Later prehistoric and Roman rural settlement and land-use in western Transylvania

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Abstract:

The present study analyses Roman-native interaction from a landscape perspective in a core territory of both Iron Age and Roman Dacia. The study area includes the royal Dacian heartland (the Orastie Mountains) and its surrounding lowlands, and also the hinterlands of *Ulpia Traiana Sarmizegetusa* and *Apulum*, the two most important Roman towns in the province.

The research considers the nature and distribution of lower-order settlements in the pre-Roman and Roman periods, human impact on the local landscape and the changes which occurred as a result of the Roman occupation. Also, it addresses previous biases of interpretation through re-evaluation of earlier data and consideration of new datasets provided by the interpretation and mapping of recent oblique aerial photographs. New detailed plans of the sites discovered through aerial photography have been integrated within a significant amount of scattered published data (excavation and field walking reports; gazetteers) and relevant information from historical maps. All the material has been analysed utilising a relational database linked to a GIS. In this way the spatial distribution of settlements of various types and function, or the relationship between settlements and natural resources or topography, has revealed patterns indicative of the factors which may have influenced their evolution.

The results provide a complex reconsideration on a more realistic and up-to-date basis of previous theories regarding the native settlement pattern and the impact of Roman colonisation in the chronological and geographical context specified. Also, through the resulting database and GIS, it provides a methodological framework and a customised tool for further analysis of the landscape and of the evolution of the settlement pattern which can be extended throughout the province of Dacia and into neighbouring areas. Finally, it creates a useful source of analogy or contrast for Empire-wide studies of romanisation and Roman-native interaction.

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Ioana Adina Oltean
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Dedicated to those long summer
nights at Sarmizegetusa

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Chapter 1: Background, limitations, aims, approaches and methods

1. The current state of research on rural life in Roman Dacia:

The particularity of Roman Dacia is that its rather short life within the empire covers the 2nd and most of the 3rd century AD. Therefore, it covers the period when the Roman Principate experienced both the peak of its power, as well as the onset of decay. Created by Trajan, in the age of the greatest territorial extent and power of the empire, it ended up being abandoned later in the 3rd century AD because of political infighting within the empire and the failure to control its boundaries. The reasons for the conquest were both strategic and political. By the end of the 1st century AD the empire had refined its approach to conquest and further organisation of new provinces. The period covering the 2nd and early 3rd centuries AD is generally accepted as the most characteristic of Roman imperial rule and, therefore, serves as a model in various comparisons. Consequently, studying the implementation and impact of Roman administration within new territories, as exemplified by Dacia, gives a unique opportunity to reveal the pattern of conquest at the height of Rome's power.

One of the great expressions of Roman power in the conquered territories is the impact on the natural and cultural landscape. The current orthodoxy concerning the impact of Roman occupation on Dacia, the implementation of Roman rule and development of the provincial landscape, could be summarised in four main points that seem to have been generally accepted. Firstly, the Roman conquest is seen as a dramatic event, involving massive colonisation. Several literary sources describe the process, among which Cassius Dio and Eutropius seem to give most details. Cassius Dio (L XVIII 14, 4) refers to Trajan's policy of colonisation: *"καὶ οὕτως ἡ Δακία Ῥωμαίων ὑπήκοος ἐγένετο, καὶ πόλεις ἐν αὐτῃ˜ ὁ Τραϊανὸς κατῴκισεν"* ("In this way Dacia became subject to the Romans, and Trajan founded cities there"). Later Eutropius (VIII 6, 2) wrote, concerning Hadrian's policy on Trajan's conquests at the beginning of his reign: *"Idem de Dacia facere conatum amici deterruerunt ne multi cives Romani barbaris traderentur propterea quia Traianus victa Dacia ex toto orbe Romano infinitas eo copias hominum transtulerat ad agros et urbes colendas, Dacia enim diuturno bello Decibali viris fuerat exhausta"* (he wanted to do the same in Dacia but his friends persuaded him not to deliver large number of Roman citizens to the barbarians because after his victory against Dacia, Trajan transfered a considerable number of people from all around Roman world to occupy its lands and cities; Dacia was indeed depopulated by the long war against Decebalus). Both examples suggest that the phenomenon was important enough to come to the attention of ancient historians (for the most recent discussion see Ruscu 2004) and, at least at a superficial level, the archaeological evidence appears to support these records. Secondly, it is stated that the native Dacian population was moved from their hill forts and settled in the lower areas,

