of iron mines: the exploitation of local sources of metals and minerals was priority for the empire, and surely the former Dacian mines were re-opened and kept in activity already during the very first phases of imperial occupation.

15.1. Mine-districts and exploitation regime.

Mines and mining activities in antiquity constitute a well-known and well-established object of study that has attracted the interest of scholars since the 19th century, generally as part of more general studies on the economy of the Roman empire¹⁵⁵⁵.

Only more recently the topic has benefitted of monographic studies and more specific focus. As always, quantity and quality of information is non-homogeneous, with large areas relatively poorly known. Unfortunately, beside the gold mines in Ampelum, from which an abundant epigraphic documentation is available together with a rich archive of wooden tablets, the situation of Dacia is not among the best known.

Continuity between Dacian times and the Roman dominion represents a very interesting element and should be accounted in the present discussion. The importance of iron working in Dacian society is well known. Details regarding the possible royal control over iron mines and

¹⁵⁵⁵ Alongside the already quoted works of Marquardt 1884 and Rostovtzeff 1904, procuratorian careers linked to mine exploitation are studied by Pflaum 1960/1961 and Boulvert 1970. Roman mines and quarries and their economic impact are discussed also (among the others) in Brunt 1990 pp. 163-187 (Procurators Jurisdiction) and 354-432 (Publicans in Imperial times) in particular, Eck 1997 (pp. 3-146 in particular) and Eich 2005.

the production of goods and weaponry are missing, but the strong presence of metallurgic activity in Sarmizetusa “Regia” is noteworthy nevertheless¹⁵⁵⁶.

The ancient Dacian capital is indeed known not only for its sacred area and the impressive fortification system, both clear symbols of its importance and of the might of its rulers, but also for the large artisanal quarters, wherein iron melting and iron working held a particularly important place. It is possible that kings’ power relied somehow on the control of iron mining and iron working, and that the lords of Sarmizegetusa secured their position by managing these important facilities, supplying Dacian warriors of the finest armours and weapons in exchange for their support and loyalty.

Sarmizegetusa “Regia” was at the heart of a large and extremely rich mining area, of which the gold ore deposit at Ampelum/modern Roşia Montana was just the crown jewel of the area but not the only source of metal of the region. The area continued to be exploited when the Dacian kingdom fell, and the mining activities never stopped.

Under the rule of the emperors, some mining areas were organised in special districts defined as *territoria metallorum* or, more simply, *metalla*.

According to Ulpian, not every province had *territoria metallorum* inside its borders¹⁵⁵⁷. It is possible that smaller mines and companies existed outside these imperial administrative entities, but data is missing for this case.

Legal nature of *territoria metallorum* is still not entirely clear, nor is their internal organization, due to the limited quantity of available documents. Some mining districts are better known than others and can provide useful elements of comparison to shed some light on the most obscure situation.

Beside the case of the gold mine in Alburnus Maior, for which a relatively abundant documentation is available, the other mining ventures in Dacia are seriously under-documented. From the better known cases of the neighbouring Danubian provinces (Moesia Superior and Inferior, Pannoniae, Noricum) and from the well documented situation in Spain and Gauls, the theoretical organization of Dacian mines can be tentatively sketched imagining that the area was managed in a fairly “standard” way.

Procuratores represented the imperial authority in these districts, and it is likely that each procurator had more than one district under his authority. They responded in their own turn to local provincial procurator, who managed provinces financial accounts¹⁵⁵⁸. Apparently,

¹⁵⁵⁶ See Oltean 2007 pp. 101-107.

¹⁵⁵⁷ *Dig.* 48.19.8.4.

¹⁵⁵⁸ Hirt 2010 pp. 202 and followings.

custom stations controlled and managed the passing of goods in and out the districts, albeit it is unclear if special taxes were applied in these cases. In case of areas of particularly difficult access, *stationes* overlooked the inland routes and main accesses to the district, assured safe travels of goods and persons and possibly delimiting the area¹⁵⁵⁹.

The presence of the army in mining district of Moesia¹⁵⁶⁰ and in Spain¹⁵⁶¹ is known also, both as secure force or as part of the administration of the area, but it is more likely that workforce was composed for the majority of civil personnel and convicts.

On the base of inscriptions and following a principle of geographical proximity, Wollmann has tentatively identified several separate and distinct mining districts in Dacia, in particular in the south-west corner of the province¹⁵⁶². It is however important to stress that the organization sketched by Wollmann remained hypothetical at his best and, because the archive related to the administration of Dacian mines is extremely incomplete, there is no direct confirmation for it. Archaeological traces of mining exploitation are generally scarce and very faint, Wollmann has heavily relied on past records and 18th Austrian archives to collect the necessary information¹⁵⁶³.

Unfortunately, due to the fact that the area has remained very active from an economic point of view during the modern age and until present days, many traces have been obliterated during times or have been lost during the decades.

The first major mining district was in the region of Poiana Rusca mountains. Traces of mining activities that can be dated to Roman times have emerged at Teliucu Inferior¹⁵⁶⁴, at Ghelari¹⁵⁶⁵, and more scarce traces at Cinciș, Rudu, Alun¹⁵⁶⁶. Still from the region of Huneodara, traces of mine exploitation have been identified at Trascău¹⁵⁶⁷ and Lupeni¹⁵⁶⁸. From Teliucu Inferior, an inscription issued by two *conductores ferrariarum* to Caracalla have been interpreted as a proof that the site functioned as the administrative centre of the district¹⁵⁶⁹.

¹⁵⁵⁹ Small *stationes* along roads to overlook communications and transports were particularly important for mines and quarries in hostile environments and hard to reach, such as quarries in south Egypt: see for instance Maxfield 1996 pp. 9-19. For *stationes* linked to the *portorium* see for instance the case of Noricum: Alföldy 1970 pp. 163-177.

¹⁵⁶⁰ Montana, centre and headquarter of the mining district, was indeed strongly garrisoned: CIL 3, 12529; AE 1987, 867 = AE 1999. 1327 See in general Rankov 1983 pp. 40-73.

¹⁵⁶¹ CIL 2,2552 = ILS 9125; CIL 2, 2553; CIL 2, 2554; CIL 2,2556; ILS 9130; ILS 9131. See also in general Domergue 1990 *passim*.

¹⁵⁶² Wollman 1996 pp. 232-239 in particular.

¹⁵⁶³ Wollmann 1996 pp. 21-27; Benea 2008 p. 15.

¹⁵⁶⁴ Wollmann 1996 pp. 232-233 and figure nr. 103.

¹⁵⁶⁵ Wollman 1996 p. 233 and figure nr. 104.

¹⁵⁶⁶ Ruda: TIR L 34,97; Alun: TIR L 34,27. Benea 2008 p. 16.

¹⁵⁶⁷ Wollmann 1996 p. 234 quotes Ackner 1856 p.22 (sic). It should be Ackner 19856 p. 87 and ff.

¹⁵⁶⁸ Téglas 1904 pp.498-501.

¹⁵⁶⁹ IDR III/3, 37.

Galleries and iron mines are known also from Bocşa¹⁵⁷⁰, Ocna de Fier¹⁵⁷¹, and Berzovia¹⁵⁷². According to Benea, Wollman presents the area as a second mining district, whose administrative heart was probably in Surducu Mare, but I could not verify the information in Wollmann 1996 and Benea presents no other indication about¹⁵⁷³. Wollmann signals also iron-mine exploitation in “valea Secaşului”¹⁵⁷⁴ and “valea Sf. Ioan”¹⁵⁷⁵. Further south, more near the Danube and with better connection with the rest of the empire, mining activities are known nearby Moldoua Nova and Sasca Montana¹⁵⁷⁶, from where an inscription attesting the presence of a *dispensator vikarius*¹⁵⁷⁷ is known, and galleries have been identified as well. It is unclear however if Wollmann considers these two areas as part of the same mining district or not. Not so far from Sarmizegetusa, the areas in question had been already exploited before the Roman conquest and, considering the importance that iron working had for the power of Dacian kings, it looks possible that the mines were originally part of Dacian king’s personal properties. A comparable situation is known from Noricum, from wherein Alföldy has consistently demonstrated that Noricum iron mines original belonged to the kings of Norici and, in reason of their importance, the mines were incorporated into *fiscus caesaris* and considered as part of emperor’s personal property. On this base, Noricum mining area was organized as a *territorium metallorum* and entrusted to a *procurator ferrariarum*¹⁵⁷⁸. The role and mission of this class of procurators is unclear and apparently varied from province to province. In Spain, the limits of their authority are detailed in the Vipasca tablets¹⁵⁷⁹, and procurators of that part of the Roman world appear to have had jurisdiction on such small districts, they resembled somehow the supreme magistrate of a very peculiar municipal organisation.

Procuratores ad vectigal ferrariarum Gallicarum seems to have had a different role and they were more concerned with the collection of fees and taxes from the mines of all the Gallic provinces. It is noteworthy to signal that their role was elsewhere by *conductores*, who often acted in more provinces at once, but in Gauls these latter professional figures were confined to

¹⁵⁷⁰ Wollmann 1967 p. 629. See also inscription from the point known as Eftimiu Margu ILD 181, see also Benea 2008 p. 17.

¹⁵⁷¹ ILD 182.

¹⁵⁷² IDR III/1, 113; ILD 177.

¹⁵⁷³ Benea 2008 p.17 quotes only Wollmann 1996 passim.

¹⁵⁷⁴ Wollmann 1975 p. 184.

¹⁵⁷⁵ Téglàs 1888 p. 125, Wollmann 1996 p. 235.

¹⁵⁷⁶ Benea 2008 p. 17.

¹⁵⁷⁷ IDR III/1, 26.

¹⁵⁷⁸ G. Alföldy 1970 pp. 163-177.

¹⁵⁷⁹ Domergue 1983.

a more limited sphere¹⁵⁸⁰. A similar arrangement seems to have been adopted in the Danubian provinces, where *procuratores Augusti praepositus splendidissimus vectigalis ferrariarum*, and their attached clerks, are known from Siscia¹⁵⁸¹ and Ljubja¹⁵⁸².

It is interesting to note that no systematic nor stable approach was adopted, but a different organization was implemented in each province instead. In small mining districts, such as Sardinia¹⁵⁸³, *procuratores metallorum* without any further specification are attested, but more complex situation required different arrangements. *Procuratores ferrariarum, argentarium*¹⁵⁸⁴ and *aurarium*¹⁵⁸⁵ are known in the epigraphic corpus from different provinces, and sometimes, as in Pannonia¹⁵⁸⁶, the administrative organization of mining operation dynamically changed during times. It emerges however clearly that the *procuratores* assigned to mining districts followed the same trend of the rest of imperial administration.

Originally posts assigned to freedmen, the administration of *metalla* was progressively entrusted to equites and in the 2nd century AD it appears as an established element in an equestrian bureaucratic career. No specific specialisation can be appreciated in this administrative path, but *procuratores metallorum* often continued by occupying post related to logistics or with financial responsibilities. A tendency to fragment the older districts into multiple smaller entities, with a consequent specialisation in administrative positions, can be however noted¹⁵⁸⁷.

If indeed the south-west Carpathian iron mines originally belonged to Sarmizegetusa king, it looks possible that they were transferred into *fiscus caesaris* after the defeat and death of Decebalus.

Mining activities were profitable economic ventures that required nevertheless a conspicuous technological investment: galleries had to be constantly reinforced and secure and large quantities of timber was required for the strengthening structures and pillars¹⁵⁸⁸; complex hydraulic system had to be implemented in order to prevent water flooding; mills to crush ores and melting furnaces were necessary to finally obtain the metal.

¹⁵⁸⁰ Hirt 2010 pp. 140-149 for a discussion on the topic.

¹⁵⁸¹ CIL 3, 3953 = ILS 3094. It is unclear if Siscia was the seat of the district procurator or a toll-statio. See Haensch 1997 pp. 352 and followings. Cf. G. Alföldy 2003.

¹⁵⁸² Dusânic'1977 pp. 65-69.

¹⁵⁸³ AE 1998: 671.

¹⁵⁸⁴ CIL 3, 12739=12740 = AE 1948: 243

¹⁵⁸⁵ CIL 3, 1297 = IDR III/3, 314; CIL 3, 1312 = ILS 1593 = IDR III/3, 366 ; CIL 3, 1622 = ILS 1532. See in general Noeske 1977.

¹⁵⁸⁶ See Hirt 2010 p. 135.

¹⁵⁸⁷ Hirt 2010 *passim*. See also the brief summary at page 165.

¹⁵⁸⁸ Structures of the gallery and water-drainage were regulated by law: *Lex Metalli Dicta* (LMD) II. 29–30; 35–6, 42–5.