which were easier for the Roman army to keep under control. The archaeological study of the major Dacian hill forts seems to indicate that their violent destruction occurred within the chronological context of the conquest (Glodariu 1993, 15). Moreover, it seems that there is no evidence that any of these sites continued to be occupied during the Roman period. Thirdly, it is generally asserted that the Roman policy of colonisation was rather brutal, with the authorities depriving the natives of their lands for town foundations, for colonists and veteran's land holdings that established villa estates, for army needs and for imperial estates (Protase 1968, 510). Finally, however, it is believed that the natives lived in harmony with the colonists and romanised themselves during the two centuries of Roman occupation. Together they constituted the population that continued to settle these lands after the Roman administrative and military retreat from Dacia at the end of 3rd century AD (see Protase 1980, 228-252). The inconsistency and internal contradictions within these assumptions will be highlighted below.

J. Kolendo (1994) states that the Roman provinces along the line of Danube were all characterised by a rural type of civilisation, because in these areas the model of the ancient city could be applied only in part. His conclusion is based on a comparison with the urban development pattern seen in the provinces of Northern Africa or Gaul. In order to make an analysis of the evolution of the area, he uses mainly epigraphic sources that provide him with information on the urban status of settlements. Also, through the interpretation of the use of the *natio (natione)* for designating the *origo* of the person within the text of several inscriptions from the Danube area, he tries to explore the mentality behind these peoples' attitudes. Unfortunately, this results in his supporting argument being based entirely on the study of the urban context and not on a study of rural sites and the landscape. He, as with many others, takes into account as falling into an urban category only those sites with municipal status, whether *municipia* or *coloniae* proven by the epigraphic sources, without any consideration of the real function of the settlements themselves. Also, even though he is aware of some of the factors that would have influenced the number of chartered settlements within a province, such as the presence of imperial estates, or *civitates peregrinae,* or the nature of the pre-Roman cultural background, he fails to address the issues within a broader landscape context and produce a conclusion based on an analysis of the settlement pattern. As a result, his quantitative judgements cannot have a realistic basis and some of his interpretations seem to push the evidence to extremes.

I have chosen to begin with this particular study because it is, in my opinion, symptomatic of the kind of archaeological study that has been in vogue in Romania for some time now. In order to justify the approach taken in my own research, I will try to analyse the way rural life in Roman Dacia in particular, as well as provincial archaeology in general, has been approached so far. Despite the efforts made during the 20th century, archaeological research on rural settlement in Roman Dacia so far has been approached only sporadically and with a low priority. Research has tended to concentrate on military and urban sites, the latter restricted predominantly to sites with proven municipal or colonial status (see above). Thus, a significant number of sites that, as far as we are aware, did not achieve municipal status have been somehow neglected. This category would cover sites that are accepted elsewhere as having at least a semi-urban function (e.g. Burnham and Wacher 1990). The first decades of the 20th century saw the beginning of considerations of rural settlements

with excavations at several villa sites, many of them still extant at that time, such as Manerau in 1912, Apahida or Garbou in 1913 (see Mitrofan 1973, 127-150, with full bibliography for the first publication of these early excavations). More attention was given to the rural sites after the World War II though for different, this time political, reasons linked to the agenda of the communist regime. The Romans were depicted as the imperialist robbers of Dacian land whose previous occupants become servants on the estates of the Roman colonists. Also, attention focused on the native "working masses" rather than on the survival of the native elite (detailed later in this chapter). Excavations were conducted on sites of *vici* or cemeteries belonging to them (eg. Obreja, Soporu de Campie, Bratei, Cristesti, Micasasa -see Protase 1998; Protase 1980, 38-85 with bibliography; Husar and Man 1998, Mitrofan 1999). Similarly, several villa sites were also researched, such as Hobita, Deva, Santamaria Orlea, Aiud, Cincis, Chinteni (Mitrofan 1973, 1974 and 1976; Floca 1953; Popa 1972; Winkler *et al.* 1968; Floca and Valea, 1965; Alicu 1994 and 1998).

Efforts have been made to record all archaeological sites within the territory, improving the older data with new information obtained through field walking. Unfortunately, an ambitious project to produce a general archaeological gazetteer of Romania which was started decades ago was never completed, though in some cases it resulted in the publication of regional gazetteers of several counties or geographical areas. For most of the discoveries, however, the information is scattered in studies at various levels of comprehensiveness published in various Romanian archaeological periodicals. At the time of its appearance, Tudor's book '*Orase, targuri si sate in Dacia Romana*' (1968) was the largest collection of published information on Roman settlements in Dacia that specialists could rely upon, despite its bad reviews (Daicoviciu, 1969). But now after more than 30 years the information needs to be updated, and the same applies to the *Tabula Imperii Romani* (L 34-Budapest and L 35-Bucharest) whose information continues to be used by the editors of historical atlases (such as Talbert *et al.* 2000). In 2000, the Institut de Memorie Culturala, Bucharest (cIMeC), started another ambitious project to create a large database of the archaeological sites of Romania accessible on the internet to scholars internationally, through a European Union funded project (http://archweb.cimec.ro/ -last visited 08.05.2004).

The antiquities of Roman Dacia have attracted interest since the Renaissance, and it is the reports of antiquaries and scholars, along with early mapping projects (see Figures 1.1-1.2), that constitute the main testimony to the degree of preservation of archaeological sites. Indeed, up to the 20th century these were still visible on the ground, despite sporadic or sometimes extensive damage such as stone robbing or marble burning. But only a hundred years later, at the beginning of the 21st century, the landscape is very much changed. The two World Wars of the previous century resulted in great damage to archaeological sites in Romania as in the rest of Europe. Moreover, successive political leadership movements thereafter generated changes within the property system and, therefore, in allotment systems and ploughing patterns. Modern development, and especially the deliberate policy of heavy industrialisation of the country mainly after the Second World War, also produced great disruption in landscape (Oltean 2002, 224). The transformation of the agricultural process into a communist system, which started in 1949 and ended in 1962, was based on the creation of new agricultural units owned and exploited collectively by groups of individuals (CAP) or the state (IAS)

(Constantinescu *et al.* 1970, 386). In fact, this involved on the one hand the recognised expropriation of larger private estates by law (The Nationalisation of the Main Production Resources Act of 11 June 1948), and on the other the 'persuasion' of the peasants to gather their properties into CAPs. As a result new field boundaries were established. Within the 'planned economy' system, intensive exploitation replaced the traditional extensive approach to agricultural production, which meant that arable cultivation covered 63% of the surface of Romania (Constantinescu *et al.* 1970, 410) and that deep ploughing techniques, de-forestation, re-forestations and the conversion of marshes into arable lands were all taking place. On the other hand, the main focus of the 'planned economy' was the accelerated industrialisation of the countryside, with a special preference for heavy or chemical industries which registered a dramatic increase in the rate of development from only 4% in 1938 to 13.4% since 1960 (Constantinescu *et al.* 1970, 410). Massive industrial installations such as Hunedoara, Calan, Mintia, Orastie and Ocna Mures emerged in the landscape (see chapter 2 and figure 2.3). Artificial lakes covered modern settlements as well as archaeological sites. The biggest example is the Iron Gates I on the Danube, but within my research area there are similar examples at a smaller scale at Cincis (see Floca and Valea 1965) Ostrov and Hateg (Popa 1989; see figure 2.4). The road, gas and electricity networks also developed on a large scale. All these combined factors have impacted on the visibility of sites on the ground or even destroyed them completely. Now Romania is going through a new phase of massive development especially in transport facilities, with the construction of motorways and the development of the current road network, and industrial exploitation. The most famous example of the latter is the gold exploitation concessions in the Apuseni Mountains that will completely remove several archaeological sites of various dates, including the Roman small town and gold mines at *Alburnus Maior* (modern Rosia Montana). Therefore, a study of the settlement patterns of Roman Dacia from a landscape perspective is now required before modern development has an irreversible affect on both the natural and historical landscape of the country.