A large workforce was also required and, especially when mines or quarries were opened in particularly hostile environment, the need of supply escalated to become a demanding problem to solve. The imperial establishment could rely, at least partially, on convicts, slaves and prisoners to face the demand of labour force, and the army could provide the necessary logistic and administrative support to coordinate the supply.

The emperor represented indeed the most powerful entrepreneur in this case, as he could provide both the starting capital and the technical support to launch mining operations on large scale. The importance of a strong political power to sustain the exploitation of the mining districts can be appreciated also by considering that the exploitation of iron mines rapidly declined after the end of Roman dominion, and it was already seriously reduced in the 5th – 6th century AD. Even for the emperor, the investment was surely demanding: a harsh legislation aimed to prevent the damaging of structures and even the abandonment of galleries, that have to be continuously exploited to be economically profitable¹⁵⁸⁹.

As far as surviving documents allow to understand, mining was managed through contracts with civil entrepreneurs. Mines that were imperial properties were divided in smaller unit and entrusted to numerous entrepreneurs after a payment of a fee. Contract details remain partially unclear. The *lex metallis dicta*, the second tablet found at Vipasca in 1906, mentions a system in which *putei* (single galleries) were entrusted to *occupatores*, who were responsible for their exploitation. The whole mines was theoretically divided into *pars occupatoris* (iron ores belonging to the civil entrepreneur, defined as *colonus* or *occupator*) and *pars dimidia ad fiscum pertinens* (the *pretium*, corresponding to up a half of the ore extracted or a certain quantity that have to be paid to the *fiscus* to obtain the *ius occupandi*)¹⁵⁹⁰.

Less clear is the role of the *conductores*. In the Danubian provinces, the collection of *vectigalia* from mining districts appears to have been entrusted to appear to have worked on a trans provincial level and represented possibly the highest level of civil entrepreneurs active in the sector.

Possibly flanked by numerous *socii*, the *conductores* effectively represented mining companies that had contracts in different provinces. It is unclear if they were directly involved in mining operations or if they provided an array of necessary services to mining areas and districts¹⁵⁹¹.

¹⁵⁸⁹ LMD II. 9–11. Sabotaging mining infrastructures was obviously severely sanctioned: LMD II. 32–5, 40–2. Domergue 1983 p. 140.

¹⁵⁹⁰ Flach 1979 p. 417 Domergue 1983 pp. 124–126.

¹⁵⁹¹ It has been proposed that *conductores* collected *vectigalia* in mining districts (Rostovtzev 1904 pp. 448-451; Hirschfeld 1905 p. 152; Täckholm 1937 p. 110; Alföldy 1970 p. 168) possibly under the authority of the procurator (Eck

The limits of custom districts (such as *portoria Illyrici*) could have provided the limits to their action too. Hirt¹⁵⁹² has proposed to recognized in *conductores* and *promagistri*, who were at the head of these companies, the products of a reform possibly implemented at the time of the Flavian dynasty, but he admits that the available documentation can not prove nor disprove the hypothesis.

Both *conductores* and *procuratores* are known from Dacia. *Procuratores aurarium* had seat in Ampelum, from where they controlled the activities of the provincial gold mines in nowadays Rosia Montana¹⁵⁹³. Due to the fact that both freedmen and equites are known, it has been argued that a regime of *collegialitè inegale*¹⁵⁹⁴ (with two *procuratores* of different status) was put in place but it is rather more probable that the freedmen were later replaced by *procuratores* of equestrian rank.

Despite the existence of a *ferrum Daciae* has been proposed¹⁵⁹⁵, there are no evidences of *procuratores ferrariarum* in the province. Iron mines could have been entrusted to *procuratores ferrariarum* but there are no epigraphic evidences for these officers in Dacia. Possibly, the *procurator aurariarum* had authority also over the iron mines, or perhaps a different arrangement was put in place. Or, as it has been proposed by Dusanic, mines were entrusted to civil entrepreneurs, the *conductores*, who in this case directly took in charge the direction of the *metalla*¹⁵⁹⁶.

A dedication to Caracalla from Caius Gaurius Gaurianus, who presents himself as *sacerdos coloniae Apulensis*, and Flavius Sotericus, *augustalis* from Colonia Ulpia Sarmizegetusa, is known¹⁵⁹⁷. Both men were *conductores ferrariarum* and evidently had some interests in the mining area. If they had the same role of similar entrepreneurs known from other provinces, they had interests *in loco*, and possibly collected fees and provided services. The presence of a *dispensator vikarius*¹⁵⁹⁸ in Moldova Noua seems indeed to indicate that the area was somehow controlled by public officers, albeit it is unclear if the *vikarius* reported to the *procurator aurariarum* or to someone else.

1997 p. 136). It has been however proposed that *conductores* were rather part of more structured and complex venture companies that invest in mining services, providing services besides of collecting taxes (Brunt 1990 pp. 398-401).

¹⁵⁹² Hirt 2010 pp. 244; 284-288.

¹⁵⁹³ Wollmann 1996 pp. 45-54 for the list, with related bibliography, of *procuratores* in Dacia.

¹⁵⁹⁴ Noeske 1977.

¹⁵⁹⁵ Benea 2008 p. 16.

¹⁵⁹⁶ Dusanic 1977 pp. 52-94.

¹⁵⁹⁷ IDR III/3, 37.

¹⁵⁹⁸ IDR III/1, 26.

A certain military presence in the mining district is known as well. In comparison to other provinces and districts, traces are however less evident.

In *Aquae* (the village of Călan today), not far from the important metallurgic site of Teliucu, bricked stamps of the *XIII Gemina* have been found and also stamped building materials of the *I Adiutrix* that can be dated to the time of Trajan¹⁵⁹⁹. At Sancrai, a village near Călan, a votive monument has been erected by a signifier of the *XIII Gemina* legio in honor of *Iuppiter Optimus Maximus*¹⁶⁰⁰, its presence seems to confirm that the area was garrisoned by imperial troops since an early stage of the province. The area under control of the *XIII Gemina* was extended until Huneodara, where stamped materials of the legion have been found¹⁶⁰¹.

A *statio* has been also identified at Criciova, and the presence of [M]ID stamps (known also from Tibiscum) confirm that the site was garrisoned by military personnel¹⁶⁰². At Dierna, already site of a still unexplored military camp, not only a large workshop has been identified (with traces of both bronzeworking and ironworking)¹⁶⁰³, but also a *statio* of the *portoricum* is attested by an inscription dated to the mid 2nd century AD: *I(ovi) [O(ptimo)] M(aximo) / Bellinus / T(iti) I(uli) S(aturnini) c(onductoris) p(ublici) p(ortorii) / ser(vus) |(contra)scr(iptor) / v(otum) s(olvit) l(ibens) m(erito)*¹⁶⁰⁴. The workshop building from Dierna is only partially known, but it presents the usual planimetry with multiple rooms arranged around a central space.

The southern mining district, whose most important centres were Moldova Noua and Berzovia, was also garrisoned by military forces since the beginning of the Roman province of Dacia. Berzovia was obviously the camp of the *IIII Flavia* under Trajan and apparently the legio was somehow involved in the exploitation of local metal deposits. Even after the *legio* was moved away from Dacia, Berzovia maintained strong connections with mining areas and metallurgic activities. Stamped materials of the *VII Claudia* have been found also in a point known as Ogașul Băieșlui, apparently confirming that also the district of Moldova Noua was garrisoned by imperial troops¹⁶⁰⁵.

Unfortunately, details concerning soldiers' activities in both areas are largely missing, and the chronology of military presence in mining sectors is unclear for now. The presence of *VII*

¹⁵⁹⁹ IDR, III/3, 12, 2; IDR, III/3, 12, 1; IDR, III/3, 12, 3.

¹⁶⁰⁰ IDR, III/3, 5.

¹⁶⁰¹ IDR, III/3, 36 and 36a.

¹⁶⁰² IDR, III/1, 241.

¹⁶⁰³ Bodor-Winkler 1979 pp.141-155.

¹⁶⁰⁴ IDR III/1, 35.

¹⁶⁰⁵ Benea 2008 p. 22 quoting Beanea 1983 *passim*.

Claudia and *III Flavia* stamps points to an early interest for the area, possibly because of the need of huge quantities of iron in the aftermath of the second Dacian war to reorganize the area.

Apparently, the imperial establishment firmly controlled the exploitation of local iron mines, but iron ores needed to be processed to be of some value. Furnaces were built near active mining districts and in clear connection with extraction sites in order to cut productive cost by avoiding long inland transport. Remains and traces of furnaces have been found from many localities, but the majority of it can be dated to the very last phases of Roman dominion to the 6th century AD.

Mines at Ocna de Fier were served by installations at Fizes, Soșdea and Reșița. Furnaces are known from the area of Berzovia¹⁶⁰⁶ as well, from Ghertenis¹⁶⁰⁷, Ilidia¹⁶⁰⁸ and in the Timis county¹⁶⁰⁹.

A furnace, dated to the 3rd century AD, has been identified also in Criciova¹⁶¹⁰. The largest facilities for extracting metal from ores are however known from Moldova Noua and Teliucu Inferior, supposedly the administrative centres of the two mining districts.

At least four furnaces, each one identified thanks to the remnants of combustion chambers of 80 cm of diameter, have been identified in Teliucu, each structure was capable of extracting 5kg of metal per time. Another furnace was found in 1850 in a nearby area¹⁶¹¹. Furnaces were similar to other known in Europe, with no appreciable differences.

From Moldova Noua, a large building of 19x9,7 m, have been found near furnaces. The building could have been a large *officina* or perhaps an administrative structure from where the mines were managed¹⁶¹².

Dacian situation can be perhaps compared to the one known from Lubja, at the heart of the iron mining district of Moesia Inferior. The imperial officer overlooking the area, a *procurator ferrariarum*, seems to have been especially concerned with the reducing of minerals and possibly his main task was to run the *officina* and collect what had to be paid to the state.

If a similar arrangement was implemented in Dacia, the imperial administration, through the action of imperial *procuratores* and agents in place, succeeded to obtain large quantity of iron

¹⁶⁰⁶ Teicu 1999-2000, p. 451-469.

¹⁶⁰⁷ In pons Goru, Făitanu Mare, Zaton, Glegesant, Rovină and Ogașul Haiducilor: Bozu 1990, p. 147-159.

¹⁶⁰⁸ In locality Funii: Teicu 1987, p. 330-333.

¹⁶⁰⁹ Structures are known in Gătaia (Benea 1996 pp. 254-258, catalogue number 72), Jabăr (Benea 1996 catalogue number 93), Silagiu (Benea 1996 p. 287 catalogue number 159) and Șipet (Benea 1996 catalogue number 116).

¹⁶¹⁰ Benea 1996, pp. 243-244.

¹⁶¹¹ Wollmann 1996 p. 296

¹⁶¹² Benea 1996 p. 77. Furnaces: Bozu 1990, p. 147-159.

at the cheapest price possible. Melted near the place of extraction, ingots were sent where needed.

The only iron ingot found in Dacia, from the *V Macedonica castra* in Potaissa, could have come from the *ferrum Daciae*, but the piece has been unfortunately lost and no analysis can confirm its provenance. In Britannia, lead ingots bearing the marks of local legions have been found, occasionally also far from the province¹⁶¹³. If the army was indeed involved in the mining operations, it is possible that the part destined to the armed forces or the provincial government was collected and sent to some specific sites, where weapons and tools were crafted according to soldiers' need.

With a local and rich source of raw material firmly under control of local administration, the provincial army could rely on a constant influx of cheap iron. Ingots can be sent to the multiple *fabricae* located in the various *castra*, but the system looks more complex in this way: each unit had to constantly be in touch with the proper office and demand from time to time a certain quantity of iron that had to be crafted into the desired objects.

Reducing the sites in which iron was worked should have greatly simplified the administrative aspect of this part of the supply chain. It should be interesting to consider the possibility that also *fabricae* and workshops were put under the authority of the *procurator metallorum*. The case of the *procurator ferrariaum* attested in Rome and in Ostia has posed in this sense a puzzling problem.

The inscription from Rome is dated between the 1st and 2nd century AD:

T(ito) Statilio [3] / Optato p[raef(ecto) ann(onae)] / proc(uratori) Aug(usti) a [rationibus] / flamine C[armentali] / proc(uratori) Aug(usti) hered[itatium] / proc(uratori) Aug(usti) ad patrim[onium] / proc(uratori) Aug(usti) ferrariar[um] / proc(uratori) Aug(usti) ad cens[us] / Gallorum / proc(uratori) Aug(usti) ad census Brit(anniae) / praef(ecto) alae Afrorum / trib(un)o leg(ionis) VI Victricis / trib(un)o leg(ionis) VI Ferratae / praef(ecto) coh(ortis) I Lucensium / Statilii Homullus / et Optatus / patri opt<i=U>mo¹⁶¹⁴.