2. Biases and limitations of current research:

Because research has been focused mainly on military and urban sites, all the rest have been seriously neglected, even allowing for the brief attention given to rural life particularly in the 1960's. The limited number of specialists and the funds available have been concentrated on the more promising and spectacular sites, which have generally not included rural sites (Alicu 1998, 127-128). As a result there are numerous biases that apply not only to the quantity, but mainly to the quality of current information. Therefore, since one bias can be a direct consequence of another, the end result is that the theories generated from the data cannot be other than ill-founded.

2.1. *The influence of history and politics on archaeological research.*

First of all, I shall consider the manner in which archaeological evidence is currently perceived and accepted in Romania. Archaeological research has been subservient to established historical theories generated by literary sources. This attitude is deeply rooted in concepts of the past held by modern

individuals, and especially professional scholars. The ultimate goal of archaeological research is, of course, directed towards explaining historical evolutions and phenomena. Unfortunately, the visible tendency over the past century has been to rely primarily on the existing literary sources without taking into consideration their inherent biases whose effect could potentially be reduced by reference to the totality of the evidence. The fact that archaeological evidence has been considered only when it supported the historians' arguments, rather than attempting to build up a theory based also on the archaeological evidence, is a general problem in the study of Roman Empire. A great danger in such a situation is that the literary sources alone tend to generate the conclusions. Consequently, the most recent comprehensive studies have tried to address this issue.

In Dacia this situation might be explained sometimes by the paucity of archaeological information, but unfortunately, even where that evidence is available, other factors distort its consideration and resulting the conclusions. There is nothing new in the recognition of the importance that historical models have for political discourse in general, but for a long time in Romania history itself was entirely subordinated to politics. As a result various subjects of archaeological research were approached and funded only when they were seen to serve the political fashion of the moment. This attitude was visible in Romania especially after the Second World War, when politics became more intrusively and, indeed, aggressively involved in different aspects of research as with life in general. Above all, the way of thinking and writing history had to be Marxist (based on the theory of historical materialism), and no other approach was perceived as 'suitable'. Ever since 1947, when the communist republic was formed, and especially in the 1950s and 1960s -during the leadership of Gh.Gheorgiu-Dej-, the key role of historical research was to feed the discourse of communist theories regarding the social classes' antagonisms and the rejection of western imperialism. In this context, research at the major Roman sites, including *Ulpia Traiana Sarmizegetusa*, the provincial capital, ceased to be financed, and both funds and personnel were re-directed to undertake research on native settlements of pre-Roman, Roman or post-Roman date. On the one hand such a decision had a positive value, given the fact that it determined the re-direction of research towards sites that had not been approached before, or not adequately, and addressed a bias of previous research. But on the other the conclusions of the research had to fit the general theory of the oppression experienced by the native masses under the imperialist occupation. This idea, born in the middle of the industrial era, had to be sustained by history through archaeological testimonies and prove not just that it existed for a long the time, but also that social antagonisms existed too. This is the moment when the Roman conquest and occupation of Dacia was described, at least in part, as a negative event both in relation to the treatment applied to the natives, but also because of the introduction into the conquered territory of a socio-economic system based on slaves and the exploitation of the lower classes (Constantinescu *et al.* 1970, 53). According to these scholars, who were projecting ideas usually connected with the concept of modern nations into the context of an ancient society, the natives lost their liberty/sovereignty as a people and their properties in favour of their Roman conquerors. The opinion expressed by M. Macrea (1969, 457) is that "the Roman conquest brought for Dacia not just economic, social and cultural progress, but also an entire cortege of sufferance, pillage and unmerciful exploitation for the slaves and lowest strata, all inherent to an antagonistic society based on slave exploitation" (my translation). Similarly, the authors of 'Inscriptiile Daciei

Romane' (Russu *et al.* 1975, 22) wrote in their historical introduction: "The Roman occupation brought [...] real progress in modes of organisation, material and spiritual culture, technology and production, and in the way of life; but it was at the same time, a regime of pillage and rough exploitation of the lower, working classes of the society and especially of the masses of native subjugated inhabitants and workers, expropriated in their own country" (my translation).

The other main political and historical theme was the concern to produce historical arguments to support the political act through which Transylvania became a part of Romania in December 1918. This theme is recurrent before and after 1918, and is the subject of a long-term debate in Romanian and Hungarian historiography which remains unresolved (the Romanian point of view is mainly summarised in Daicoviciu *et al.*, 1963, while the Hungarian thesis is presented most recently by Vékony 2000). During the communist years the subject was particularly in fashion in the 1970s-1980s, during the rule of N. Ceausescu, when communist propaganda in Romania gained a strong nationalist message. Within this context one of the main concerns of Romanian historians was to bring forward arguments for the rapid and durable romanisation of the natives in Dacia as major element in the context of the 'theory of Dacian-Roman continuity'. This thesis was developed during the past 3 centuries mainly as a response to the corresponding Hungarian propaganda which attempts to sustain its political position towards Transylvania and tries to prove on a scientific basis that this territory was devoid of any population on the arrival of the Hungarian tribes. It is argued that the Romanians emerged in the region through a massive movement of population from south of the Danube later on, because the Dacians had disappeared as a result of the wars of AD 101-102 and AD 105-106 and the Romans had withdrawn all the population in the 3rd century AD. Therefore, Romanian scholars focused on disproving this thesis, bringing foward arguments to support the romanisation of the native Dacians under Roman rule and the continuity of life in Transylvania from prehistory to the Middle Age.

The currently accepted theories on the Roman conquest and rule of Dacia and most of all, on the romanisation process, had to be fitted in accordingly, in spite of several flagrant contradictions that I wish to address briefly here. The archaeological evidence so far attests the presence of colonising elements in both urban and rural contexts. But if in the urban and military sites funerary, epigraphic and other types of evidence seems to indicate quite a large population with an origin other than indigenous (see also Ciongradi 2004 a and b), the current level of archaeological data for the rural areas of Roman Dacia makes it impossible at this point to assert a similar percentage of colonised elements there. The destruction of the Dacian hill forts and the movement of the population has been accepted with little if any surprise, given the huge effort of the Romans to conquer these sites. But on a closer examination, current theories on the nature of the conquest and the treatment applied to the natives are in blatant contradiction. One of them suggests that the natives lived on the tops of the mountains and were forced to settle the fertile lowlands, while another states that the Romans came and took the fertile lands for their own properties and forced the natives to move away or work on their properties as cheap labour. Unfortunately, it is often forgotten that the sole reason for the existence of the hill forts is as elite sites and the purpose of their location is strategic and status-related. Accordingly, after the military defeat and the introduction of Roman rule, such sites no

longer had a reason to exist. The extrapolation of this model of hill fort destruction to the entirety of the Dacian settlement pattern not only pushes this interpretation to an unsubstantiated extreme, but also would have been a questionable policy decision on the part of the Romans. The idea that the Roman colonists deprived all the natives of their lands does not sit well with the benefits of a rapid and durable romanisation through close and peaceful relationships between all the inhabitants of the new province, whether natives or colonists, civilians or soldiers. If true, the resulting attitude of the Dacians towards their conquerors is likely to have been resistance to acculturation, rather than receptiveness. It certainly does not take into consideration other factors - cultural or economic, for example - which must have influenced attitudes and the whole process needs a more refined and detailed interpretation.

Therefore, it is no surprise that the theory has been challenged in the 1990s not just by the Hungarian colleagues, but also by some Romanian scholars, especially archaeologists. It is not my intention here to analyse this polemic in more detail, but to show that it has influenced the perception even of the existing evidence and in the end it has distorted the general view of Roman Dacia in terms of conquest, colonisation, administration and, indeed, romanisation. The eventual reaction of some Romanian archaeologists to this theory is an attempt to evaluate the existing archaeological evidence at its true value, without dismissing the elements that might offer a different picture than the one desired by political discourse. It would be wrong to accept any form of political interference in either archaeological or historical practice any longer. The political attempts to influence interpretations of the past usually reflect a failure to find solutions to present issues (a distracting factor from real political issues). Moreover, adding a supplementary bias to those that currently apply to archaeological research would distort our perception of the past even more.