Titus Statilius Optatus' career shows the usual combination of military and administrative posts. Optatus went through numerous commands: *praefectus* of the *coh. I Lucensium*, *tribunus* in the *VI Ferrata legio* and then in the *VI Victrix*, he was appointed as *praefectus* of the *ala Afrorum* before starting the administrative career. Before being promoted to the office of *procurator ferrariarum*, Optatus was entrusted with the *ad census* operations in Gallia and

¹⁶¹³ Hirt 2010 pp. 190-192 with related bibliography.

¹⁶¹⁴ CIL 6, 41272 = CIL 6, 31863 = ILS 901.

Britannia. He evidently performed those tasks in a successful way and his career proceeded happily through numerous prestigious offices (*procurator ad patrimonium, procurator hereditatum, procurator a rationibus*) until reaching the important post of *praefectus annonae*.

Interestingly, no province is mentioned in relation to the post of *procurator ferrariarum*. Hirt has therefore argued that a sort of central bureau existed in the capital of the empire¹⁶¹⁵, and that the office functioned together with a similar post in Ostia:

*T(ito) Petronio T(iti) f(ilio) / Aniensi(i) Prisco / procuratori Aug(usti) / ferrariarum et annonae / Osti(ensi)s praef(ecto) alae II Pannonior(um) / trib(un)o leg(ionis) VII Geminae Felicis / praef(ecto) coh(ortis) [[[3]I [3]]] / tr[[3]] / [[6]] / [[6]] / [[6]] / lyntr(ariorum?) [[3]] / l(ocus) d(atu)s d(ecreto) [[[d(ecurionum) p(ublice)]]]*¹⁶¹⁶.

The inscription is a fragmentary state and thus incomplete. Titus Petronius Priscus, son of Titus and inscribed in the Aniensis tribe, had some military experience but the career is incomplete. He commanded a *cohors* before being appointed as tribune of the *VII Gemina legio* and he advanced in the military ranks to the command, as a praefectus, of the *ala II Pannoniorum*. He was finally appointed to an administrative office as a *procurator*. In this case, the complete title appears to have been *procurator Augusti ferrariarum et annonae*. The post was evidently created to manage the traffic of supply through Ostia, but the connection with iron remains unclear. The central office could have been created to coordinate mines exploitation all over the empire, but this appears as a rather implausible solution, or perhaps to manage Italian iron mines (with the obvious exclusion of Sardinia, for which a separate procurator was appointed). A different solution can be however proposed. It has been already mentioned that the presence of a strong urban garrison implied the existence of numerous workshops or, perhaps, even of a sort of central atelier for the production of military equipment. Because of the *praetorian* guards in particular benefitted of a higher and privileged status, it has been proposed that the state equipped them at its own expense¹⁶¹⁷. If this was true, it could be argued further that this central office *ferrariarum* was intended to supply, perhaps collecting fees from various provinces, local productive chain and provide in this way all the weaponry needed by Rome garrison. The reconstruction is highly hypothetical and based on conjectures, but it could perhaps explain the exigence for a post of *procurator ferrariarum* at the heart of the empire.

The identification of two mining districts in the south western corner of Dacia adds a further element for the understanding of the distribution pattern of metallurgic activities in the

¹⁶¹⁵ Hirt 2010 p. 144.

¹⁶¹⁶ CIL 14, 4459 = ILS 1442.

¹⁶¹⁷ See the discussion in Passerini 1926 pp. 74 and ff.

province. Two clusters appear clearly in the northern part of the province, evidently organised around the most important inland routes of the region. Despite at least some traces of metallurgic activities appear in the northern *castra* with a certain frequency, it should be noted that evidences of iron working are particularly scarce. See figure 31 for the spatial distribution of mining districts in Dacia and their geographical position inside the province.

Due to the proximity with the mining areas, *castra* in the south west corner of the province show a stronger connection with iron working and the geographical proximity is reflected in more numerous traces of iron working.

An easier access to raw materials stimulated metal working activities in both *castra* and in civil settlements. It does not appear casual that a denser concentration of iron working activities has been signalled in the south of the province. The continuous exploitation of iron mines slowly developed a sort of “vocation” for the area that survived the empire.

From the Dacia kingdom to the Roma dominion, local mines were exploited for centuries after the withdrawal of the empire from the province. At Dierna¹⁶¹⁸ and Drobeta¹⁶¹⁹, bronze working and iron working atelier remained active until the 5th century AD . Furnaces and facilities to extract metal from ores are known as well. It is noteworthy to signal that no technological development can be appreciated in this field, and it appears that roughly the same techniques were applied throughout all antiquity.

Imperial administration had therefore a firm grip over the beginning of the supply chain: iron ores were extracted and processed locally, and part of this production was likely paid as fees to the state

Specifically appointed *procuratores*, or perhaps the financial *procurator* of the province, had therefore at their own disposal a discrete amount of raw materials that can be crafted at a cheaper price than normal, an important condition to develop a centralised logistic system. However, because no facility nor complex for mass production of military equipment have been identified in the area, it should be deduced that the main centre of production was elsewhere in the province.

¹⁶¹⁸ Benea 1976 pp. 205-214.

¹⁶¹⁹ Bejan 1976 pp. 257-278.

15.2. Smokes without a gun: a mirage at the end of the quest.

With all the pieces on the chessboard, the quest for the missing element of Roman military logistics in Dacia seems to have come to an end. Reassuring for the previous chapters, when Roman forces occupied Dacia, the empire was already undergoing a slow but unstoppable process that slowly centralized many aspects of the economic life of the empire under the control of the emperor and his entourage.

The expansion of imperial bureaucracy, the creation of numerous posts and offices all over the provincial world allowed the imperial establishment to exercise a greater influence on the management of resources and of manpower. For what concerns military affairs, the increased engagement of the state in matter of logistics and supply coincided in a progressive standardization of military equipment, fighting style and tactics.

Controlling the army in all of its aspects was indeed a political and strategical priority for the emperors and many indirect evidences suggest that the establishment succeeded in tying soldiers and commanders to its cause for centuries by presenting itself as main if not unique provider of payments, commodities and supplies for the soldiers. How this control was effectively implemented in the vast imperial world was determined by the politic and strategic culture of Roman élites.

As it has been showed in previous chapters, the notion of strategic culture occupies a central place in the theoretical structure of the present dissertation: Roman élites learnt from the past, they could adapt and “evolve”, but the past experience constituted a powerful behavioural compass. This mind habit influenced the political and strategical decisions even at the highest level. According to the theory of strategic culture, a “strategic community” (the elements of a community or a state entitled to direct military operation and to take decisions in matter of foreign policy) tended to apply similar answers to similar problems, rather adopting consolidated solutions when possible.

The control over raw materials, iron in this case, represented the preliminary condition to develop a centralised logistic network, but the motive should be identified as well.

Being surrounded by “barbarian” nations and tribes on three side, Dacia was considered relatively exposed to external threat despite the formidable defences represented by the Carpathians, or at least it seems that this was the evaluation of the imperial establishment.

A strong garrisoned was needed to subjugate the fierce locals, but the impressive dispositions of troops and infrastructures along the frontiers confirm that the provincial army was disposed also to control the inland routes from and to the Transylvanian plateau and, eventually, blocked

them. Local forces were involved in a long series of conflicts during the 2nd ad 3rd century AD, often participating in large scale operation together with the armies of other Danubian provinces. *Vexillationes* were also assembled ad sent campaigning far from the province were the emperor required it.

Besides the documented operations, many conflicts escaped the attention of literary sources ad are known only through archaeological evidences or epigraphic documents. Raids and other operations on smaller scale left few or no traces at all: it is therefore hard to estimate how frequently Roman soldiers were involved across the frontiers to repel raiders ad marauders. Since the time of the Republic, as it has been discussed in the very first part, Roman army has tended to rely on a central logistic hub, where provisions and supply can be amassed and from there sent to the campaigning troop, in case of prolonged engagements.

Workshops to produce or repair military equipment were no exceptions, and in case of need artisans and workers were gathered into a certain locality to prepare and sustain the operations. If the control over the sources of raw materials was the preliminary condition, the prolonged state of warfare and the need to cut the cost to maintain such a strong army in the Trasyvanian plateau represented the most important motives that could have determined the adoption of few large logistic hubs as permanent solution in the area.

Workshops of various dimensions and productive capabilities surely existed all around the Roman province, albeit few have been found. Besides the atelier active nearby military bases, for which it is theoretically possible to presume that they worked for the troops garrisoned in place, civil workshops identified in the countryside do not have provided any hints in this direction. An iron workshop is known from Criciova, in the south-west mining district of Dacia. Furnaces to extract metals have been found in place, together with a building that may have been an iron working facility¹⁶²⁰.

Structure internal plan is only partially known, but the space seems to have been organised with the usual division in multiple rooms. Due to its position, the presence of furnaces and the archaeological findings reported, among which there are no weapons, it is possible that the installation served to produce ingots and bars to be send elsewhere, and perhaps also to provide and repair tools necessary for the mining activities.

The only iron workshop without a connection with a military base has been identified in Medias, in a point known as Gura Cimpului¹⁶²¹. The facility was probably not a large one, but a

¹⁶²⁰ Benea 1993c pp. 79-90.

¹⁶²¹ Winkler-Blajan 1982 pp. 81-108.

huge quantity of slags and iron objects have been found in place. It is interesting to highlight that the workshop, active at the end of the 2nd century AD, did not produce weapons nor military equipment. The deposit of iron objects found in the area indicates rather a rural blacksmith, that produced and repair tools for local farmers and workers.

This situation is not uncommon in the area. The case of Medias has been compared to a the ensemble of objects found at Marculeni¹⁶²², but such deposits have been discovered in several other localities within the province.

These findings indicate the activities of local workshops in rural context (if not hided in time of need and danger, in those deposits were probably collected objects destined to be repaired or recycled). The almost complete absence of weapons and military equipment is noteworthy. Doctor D. Nyulas, who has worked on a PhD thesis on the subject (forthcoming), has confirmed me that weapons are extremely rare in these contexts¹⁶²³. Sporadic spearheads can be found, but besides being particularly cheap and easy to produce, this weapon could also be used for hunting. Evidently, the imperial establishment had succeeded in controlling the production of weapons and armours suited for war, thus reducing in this way every danger connected with a potential revolt, and evidently the provincial government had concentrated the production of military equipment somewhere in the region. Because military bases have provided faint traces of metallurgic activities, a different solution must be imagined. The smoking trail leads to the heart of the province.

In the vast epigraphic corpus of the province, no military figure has been found in connection with the production of military equipment, nor with the exploitation of iron mines. Civil entrepreneurs were already active in the mining sector, it is plausible that they participated in other moments of the supply chain as well.

The engagement of provincial élites in local economy and in the management of strategic asset is a phenomenon that has been frequently discussed in the past. Against “modernist” visions that dominated the first half of the 20th century, more cautious approaches have been preferred. The focus has been for long on the cultural and ideological importance of land property in Roman society. The extension of the estate was indeed the measure that granted and regulated the access to the political careers and the most solid base for social prestige.

¹⁶²² Glodariu- Zrinyi- Gyulai 1970 pp. 207-231.

¹⁶²³ Doctor Dorottya Niulas – forthcoming publications.

The harsh judgement of Cicero¹⁶²⁴, who disregards “minor” commercial and artisanal activities as dishonourable activities, has been often considered as a pillar for Roman culture and society. Reality was instead more nuanced, and despite the ideological value of land property, many wealthy citizens of the empire were deeply embedded in various economical activities. Alföldy has in particular reassessed the importance of manufacturing activities and commercial relations for Noricum municipal élites¹⁶²⁵. It seems rather plausible that the wealthiest citizens of the frontier provinces of the empire engaged themselves in a more varied array of economic activities. The exploitation of metal deposits was among those activities. Mining ventures required however substantial investments, especially at the beginning of the enterprise, and attracted only the wealthiest members of municipal élites. Despite the proximity to the important mining district of Noricum, for instance, local provincial and municipals élites struggled at the beginning in competing in the sector: *conductores* and entrepreneurs active in the area came rather from the rich Italian centre of Aquileia, whose commercial vocation and strong ties with eastern Europe were already a well-established reality at the time¹⁶²⁶.

Dacian provincial élites were instead particularly active in the economic life of the province and often dealt with the most important and strategic asset of the area¹⁶²⁷. In comparison to other regions of the empire, Dacia was however under-developed from an urban point of view, with very few major settlements at the beginning and few other that progressively grew nearby *castra* and military bases.