2.2. *Reliability of and access to information.*

Reliable evidence is surprisingly limited. This statement might sound odd given the amount of data recorded so far for Roman Dacia, but unfortunately for the most part the information provides only the general location of archaeological discoveries. Many efforts have been made to identify and systematically research the archaeological sites of Transylvania in 20th century and in some cases even earlier, especially through field walking and excavations at various scales. Both TIR L-34 (Budapest) and TIR L-35 (Bucharest), along with D. Tudor's book (1968) and the several county archaeological gazetteers, refer to a significant number of sites. Unfortunately, the vast majority of these sites have somewhat stereotypical descriptions, most of the time mentioning ceramic fragments, sometimes associated with construction materials. In fact, these stereotypes relate to the methods of collection, interpretation and, indeed, evaluation of the data for the whole territory. There is still a lack of systematic coverage of the territory and no unitary method of recording. Only some 10% of reported sites have been the subject of more extensive excavation projects. The remaining 90% are just indicated by finds (artefacts or building materials scattered on the ground surface). There are no site plans available for them and, therefore, their size and significance has not been fully appreciated because of a failure to apply modern techniques of site prospection. This issue will be discussed in more detail later on in this chapter, but it is responsible also for the fact that several

categories of sites characteristic of a landscape are still overlooked. Potentially this could be the explanation, for instance, for the fact that no Iron Age, or indeed Roman, land-use systems have been found in Dacia.

But even the information that is available is extremely difficult to consider and evaluate as a whole, in the absence of an accessible national system of record of archaeological sites. Dealing with a type of information that is, by its nature, accumulated over a long period of time, naturally brings problems of storage and accessibility of data. In Romania, the system of publication of the results is not very helpful in terms of access. TIR L-34 and L-35, and Tudor (1968) are well out of date. More recent discoveries are accessed primarily through sporadic, random publication in various Romanian periodicals. The material might have been addressed in a few cases in more general studies, which aim to collect the data discovered over a wider area, usually in terms of historical geography, chronology or specific categories of sites (e.g. Wollmann 1996 for mining and quarrying; Popa 1989 for Tara Hategului). There are also few cases of modern regional archaeological gazetteers (e.g. Alba County -Moga and Ciugudean 1995).

There are no regularly updated archaeological databases. The recent efforts to complete a general archaeological database (by cIMeC -see above) are extremely important and the value of such action has been proved already by the availability of information on-line under the format of a searchable database from excavations from the years 1983-1997, 1999 and 2000. The use of the Internet environment for information, as well as the availability of digital data to support computerised quantitative and settlement pattern analysis, will provide a valuable support for future research. Unfortunately, even this latest attempt to preserve archaeological information does not include the precise geographical locations of the sites, continuing to use location descriptions by place-names which have already proved to be inadequate (see below).

2.3. *Site location.*

The experience of the last 100 years shows the importance of the accurate transmission of information in the context of successive changes in archaeological methodological requirements or even in the territorial administration system and place-names. The failure to locate archaeological sites by their geographical co-ordinates and reliance on place-names produces significant difficulties in attempting to locate some sites that have been previously reported. This occurs especially with place names of very local significance within the area of a particular village, for example, which are not in use anymore, nor traceable through archive maps or documents. As a direct consequence of this failure to locate archaeological sites precisely, some of them are very imprecisely located when referred to by various authors.

This confusion persists even in the most recent publications. For example, N. Gudea in his study on the Roman military camps in Dacia (1997, 101-2) locates the Roman fort of Cigmau (*Germisara*) and its civilian settlement approximately one kilometre to the N of its true position (Hanson and Oltean 2002, 114). The process of alteration of information is visible in the case of D. Benea's article on military *vici* from Dacia (2000). Acknowledging the difficulty of access to information (see

above), she tried to assemble all the data available for civilian settlements outside Roman auxiliary forts in Dacia, and thus produce a useful tool for both Romanian and international archaeologists. She makes use, amongst others, of the published information from the rescue excavations at Vetel (*Micia*) (Marghitan 1970). Unfortunately, the location of the building complexes in question is misplaced by some 250 metres to the East and at least 50 metres to the north. Such a mistake highlights the difficulty of assembling data, especially for the sites where an overall site plan has yet not been produced. As a result accurate archaeological maps of larger territories necessary to support landscape studies and settlement pattern analysis are largely missing.