Apulum, seat of the *V Macedonica* legion and of the *legatus Augusti*, and Colonia Ulpia Traiana Sarmizegetusa, the only colony deducted in the area for many decades, were the spearpoint of Roman presence in the region and the most dynamic and wealth settlement of Roman Dacia. Apulum wealthiest citizens had huge interests in provincial mining districts. Obviously, the gold mines at Ampelum represented the most promising sector. The family of the *Publi Aelii* from Ampelum managed to build a considerable fortune in this way, members of the family rapidly reach the highest rank in provincial society and one successfully reached the rank of Senator in Rome¹⁶²⁸. Despite the prestige obtained, the family persisted in developing their commercial and economical interests in the region without indulging exclusively in farming activities.

¹⁶²⁴ Cicero *De Officiis* 1, 150-151, although Cicero himself insists on the idea that trade on the largest scale should be considered a honourable enterprise. Cf. Cic. *II Verres* 5,167; Tac. *Ann.* 4,13,2.

¹⁶²⁵ Alföldy 1970 pp. 163-177. See also Alföldy 1974b in general.

¹⁶²⁶ Scherrer 2002 p. 29.

¹⁶²⁷ Egri 2007 pp. 103-112.

¹⁶²⁸ Daicoviciu-Piso 1977 pp. 77-78. The *Publii Aelii* gave a senator to the empire, attesting their importance and role in provincial society: CIL 3, 1006.

The *Verenii* from Sarmizegetusa were also engaged in similar activities and arose among the most prominent families of the area¹⁶²⁹. Iron mines in the southern part of the province did not fail to attract the attention of local élites as well. The *conductores* from Teliucu Inferior were a *sacerdos* from Apulum and an Augustalis from Sarmizegetusa, perhaps not among the wealthiest in town but surely well embedded in both communities.

The smoking trail points to these two cities: the economy of the largest and wealthiest settlements may have been strongly tied to the exploitation of metal deposits, and possibly the two sites played an important role in provincial military logistics.

A strong military presence in Apulum, whose garrison was constituted by the *XIII Gemina legio* and by the personal retinue of the provincial governor, represented for sure an attractive market for artisans and entrepreneurs who aimed to work with the imperial army. Being the civil and military capital of the province, in Apulum there was not only the governor's general staff, that comprised officers and delegates of the army, but also the financial offices necessary to manage the state expenditures in the area. It is not surprising that entrepreneurs that aimed to obtain contracts with the state were present in Apulum and frequently attested there.

Several *negotiatores* are attested in Apulum, albeit their field of interest is unknown, and they probably worked as providers for the imperial administration. The term seems indeed to imply that these entrepreneurs worked on the highest level and moved huge quantities of goods and money.

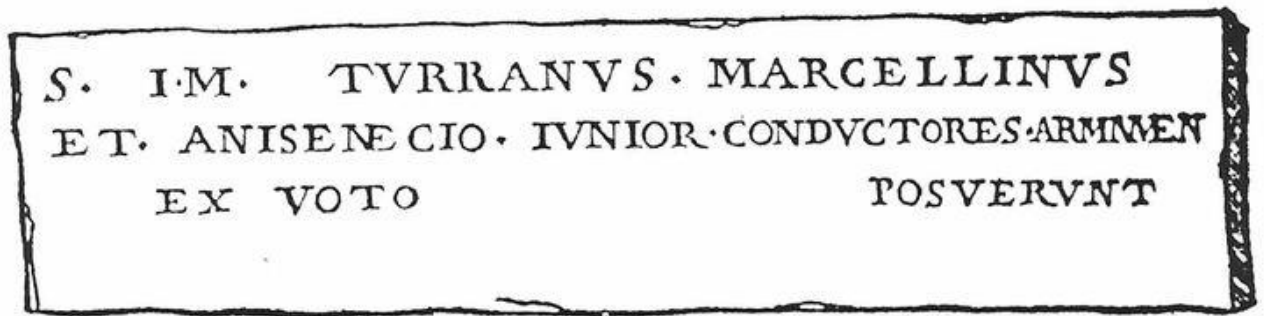
Even more interesting, an inscription attests the presence in loco of *conductores armamentarii*. The inscription, an *ex voto* by two personages named Turrianus Marcellinus and Antonius Senecio, is unfortunately lost nowadays:

*S(oli) I(nvicto) M(ithrae) Turranus Marcellinus / et Ant(onius) Senecio iunior conductores armament(arii) / ex voto posuerunt*¹⁶³⁰.

A sketch has been also preserved, unfortunately the reading cannot be confirmed beyond any doubt and the date remains approximative:

¹⁶²⁹ Egri 2007 p. 106.

¹⁶³⁰ CIL 3, 1121 (p. 1390) = IDR III/5-1, 285.



The background of the two entrepreneurs is unknown. The lexical choice (*conductor*) seems to imply that they worked with the army, it is plausible that they aimed to get military and logistic items subcontracted to them in order to resupply weapons to local troops within the province.

Operations costs were kept under control using the iron obtained as fee for the concession of mining rights in the stat-controlled districts. No comparable documents are known from the rest of the empire.

It has been proposed to consider both Turranius Marcellinus and Antonius Senecius as soldiers or officers specifically attached to the *XIII Gemina* but, despite the local legion was likely one of their most important client, I see no reason to presume that they were soldiers or they worked with just one unit. It is however undeniable that veterans and discharged soldiers had a great impact over a province economic stability.

Especially in newly conquered region, the municipal élites were often constituted by former soldiers who had obtained lands and a conspicuous sum of money after their discharge. The sum obtained at the end of the military service was often consistent enough to grant the entrance into the *ordo decuriones*, assuring therefore a certain influence in local communities. Thanks to their expertise in military matters, former soldiers remained sometimes in contact with their former comrades and provide services to the army.

The case of Caius Gentilius Victor from Mainz is particularly highlighting in this respect:

Pro salute Imp(eratoris) M(arci) Au(rel(i) [[Commodi]] Antonini / Pii Felicis / Fortunae Reduci / leg(ionis) XXII Primigeniae) P(iae) F(idelis) C(aius) Gentil(ius) Victor vet(eranus) leg(ionis) / XXII Primigeniae) P(iae) F(idelis) m(issus) h(onesta) m(issione) negot(iator) gladiarius / testamento suo fieri / iussit ad HS n(ummum) VIII mil(ia)¹⁶³¹.

Caius Gentilius Victor presents himself as a veteran of the *XXII Primigenia legio*, honourably retired from the army. After his return to the Civil life, he became a *negotiato gladiarius*. It is

¹⁶³¹ CIL 13, 6677 = ILS 02472.

hard to appreciate the extent of his trade, but it is possible that he exploited his contacts and know-how to become to obtain contracts to supply swords to the army.

Veteran and discarded officers played an important role in Dacia as well, many among them quickly arose to prominent position in their communities until obtaining magistracies on a municipal level. Large estates started appearing in Dacia during the decades of imperial dominion and became more frequent in the 3rd century AD especially in the Mures valley, confirming the progressive development of a strong and wealthy provincial élites¹⁶³². It is possible that many former soldiers invested their experience and their wealth in working in close contacts with the imperial army or with the ranks of the provincial bureaucracy.

Apulum was however not the only town to greatly benefit of the economic development of the area. Colonia Ulpia Traiana Sarmizegetusa was for long the only colony founded in the province in the aftermath of its institution, and for many decades the town was the most important settlement of the region.

Interestingly, the settlement seems to have inherited the vocation of the ancient Dacian capital. Colonia Ulpia Traiana was indeed seat of particularly powerful *collegium fabrum*¹⁶³³. The epigraphic corpus of Sarmizegetusa has provided names and careers of many members but only six *patroni* of the associations are known, among which were members of local municipal élites, a *decurion* and a Roman eques: Sextus Attius Secundus, who was possibly a *decurio augustalis* of the *colonia*¹⁶³⁴; the *eques* M. Cominius Quintus¹⁶³⁵; L. Flavius Valens¹⁶³⁶; M. Pomponius Severus and M. Urbicus Valerianus¹⁶³⁷; and C. Valerius Valentius¹⁶³⁸.

Collegia fabrum are also known from Apulum and Drobeta, in both town these associations proved to be powerful and influent.

The case of Drobeta has been previously discussed: local *collegium* had strong connections with the provincial army, it has also been proposed that the *collegium* was indeed formed by soldiers who worked in a military *fabrica*, but it is more possible that the *collegium* was indeed a civil association. A commercial vocation defined also the *collegium* from Apulum. *P. Aelius Strenuus* is known among its *patroni*. Aelius Strenuus was active in several fields and the inscription

¹⁶³² Oltean 2004 pp. 152-153. See also Oltean- Hanson 2007 pp. 113-137.

¹⁶³³ Ardevan pp. 1978 pp. 167-172.

¹⁶³⁴ CIL 3, 1493.

¹⁶³⁵ CIL 3, 1497.

¹⁶³⁶ CIL 3, 1501. Flavius Valens did not have occupied any role as a magistrate before becoming *patronus* of the association.

¹⁶³⁷ Téglás 1911 pp. 504-505= AE 1912 no. 76. Valerianus held no magistrature before reaching the position of *patronus*.

¹⁶³⁸ CIL 3, 1495.

commemorates him also as conductor *pascui salinarum et commerciorum*¹⁶³⁹. The case of Fabius Ibliomarus' family at Apulum can be considered as an interesting tale about the economic dynamic and relevance of local associations¹⁶⁴⁰: Fabia Lucilla, a descendent of a Fabius Ibliomarus who appeared as a merchant of Treverian origins in Apulum at the end of the 2nd century AD¹⁶⁴¹, was honoured as *mater collegiorum fabrum et centonarum* of the *Colonia Aurelia Apulensis*. The case of Fabia Lucilla well represents not only how important was the role of profitable and large economic ventures in provincial social context¹⁶⁴², but also how professional associations fit and merge into the local social texture.

Nature and purposes of these associations have been discussed in the past, and it has been often argued that *collegia* had rather a social importance than an economic role. New researches are however differently framing the question and re-evaluating the economic role of these social structures¹⁶⁴³. Even if the *collegia* were not "society" as intended today, they regrouped nevertheless entrepreneurs active in different sectors, strengthening their social positions but also reinforcing their economic action.

All the three cities of Apulum, Sarmizegetusa and Drobeta had possibilities and reasons to be heavily engaged in the supply of defensive and offensive weaponry. Each site had strong and reliable links with the mining district, and a favourable position granted an excellent connection with the main inland routes in the region.

Drobeta controlled one of the most important passages across the Danube, the town was strategically placed to function as an incredibly valued crossroads and the conjunctions of the Danube, a formidable route in itself, and the road that led to the Transylvanian plateau. Metallurgic activities are signalled *in situ* until the 6th century AD, when a large workshop was still active. From Drobeta, goods and materials could effectively travel north-south (in and out Dacia) and even west-east, easily moving along the river from one Danubian province to another. Drobeta was however relatively far away from the Transylvanian plateau. Producing weapons and armours in Drobeta and then bringing them to the soldiers deployed along the northern borders crossing the Carpathians may have been a complex and expensive operation. It is possible that a workshop was indeed active in the province, but its range must have been limited to the southern part of the region. Similar considerations can be advanced for Apulum

¹⁶³⁹ CIL 3, 1209. See also Mihailescu-Bîrliba 2016 pp. 51-58.

¹⁶⁴⁰ See Ardevan 2010 pp. 123-130.

¹⁶⁴¹ CIL 3, 1214.

¹⁶⁴² The two sons of Ibliomarus rose to the equestrian order: Aquileinsis went through all the *militiae equestris* (AE 1971 no. 385 and 1992 no. 1487), and his brother Pulcher held a procuratorian office (CIL 3, 1157).

¹⁶⁴³ Kloppenborg 2019 pp. 413-436 for a discussion on the topic.

also. Mining districts and other strategical assets were at the grasp of the provincial government, and the presence of governor's offices together with a strong military presence should have greatly boosted local development. Apulum was also near Colonia Ulpia Sarmizegetusa.

The inscription attesting *conductores armamentaria* can be misleading in this case. The presence of civilian contractors in Apulum can be easily understood considering the need to coordinate and to work with the office of the provincial governor, but it is nevertheless important to stress that the document does not mention manufacturing activities in the area per se: weapons and armours could be crafted elsewhere and then sold to the army.

Continuity and strategic position defined the case of Sarmizegetusa. The wealth of the Colonia clearly depended on the exploitation of local metal deposits. Members of the local élites had strong interests in gold and iron mines as well. The strategic position, at the heart of the province and along an important route, made Sarmizegetusa a potentially perfect logistic hub.

The strength and influence of the *collegia fabrum* in these three cities may indicate that local élites were heavily engaged not only in extracting gold and iron from the nearby mines, but also that the wealthiest of their citizens were open and attracted by the economic possibilities brought by managing contracts and subcontracts for the mighty imperial army.

In consideration of their position, their commercial and manufacturing vocation and in reason of the exceptional power and wealth of their élites, it should be argued that Colonia Ulpia Traiana Sarmizegetusa and Apulum constituted together the most important "support zone" for the imperial army in Dacia.

Both cities were well guarded and rich enough to have functioned as logistic hubs, and the easy access to both the Transylvanian plateau and the iron mines may have greatly favoured the development of a weapon making industry in the area.

There is no need to presume that a singular large workshop-complex existed in Apulum or in Sarmizegetusa: a concentration of artisans and weapon makers reunited in associations patronised by influent personages could have easily provided all the logistic support the army needed.

But the past can hide itself incredibly well, and at the end of a smoking trail the gun is still missing. The inference from absence comes in the end in the game: still no material traces of workshops in the area have been found.

The Irony of Iron- A Conclusion.

Absence and silence have stalked this research since the beginning. The abundance of sources is only apparent, and available data barely shed a direct light on military logistic during the central centuries of the empire.

Ancient historians have almost no hints to offer, and every information must be deduced from vague references and allusions. Inscriptions provide a puzzling image as well, and the epigraphic corpus is scattered both in time and space, making very difficult to explore and understand a specific situation.

Direct information on logistics are rare, but the volume of data becomes globally more consistent if we consider all the literary passages, the epigraphic documents and archaeological evidences that allows deductions on the topic. As a consequence of this peculiar situation, a strong theoretical model has been perceived as necessary to frame the interpretation of data available: only the adoption of a coherent historical paradigm could give meaning to otherwise isolated piece of information.

Vegetius' mention of legion workshops wherein soldiers' equipment was produced and repaired has for long driven the attention of scholars. Despite the source is biased, as Vegetius intended to propose a military reformer inspired by a certain vision of the past, the information has been generally considered trustworthy and it has argued that while the army of the late empire depended heavily on state supply, the legions for the high empire were able to produce at least a large of their own equipment.

The passage of the *Epitoma Rei Militari* has found some confirmations both in literary sources and in archaeology. The essay *De Munitionibus Castrorum* mentions indeed the *fabrica* among the buildings normally built inside a military base, précising its position in relation to the other structures of the fort. Several *fabricae* of different dimensions have been identified in *castra* along the Rhine, in Britain and in the Danube provinces as well.

Workshops in auxiliary forts have not been explicitly mentioned by literary sources, but *fabricae*-buildings have been identified on the terrain nevertheless.

The existence of this peripheral facilities has been interpreted at the light of model that can be called "the *fabricae*-system". Units *fabricae* remained the most essential elements of the organization and granted a certain autonomy to each military base, but local civil artisans played a part as well as they sold their products to the soldiers.

Due to the inhomogeneous distribution of evidences, the fact that this *fabricae*-system functioned in every region of the empire without significant alterations can be deduced only *e silentio*. Furthermore, many elements point rather against this model instead of supporting it and the model does not account very well the evolution towards the late antiquity logistic based on state-run productive hubs: the model looks static, a paradigm that abruptly changed around the 4th century AD when it was substituted by a new system.

The analysis of literary sources has confirmed that the imperial establishment exercised a certain degree of control over the production of military equipment, a control that does not appear compatible with disorganized network of unrelated and autonomous production.

Even imagining that models and blueprints were sent from Rome to the various provinces and workshops (a rather complex organization that presumes the existence of highly skilled military experts, engineers, and a very modern concept of statecraft) or that models and types were spontaneously adopted as consequence of contacts between soldiers from various regions and provinces (for instance, when an army was gathered assembling contingents from various provinces to launch a large scale campaign against a powerful enemy), it looks suspicious the degree of standardization in matter of military equipment reached by the imperial army during its history. References to weapon standards in both quality and type are difficult to understand presuming that every unit and every commander had full authority on the matter.

The frequent use of *vexillationes*, the adoption of recruitment procedures on local bases instead of on ethnic bases (effectively detaching auxiliary units from their original cultural background) and a promotion system for officers based on displacements from one unit to another are also difficult to understand in completely inhomogeneous army: soldiers had to share equipment, tactics and training to fight together in an effective way.

Claudius' military reforms offer already a precious insight on the matter as the adoption of a new equipment, archaeologically attested as well, could have been much easier to achieve if large logistic hubs existed alongside military workshops and small provincial atelier. Few passages of Tacitus referring to fully equipped recruits seem to confirm that *castra* workshops were not the only nor the major source of supply for military equipment: the *tirones* were marching to reach their assigned units when they had to face a group of Sarmatian raiders. Evidently, those soldiers were equipped roughly in the same way and they had received also a training with that specific equipment style.

The Hadrian age arguably represents the most meaningful moment of this historical development. A new sensibility towards equipment and training started to appear in the moment this new war culture became part of the imperial propaganda.

Hadrian shaped the figure of the emperor into the mastermind beyond every military success of the imperial armies: the action of the *princeps* was manifested through the mass drill exercises, to the introduction of new weapons and tactics and to a coherent policy of reforms and innovations.

For the first time, technological superiority was perceived as a determining factor to achieve victory on the battlefield. The case of Arrian's *Acies contra Alanos* is particularly striking in this sense: the battle plan was based on a innovative and massive use of field artillery and on dense barrage of javelins and arrows to break the charge of Sarmatians' heavy cavalry.

The imperial army under Hadrian was defined by the recruitment of newly and highly specialised formations, by the adoption of new weapons and by intense program of mass drills: the emperor is recorded on inscription for having personally overlooked such activities, confirming that the attention for soldiers personal training was not only an ideologically important element, but was also necessary to spread the knowledge and the use of the new weaponry among the army.

At the same time, weapons control was relatively effective in the Roman world. As the analysis of literary sources has demonstrated, challenging the might of imperial army was not an option for whoever tried to arise against the emperors. Brigands and rebels found themselves consistently outmatched by the better equipped and better trained imperial soldiers on the field, who often obtained victories against far more numerous opponents.

Legislation on the topic was rather vague, and evidently the imperial establishment managed to control the endemic violence in other ways, more likely by controlling the meaning of production. Even when weapons were secretly manufactured by civil workshops, an information that it attests a large engagement of civil society in logistic matters, or when a military or civil officer revolted against the emperor, it was not that easy to quickly and proficiently equip numerous soldiers.

It became quickly evident that only the most important provinces, where strong army were deployed and a vast network of facilities and infrastructures was put in place, could sustain the ambitious effort to challenge the emperor for the control of Rome.

The strength of provincial armies represented for sure a decisive factor, but in a long term run only the regions with a sufficient logistic organization could really have come chances in a prolonged civil war.

The absence manifests again its presence in the discussion: many data advocate the existence of a more layered and centrally planned military logistics, but a definitive and conclusive proof remains missing.

The application of the concept of strategic culture has however helped to overcome this difficulty by identifying and studying behavioural patterns of the military élites of the empire. Roman culture of war was dynamic and changed over times by recording and transmitting experiences, know-how and memoirs: at a same time, strategic culture influences and it is influenced by the behaviour of a strategic community. In the case of the Roman empire, the highest military ranks and the most prominent political figures that collaborated with the *princeps* represented the decisional élite in matter of foreign policy and war affairs.

Coherent patterns of problem solving have emerged as a consequence of this approach. The organization of large logistic hubs was a known practice in case of prolonged wars and it was arguably considered a reliable solution to sustain numerous soldiers in their activity.

The needs of a permanent army required some major adaptations to Romans' logistic network, and it is possibly that the imperial establishment applied solutions that have already worked in the in the past. While under the Republic, gathering supplies and workforce in fortified town and strongholds was a temporary measure adopted to sustain a campaigning army, under the empire those "hubs" became slowly more stable.

It is likely that the increasing involvement of imperial administration in various aspects of economic life of the empire was ultimately transposed also into this aspect of logistics. Possibly, what were at the beginning spontaneous organizations and gatherings of artisans were turned in 3rd and 4th century into more permanent state-run solutions, de facto establishing the system of large facilities that characterised late antiquity.

An alternative model can be therefore sketched as it follows.

In the aftermath of the last civil war of the Republic, a decentralised logistic was the easiest way to supply soldiers, charging the commanders along the frontiers with almost a full autonomy to provide whatever their soldiers needed. The system was however not flexible, and when the empire developed a stronger grip on provincial resources and society, consequently moving more and more troops at the borders of the empire, a network of logistic hubs were progressively put in place. It is possible that this evolution happened faster in the east, where a

stronger and denser network of urban centres existed already before the arrival of the Romans, while in Europe it possibly took more time to fully developed an urban texture. The continuous wars and the formation of strong provincial army boosted this historical dynamic towards further hubs, possibly until the creation of a sort of prototypes of later *fabricae* known for the late antiquity. These manufacturing facilities slowly shifted under the control of the empire and the process becomes fully visible from the 3rd and 4th century AD, when the imperial establishment attempted to take a full control over weaponsmiths in a desperate attempt to secure a constant flow of military equipment. Laws that tied specific class of artisans to their job seem indeed to confirm that the economy of the empire wasn't strong enough to naturally stimulate the growth and stability of manufacturing sites, thus forcing the establishment to take radical counter measures.

The model can be tested on a controlled situation. Potentially, Dacia represents a perfect case study: relatively isolated, the whole military network in the region had been organised in the immediate aftermath of the conquest to be later abandoned in 270 AD without having passed through major changing. Archaeological evidences in Dacia cover indeed the period of higher interest of this work, and it was expected to clearly detect traces of the evolution from a decentralised military logistics to a more complex and layered supply system.

However, the relatively limited extent of archaeological explorations and the techniques adopted have impacted on the quantity and quality of data available. Only few of the many Dacian forts have been extensively explored, while for the vast majority in the *castra* only very few or even no data are available.

The frequent use long and narrow test trenches has in particular distorted the image of the internal organization of many *castra*. The case of Porolissum is particularly noteworthy: the plan reconstructed on the base of test trenches has recently prove unreliable, and new excavations have demonstrated that the fort was arranged in a completely different way.

Considered these objectives difficulties, the present picture should be regarded as partial and largely incomplete. Gudea's distribution scheme in multiple lines has provided an organizational principle to present the *castra* in Dacia Porolissensis and Superior, but it is unlikely that the distribution in concentric circles truly reflected the functionality of the network.

The concept of "cluster" has been adopted instead, meaning with it a group of forts and units that likely shared the same strategic purpose.

Forces stationed in Dacia Porolissensis were distributed for the largest part along the frontiers, with some “reserves” in the interior of the province. The inland routes and mountain passes along the borders were overlooked mostly by infantry units or *cohortes equitate*, while cavalry troops were deployed in a secondary position. It is possible nevertheless to recognize cluster of troops (the Crisul Repede cluster; the Porolissum Cluster/Meses Gate Cluster; the Almas cluster; the Somes Cluster) extended from the border to a mid-area that corresponds to Gudea second line. The heart of the Transylvanian plateau was occupied by the *V Macedonica* legion, with minor military presence in the east (East Flank cluster).

A similar organization defined also Dacia Superior military network, but in this case the inland route axis oriented north-south represented the most important factor (Varadia axis; Dierna Axis, Drobeta Axis, Tibiscum axis, Mures axis).

Control of the land was evidently a priority for Roman forces in the region, surely more than repelling potential attacks, but the deployment was conceived in a way that facilitated the fast gathering and assembling of troops to launch offensive campaign over the imperial borders. For the purpose of the present discussion, only traces of metallurgic activities in *castra* and in nearby *vici* and *canabae* have been taken into consideration as workshops that almost certainly produced for the army.

The distribution of traces of metallurgic activities in military sites or in the civil settlements connected to them can be labelled as a low-intensity pattern: traces are frequent, but not particularly impressive on quantity.

Few recurrence elements can be detected nevertheless.

- Forts garrisoned by cavalry units have provided more consistent traces of metallurgic activities in general. The fact can be discarded as accidental, but it is also possible that mounted troops “consumed” more metal than infantry counterparts, and they required more active workshops as a consequence. Horse harness and horse-shoes had to be crafted, repaired and replaced relatively often, it was surely easier having a small workshop in the fort instead of commanding orders from outside.
- Troops with a more specialised equipment had more specific need in matter of offensive and defensive weaponry. This was especially true for eastern bowmen, who used the expensive composite bow, and possibly also for Mauretanian skirmishers, who maintained tactics and fighting style of their own culture. Specialised craftsmen and artisans possibly followed these units to assure reparation and production of every pieces needed. The workshops in Micia, a fort garrisoned by

Levantine archers, where bone stiffeners were produced to assemble and repair composite bows provide a good example for it.