2.4. *The quality of excavation methodology.*

The excavation methods applied to the Roman sites of Dacia over the last century have varied. As shown by Condurachi and Daicoviciu "after the second world war [...], the distinctive features of Romanian archaeological method were the absolute priority it gave to stratigraphy and its preference for the exhaustive excavation of large sites to the maximum extent that the circumstances permitted" (1971, 20). Unfortunately these principles were not applied to Roman sites until much later. This fact is well illustrated by the list that they give of sites where modern methods had been applied by the date of their publication, which contains not a single Roman example, and can be further confirmed by consulting other excavation reports.

Thus, for some of the excavations, especially of villa sites, the published results give little indication of construction phases. This is most unusual, especially since repairs or changes of plan within buildings, or even changes of use of buildings, are frequently recorded in civilian archaeological contexts elsewhere. At Hobita, despite the fact that is so far the only example of a villa site to have the whole enclosed area delimited and its internal arrangements defined, there is no indication of any phases of construction and repair (Floca 1953). Published excavation reports rarely express any concern about their failure to identify earlier phases of archaeological complexes. In the case of at least 2 civilian buildings (no. 1 and no. 3) in the *vicus* excavated by Marghitan at Micia some 30 years ago (1970), earlier timber phases were revealed by excavation. Despite the fact that there were other indications, such as the existence of artefacts, including construction materials (tiles), within the filling layers under the floors, these discoveries occurred only incidentally while the excavators were trying to reach the deepest level of the stone wall foundations when the earlier construction trenches for the timber walls intersected their trenches. However, the excavators made no attempt to establish the extent and layout of these features, to consider variations of plan or internal space division from one phase to another, or to make a study of the quantitative and qualitative or stylistic evolution of the different categories of finds. Excavations such as these have, therefore, produced incomplete site plans where chronological developments are now impossible to pursue. Similarly, in complexes where the stone phase went through successive transformations or repairs, these are apparent neither in the reports, nor site plans if available. This issue will be considered in more depth later, when dealing with specific classes of sites, but it is worth stating for the moment that in such cases the interpretation of the internal arrangements is almost impossible to establish accurately.

2.5. *The limited application of archaeological prospection methods.*

According to Bewley and Raczkowski, "Excavation is still synonymous with archaeology in many countries" (2002b, 3) and that has been very much the case in Romania until very recently. It is true that excavation can give the most precise and detailed information about archaeological sites, but not every site can be excavated. This is not just due to the high costs involved or the amounts of time necessary to complete an excavation. Excavation is, by its nature, an invasive method of research which damages the site itself in the process. The areas affected by excavation will no longer represent an intact testimony of the past. Excavation standards evolve over time, and even what is perceived at this moment to be technically first rate, could be considered insufficient or inappropriate in future. Therefore, the modern approach to archaeological heritage conservation is focused on non-invasive methods of research, and most archaeological sites tend to be excavated only when they are endangered by development. Within this context, modern methods of archaeological prospection have developed as a necessity, both for understanding and monitoring archaeological sites, but also for prior evaluation of the site and its potential as accurately as possible. But perhaps the major contribution of modern methods of prospection, and especially of aerial photography, is the possibility of providing better understanding of sites from a landscape perspective, and indicating the way that human settlements interacted with the natural landscape and with each other.

Traditional field walking is the only method of archaeological prospection which has been applied historically in the study of Roman Dacia (see above). Unfortunately, in its application no attention has been given to the unitary planning of the field coverage, or to systematic data collection and analysis. Only very recently has the Apulum Hinterland Project international team started systematic field walking in the vicinity of Alba Iulia in collaboration with the University of Alba Iulia (information Dr. Ian Haynes). But even at its best, field walking alone can give only limited clues as to the nature of the site. What can make the difference is understanding the site's full extent and morphology, allowing the differentiation between an individual homestead (farm) or a nucleated settlement, for example. In the case of individual homesteads, the layout of the internal buildings, their individual plan, or the building materials used can distinguish between a villa site and a native farm. Field walking alone can locate a site, provide some indication of its extent and, from interpretation of finds, evaluate its chronology or offer suppositions about its nature. It does not provide a clear idea of the morphology and layout of the site, which can be known only from the interpretation of aerial photographs or geophysical data.