- Communication networks played a more important role in the south-west corner of Dacia, where multiple roads crossed the Danube and proceed north reaching Apulum and Sarmizegetusa. The presence of important mining districts in the area boosted metallurgic activities, and *castra* built at the verge of important routes (such as Tibiscum or Micia, this last one with strong connections with local iron mines) benefitted of the situation. Along the Danube, Dierna and Drobeta secured strategic passages across the river and functioned as logistical hub to supply soldiers and officers moving north. The strategic position, the easy access to raw materials and the possibility to exploit the Danube as commercial route made possible the flourishing of bronzeworking and ironworking as well.

Globally, bronzeworking is curiously better attested than ironworking, despite the fact that iron was cheaper and more widely used for weapons and tools. Large facilities have however not been detected.

When identified, military workshops in Roman Dacia have proven to be relatively small buildings with a limited productive output. In many cases, metalworking was confined to some rooms of the commander's building or performed open air.

Even in the largest fort of the province, Porolissum and Potaissa, huge metalworking facilities have not been identified and crafting activities are attested only indirectly through slags and crucibles.

At the present state of research, the *fabricae*-model seems not to apply very well to the Dacian provinces: the army deployed in the region lacked the facilities and the infrastructures to produce huge quantity of equipment. Identified workshops could repair and maintain weapons and armours in use, but soldiers had to rely to different sources of supply in case of need. *Vici* and *canabae* could not change the situation: commercial activities identified in civil settlements have not provided clear indications that artisans predominantly dealt with the production of weapons and armours, and apparently complementary pieces (such as fibulae) represented the most conspicuous productions of those workshops.

It is possible that ateliers have not been archaeologically identified because of the limited area excavated for each site or as a consequence of the frequent adoption of long and narrow trenches, a technique that does not allow to study the spatial distribution of findings and, as a consequence, that makes more difficult to understand the purpose of a building.

The alternative model based on the compresence of peripheral workshops and large, central logistic hubs seems however to offer a plausible solution.

Framing the quest goals and data use in a logic way has been an experimental approach to the topic, but it proves that negative data on a provincial level can be rightfully used as meaningful information nevertheless.

It appears indeed more unlikely that military workshops in *vici* or *castra* have systematically escaped archaeological investigations. It is instead more plausible that logistic hubs were organised elsewhere in the province, possibly in well-connected urban centres with strong defences. In the second proposed model, the largest part of the production of military equipment was entrusted to civil entrepreneurs and associations who worked under contract to supply the army.

Three centres fit the parameters: Apulum, administrative and military capital of the province; Colonia Ulpia Sarmizegetusa, arguably one of the most dynamic and rich town of the area with a strong connection with mines exploitation; Drobeta, that guarded the most important passages across the Danube and secured contacts with the northern area with the southern provinces.

All three cities were rich economic centres with strong connections with the rest of the province and, more importantly, with the mining districts and commercial routes of the region.

As in the rest of the empire, also in Dacia the most valuable assets were strictly controlled by imperial administration: procurators were detached to manage the salt mines of Transylvania, the golden district of Ampelum and the iron mines of the south-west Carpathians as well.

The organization was still not rigidly under state monopole, but the imperial establishment could obtain valuable resources at the cheapest way possible by the system of fees and contracts that regulated mining exploitation at the time. The extraction of metal from the ores was controlled as well by imperial officers, even if probably carried by civil entrepreneurs.

With the first part of the supply chain firmly under imperial surveillance, the provincial authorities had only to regulate the market in order to obtain good weapons at the cheapest price possible.

In all three cases, *collegia* of blacksmiths and artisans are attested by inscriptions. Those associations appear to have been rich and powerful, with prominent *patroni* and strong connections with the imperial power. Civil entrepreneurs (*negotiatores*) are known as well from Dacia, confirming that the wealthiest elements of the civil society were interested in army contracts.

If indeed those artisans and associations were willingly to work with the empire, the provincial government had all the reason to search for this collaboration.

Dacia was indeed a strongly garrisoned province, wherein the army had a notable influence. The fact that many of the known governors of Dacia were top-tier officers and imperial advisors confirm that the region was perceived as somehow problematic and that required substantial forces to be held. Besides challenging raiders and controlling the neighbouring populations, whose raids stroke sometimes deep in the earth of the province, Dacian troops participated in all the major conflicts in the area during the 2nd and 3rd century. It looks plausible that due to the economic possibility and because of the prolonged state of warfare, imperial authority had adopted a more stable and permanent solution to reduce the logistic friction in the area.

Unfortunately, Trajanic phases in many *castra* have been obliterated by later reconstruction, but it seems that the original internal plan had been roughly maintained in many cases.

With just one legion at the beginning of the 2nd century AD and with just small workshops in forts occupied by auxiliary troops, it seems that the original military network reflected already a situation in which the army relied on external facilities for the supply of military equipment. The evolution during the late 2nd century and through the 3rd century remains consistent with the theoretical paradigm: no workshop facilities was expanded in military forts, suggesting that evidently the army did not need those structures to manage the supply chain. On the contrary, the power and wealth of collegia remained strong, boosted by the exploitation of iron mines and by the never-ending demands of the soldiers.

The study of military logistic at the level of a whole province had indeed offered some interesting insights on the way the imperial administration organised and managed this important aspect of ancient warfare, and it has helped to understand the evolution from the high empire to the late empire of many elements of the military administration.

Dacia remained however a partially unexplored case studies, further archaeological excavations and research will hopefully help to know more and could change the resulting image.

It is also extremely possible that military logistic was organized differently in other provinces, and that other region underwent through a different development. The case of Dacia remains however paradigmatic in being the only province fully organised and abandoned during the 2nd and 3rd century AD, when it is most likely that the empire experienced a long transitional period from its peak to the catastrophic crisis of the military anarchy.

The present work has attempted to demonstrate that the use of conceptual tools borrowed from many fields and the consequent development of a strong theoretical model could frame the research towards new horizons, giving new meaning to old data and opening to new perspectives. Unfortunately, despite a whole new arsenal of theoretical weapons and tools, the past will be always extremely good to hide itself.

Figures.

1 - Maps of Dacia:

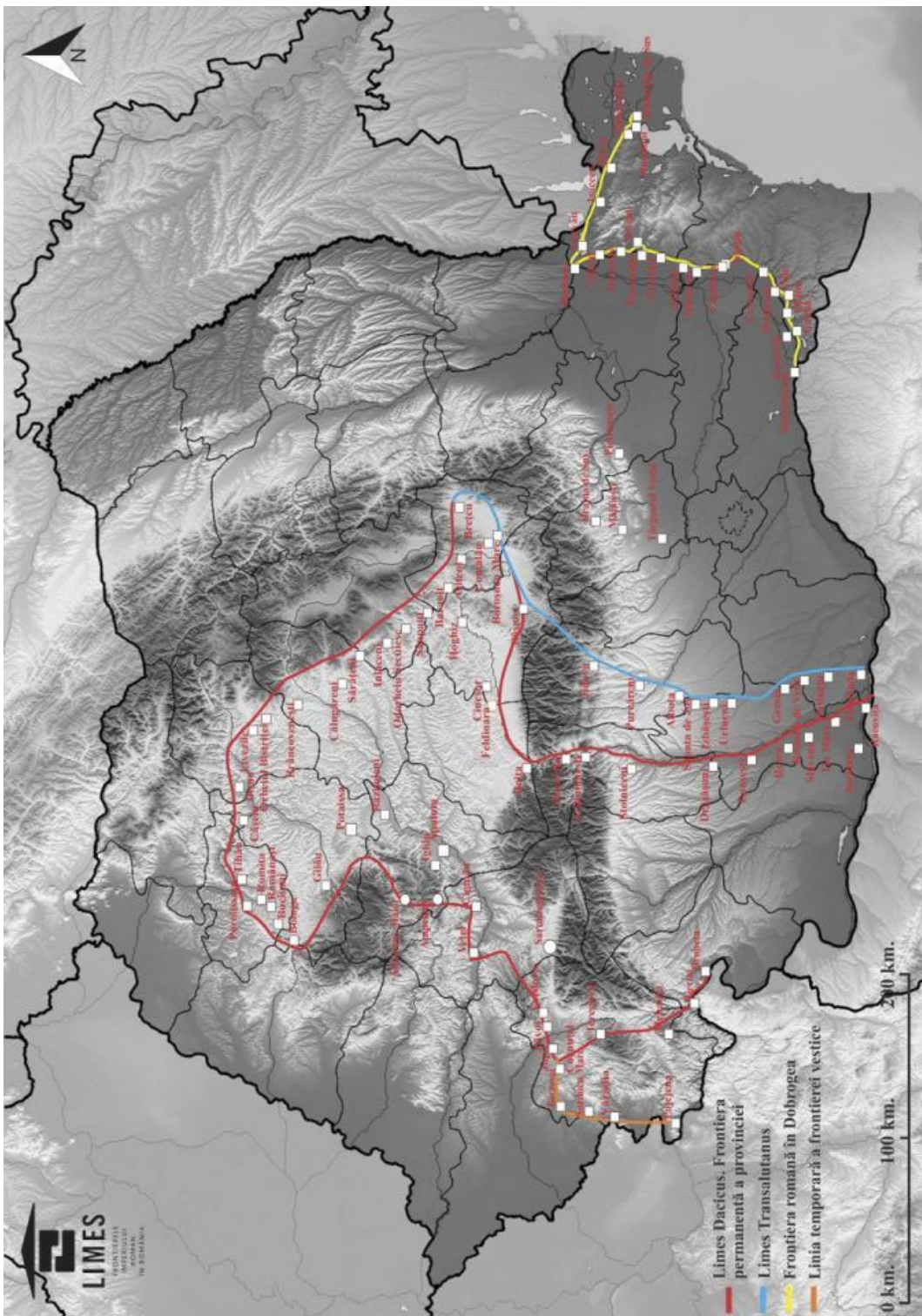


Figure 24 The "limes" of Roman Dacia: military camps and borders. From the Romania Limes Project.

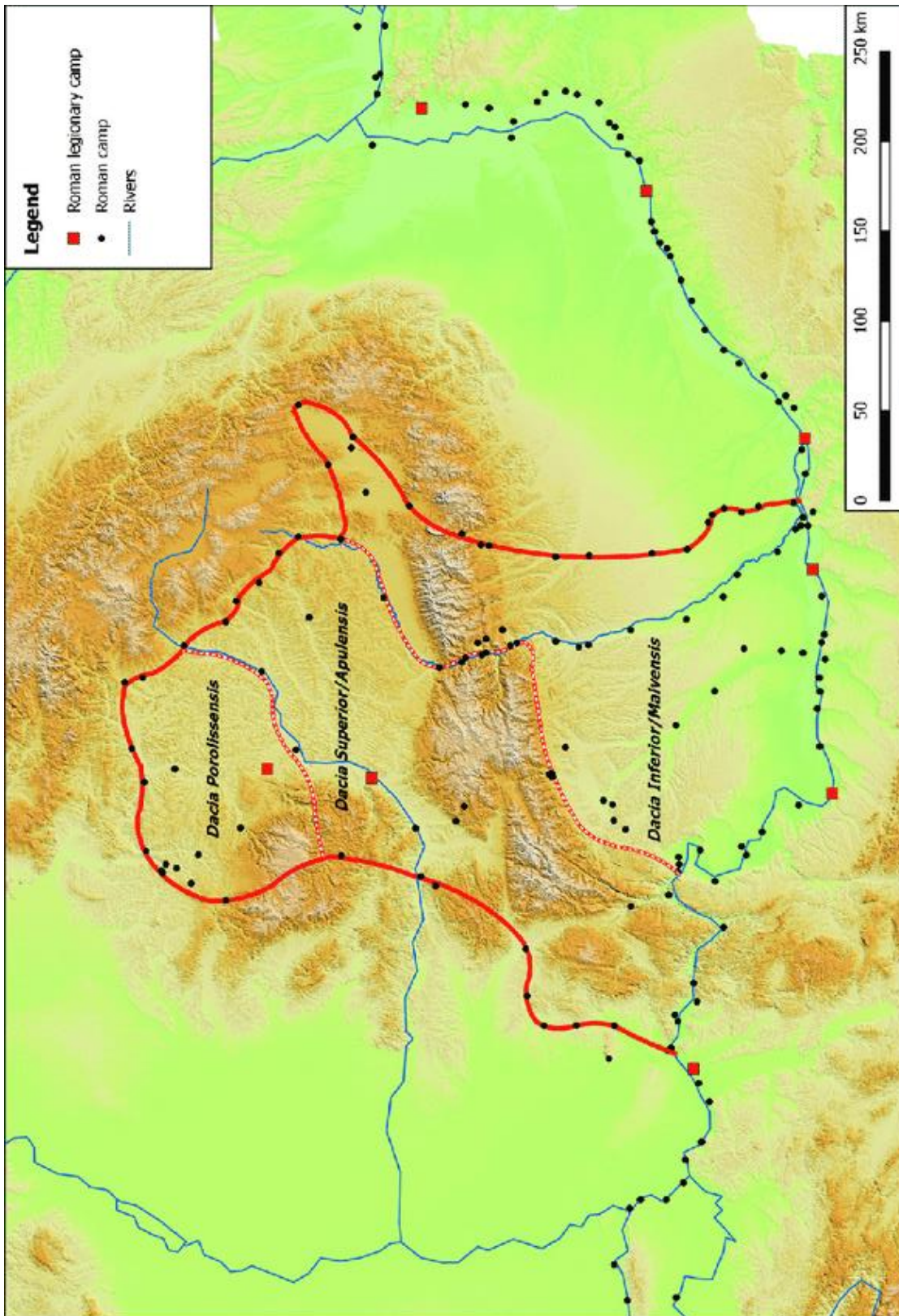


Figure 25 Administrative division of Roman Dacia, from Lazarescu 2016. The map shows the administrative organization in Dacia from the time of Marcus Aurelius onwards, with two legions deployed in the province.

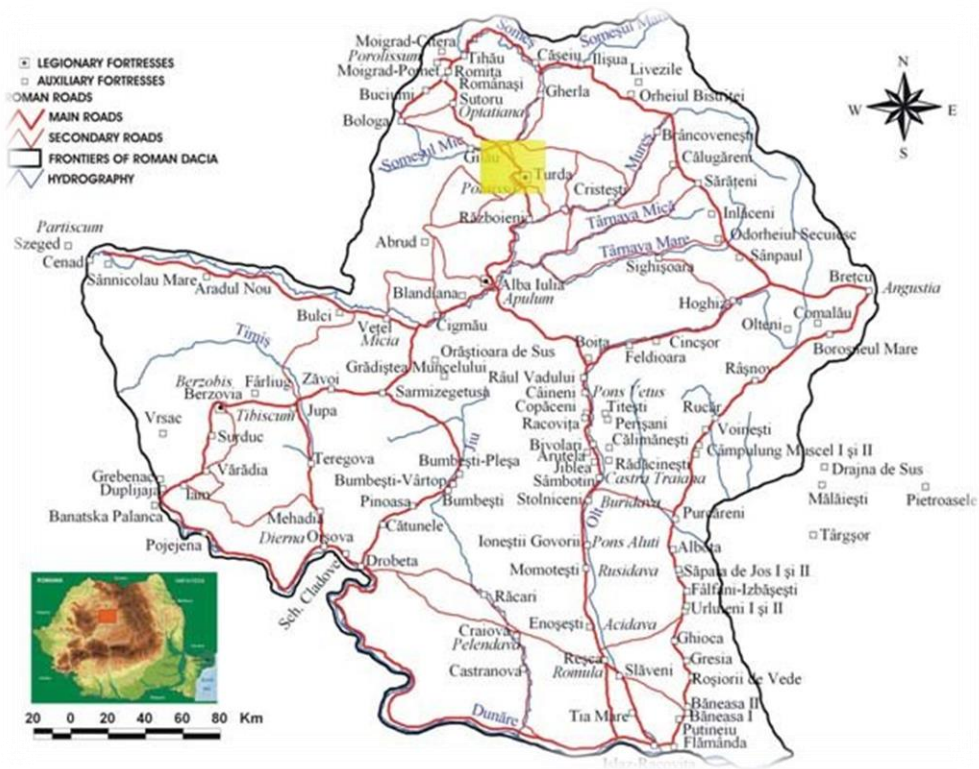


Figure 26 Road system in Roman Dacia - From Fodorean-Fodorean-Moldovan 2013 p. 44.

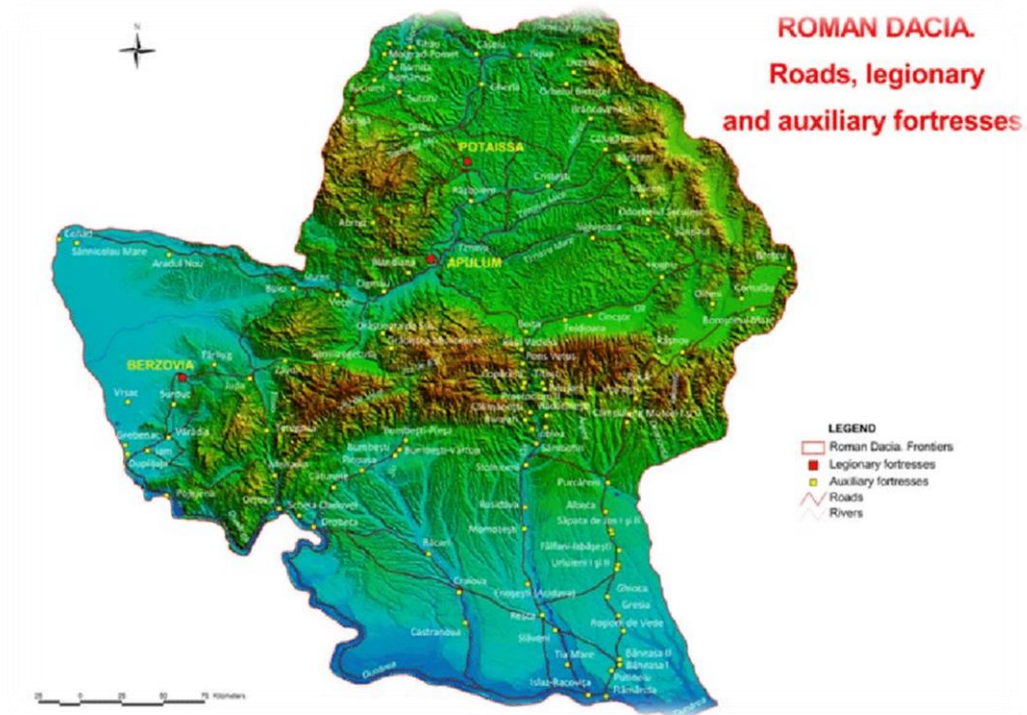


Figure 27 Road System of Roman Dacia 2 - Morphology. From Fodorean-Fodorean-Moldovan 2013 p. 41.

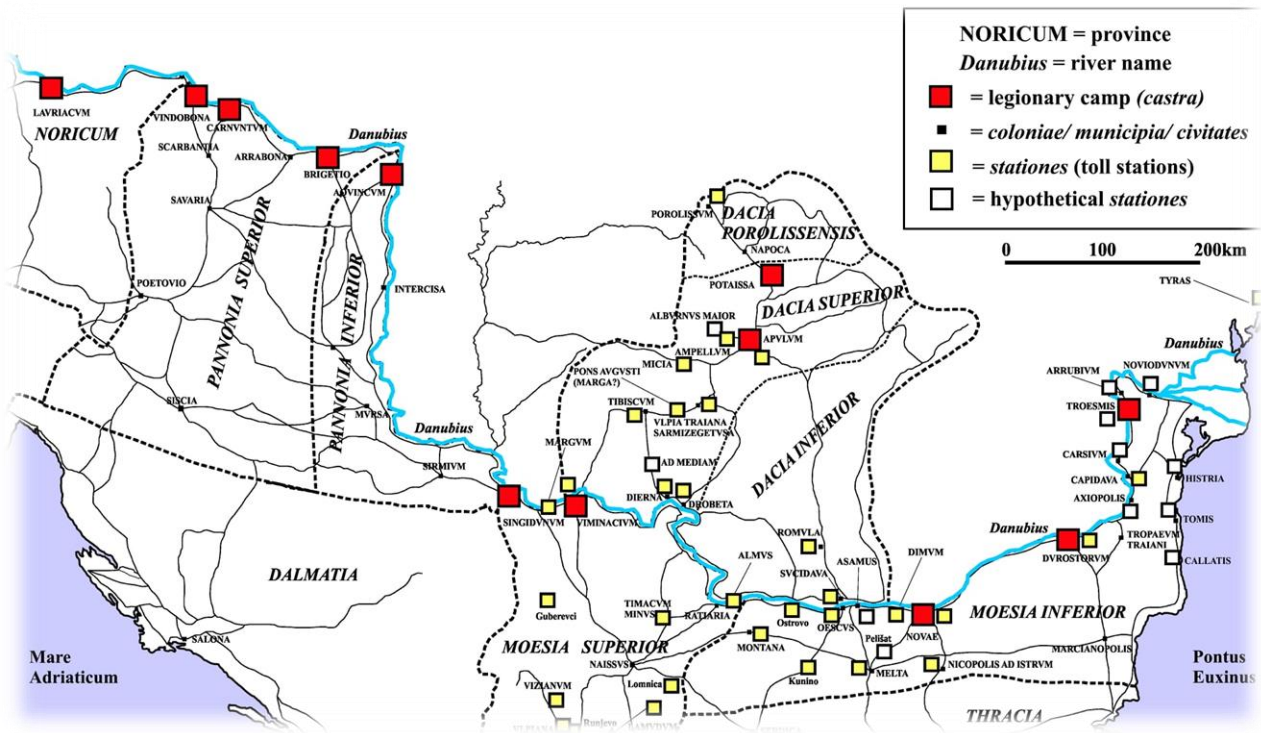


Figure 28 Custom offices and portorycum organization in Danubian provinces. From Limes Project: Limes n. 5/2019 p. 41.

The internal road system of Roman Dacia appears clearly defined by the complex morphology and orography of the area, with the few easy access from the south across the Carpathians exploited as main communication axes.

Active at the main entrances of the provinces or at the most important crossroads, custom offices assured that a capillary imperial control over the movements of goods and persons in the area.

It emerges from the map also a superior attention for the roads leading towards north west: routes departing from Porolissum could reach the central Europe or Germany, allowing an intense and profitable commerce with the nations in the *barbaricum*.

It is noteworthy to signal that the road from *Micia* to Partiscum/Szeged should not be considered as a border demarcation, as it appears instead in the figures 3 and 4. Roman Dacia border in the south-west corner of the province followed more closely the slopes of the Carpathians, as it is shown in maps number 1 and 2.

2 – Defensive System of Roman Dacia, Gudea's Scheme.

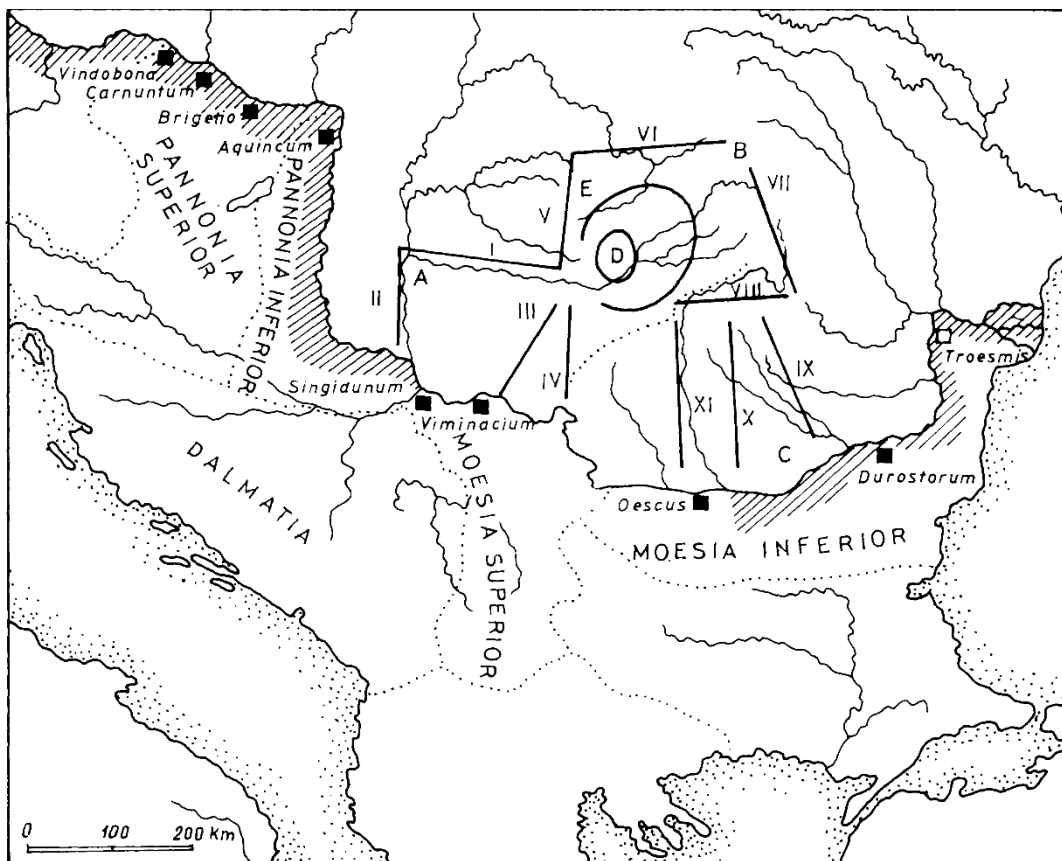


Figure 29 The Defensive System of Roman Dacia, According to Gudea 1979 p. 74.

As it has been discussed before, Gudea imagines the defensive system of Roman Dacia as a perfect preclusive system intended to oppose multiple lines of defences against any attempt to penetrate into the province.

According to this base assumption, the I Sector, running approximately from Micia to Partiscum, has to be followed by the II Sector to form the block A of Dacian South-West defences. There is however no proof that this Second Sector really existed. It is generally considered now that the border of Roman Dacia in the west was rather constituted by the sectors III and V, while the road that connected Partiscum to Roman Dacia was no more than an organised and patrolled route towards Pannonia.

Similarly unclear is the IX Sector in the east, composed by just few camps that were possibly intended to block mountain passes and that were not intended to represent a real preclusive line extended until the Danube.

As Gudea however explicitly states in his paper, the scheme is intended to provide a system to catalogue and organise Roman military camps in the area, it does not offer *per se* any indication about how the local defensive system worked.

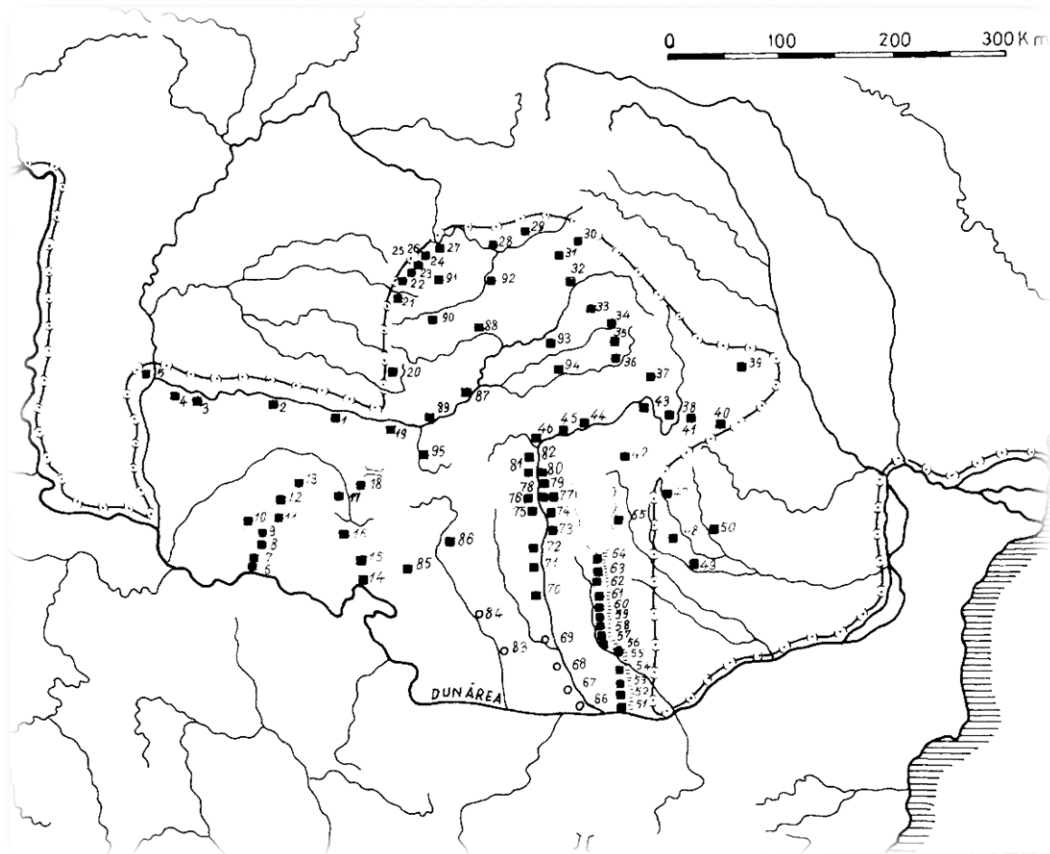


Figure 30 – Roman Forts in Dacia, From Gudea 1979 p. 72.

Roman Fortifications in Dacia, according to Gudea 1979 (pp. 86-87). Proposed identification between modern and ancient names are between parenthesis:

A – South West Dacia.

Sector I: 1 – Bulci; 2 – Aradoul Nou; 3- Sinicolaul Mare; 4 Cenad; 5- Szeged (*Partiscum*)?

Sector II: No camps identified insofar.

Sector III: 6 – Banatska Palanka ?; 7- Duplijaja; 8 – Grebenac; 9 - Varadia (*Arcidava*); 10- Vršac; 11- Surduc (*Centum Putei*); 12 – Berzovia (*Berzobis*); 13- Firlig (*Aizizis*).

Sector IV: 14- Orșova (*Dierna*); 15- Mehadia (*Praetorium*); 16- Teregova (*Ad Pannonios*); 17 – Jupa (*Tibiscum*); 18- Zăvoi.

B – The Transylvanian Plateau.

Sector V: 19 - Veșel (*Micia*); 20 - Abrud; 21- Bologa (*Resculum*?); 22 – Buciumi; 23 – Romanași (*Largiana*); 24 – Romita (*Certie*); 25-Moigrad Citera (*Porolissum*); 26 – Moigrad Pomet (*Porolissum*).

Sector VI: 27 – Tihau; 28 – Cașeiu (*Samum*?); 29 – Ilișua; 30- Livezile; 31 – Orheiul Bistriței.

Sector VII: 32 - Brincovenești; 33 - Călugăreni; 34 – Sărăteni; 35 – Inlăceni; 36 – Odorheiu Secuiesc; 37 – Sinpaul; 38 Olteni.

Sector VIII: 39 – Brețcu (*Angustia*); 40 - Boroșneul Mare; 41- Comalău; 42 – Rignov (*Cumidava*); 43 – Hoghiz; 44 – Cincșor; 45 – Feldioara; 46 – Boita (*Caput Stenarum*).

C – South-east Dacia.

Sector IX: 47 – Drajna de Sus; 48 – Mălăiești; 49 – Tirgșor; 50 – Pietroasele.

Sector X Transalutanus: 51 – Flămînda; 52- Putineiu; 53 – Băneasa I; 54 – Băneasa II; 55 – Roșiorii de Vede; 56 – Gresia; 57 – Ghioca; 58 – Urluieni I; 59 – Urluieni II; 60 - Fîlfani Izbășești; 61 – Săpata de Jos I; 62 – Săpata de Jos II; 63 – Albota; 64 – Purcăreni; 65 – Cîmpulung Muscel; 65a – Rucăr.

Sector XI: 66- Islaz Racovita; 67 – Tia Mare; 68 – Slăveni; 69 Enoșești (*Acidava*); 70 – Momotești (*Rusidava*); 71 Ioneștii Govorii; 72 – Stolniceni (*Buridava*); 73 – Sîmbotin (*Castra Traiana*); 74 – Rădăcinești; 75 – Jiblea; 76 – Bivolari (*Arutela*); 77 – Perigani; 78 – Titești; 79 – Copăceni; 80 – Racovița (*Praetorium*); 81 – Riul Vadului; 82 – Ciineni.

Sector XII: 83 – Răcari; 84 – Craiova (*Pelendava*); 85 – Cătunele; 86 – Bumbești Vîrtop.

D – Central Defence.

87 – Alba Iulia (*Apulum*); 88 – Turda (*Potaissa*).

E – Intermediate Defence Circuit.

89 – Cigmau; 90 – Gilau; 91 – Zutor (*Optatiana*); 92 – Gherla; 93 Cristești; 95 Oraștioara de Sus; 96 – Razboieni.

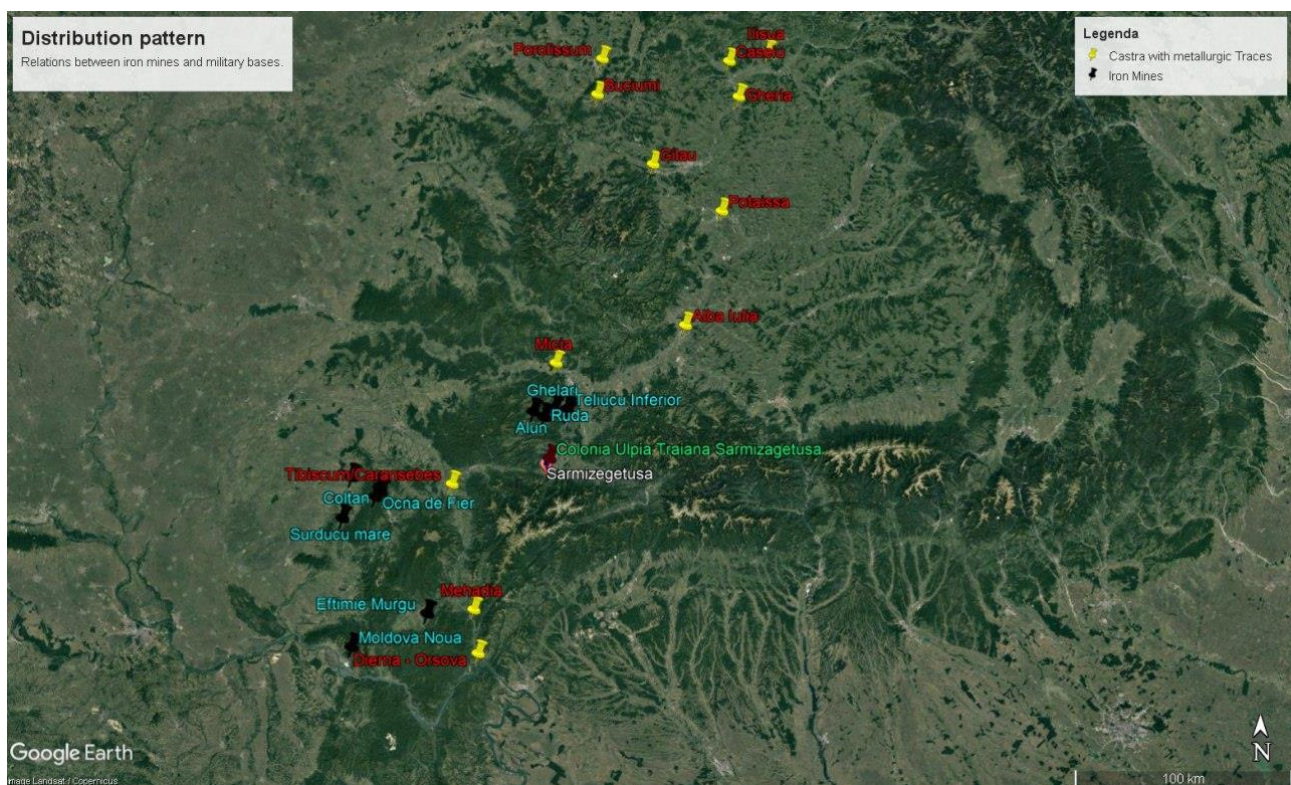


Figure 31 Black pins approximately mark modern day village around which ancient mines are known; yellow pins mark those castra that present more consistent traces of metallurgic activities; the red pin represents Colonia Ulpia Traiana Sarmizegetusa – made with Google Earth.

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List of Abbreviations:

CIL – *Corpus Inscriptionum Latinarum*, Berlin.

DA - Ch. Daremberg and E. Saglio, *Dictionnaire des Antiquités*, 5 Volumes, Paris 1877-1919.

ILD – C.C. Petolescu, *Inscripții Latine din Dacia*, București, 2005.

ILS – H. Dessau, *Inscriptiones Latinae Selectae*, Berlin, I (1892), II (1902), III (1916)

IDR – *Inscripțiile Daciei romane*.

IDRE – C.C. Petolescu, *Inscriptiones Daciae Romanae. Inscriptions externes concernant l'histoire de la Dacie, I-II*, București, 1996-2000.

PIR² – *Prosopographia Imperii Romani, saec. I-III*, Second Edition, Berlin-Leipzig

RE – A. Pauly, G. Wissowa, *Realencyclopädie der classischen Altertumswissenschaften*, Stuttgart, 1893.

RMD – M.M. Roxan, P. Holder, *Roman Military Diplomas*, 5 vol., London, 1978–2006.

TIR – *Tabula Imperii Romani*, Bucharest 1969.

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