Geophysical survey has only recently started to be applied to Dacia. The usual lack of funds, trained specialists or surveying equipment are probably the main reasons for this, as for aerial archaeology (see below). As in the case of excavations, the first attempts at geophysical survey have focused on urban and military sites. Some results from a geophysical survey financed by The County Museum of History and Art of Zalau in 1996, which applied magnetometry and resistivity to a 2.2 hectare area to the south of the Roman fort at *Porolissum*, were recently published (Scurtu 1997). The same specialist has conducted more limited surveys at Cigmau fort (information from Dr. A. and Mr. E. Pescaru). At Apulum, geophysical survey in the *colonia* and the *municipium* by Lockyear (information from Dr. I. Haynes and Dr. A. Diaconescu, the Apulum Project) has recently started to

extend into the territory around the Roman town with surveys at villa sites at Seusa and Oarda within the new frame of the Apulum Hinterland Project. (see figure 5.5). But geophysical survey, whether utilising magnetometry, resistivity or ground penetrating radar, is by its nature largely confined to the limits of individual sites. Despite its recognised value in recording details of site layout, it offers only limited opportunities to evaluate the site from a landscape perspective and consider other possible adjacent features that might be related.

The aerial view gives human perception a broader perspective. Archaeological sites can be recognised even when their degree of preservation is very poor, whether still visible to some extent on the ground surface or even totally buried. Over the 60 years or more it has been proved on numerous occasions that, given suitable soil conditions, buried archaeological features can be recognised from the air as crop marks (Wilson 2000, 16-23, Bewley 2002). This has made aerial reconnaissance extremely valuable, especially for the identification of previously unknown archaeological features. Furthermore, a trained interpreter can acquire considerable information about a site, both in terms of its morphology and its probable date, through analogies with similar sites whose chronology has been established by other methods (Wilson, 2000, 65-67, 84-87). Also, the speed of coverage and consequently of analysis of even large territories is significantly higher than through field walking, or indeed geophysical methods. Both these characteristics make aerial photography the preferred method of archaeological prospection in Europe, especially for landscape research and management. These advantages have determined the initiation of programmes involving aerial reconnaissance to acquire new imagery and evaluation of available images from aerial photographic archives in several countries of Europe at national scale and on permanent basis (see Bewley and Raczkowski, 2002b, Fig. 1). Most recently, satellite photographic, multi- and hyper-spectral imagery, or airborne scanning techniques have been addressed too. Therefore, modern survey of a given area for its hidden archaeology should include at least the study of vertical or oblique aerial photographs, geophysical survey and field walking.

Probably the first aerial survey and photography of an archaeological site in Romania took place as early as March 1918, when Carl Schuchhardt took aerial photographs of the Roman frontier wall in Dobrudja. Despite the fact that these photographs remained unpublished until 1954 (Crawford, 1954, 208 and plate VI), Schuchhardt used them to correct his own published map of the wall. Unfortunately, this remained very much the only example of its kind for a long time. The only aerial photographic survey programmes over the following decades were made for different reasons, whether military during the world wars and after, or civilian for mapping purpose. Access to these aerial photographic archives for archaeologists remained limited for a long time, though a start was made in utilising them for archaeological purposes mainly on Roman military sites (e.g. Bogdan-Cataniciu 1981), but concentrating in most cases on extant or known archaeological features. In Romania the whole process has been constrained by legal difficulties, lack of financial resources and a shortage of specialists experienced in the interpretation of aerial photographs (see Braasch 2002; Oltean 2002; Hanson and Oltean 2002; Hanson and Oltean 2003). Until the last decade, Central and Eastern Europe was thought not to be sufficiently responsive to crop mark formation because of the heavily alluvial topsoil that covers the arable regions combined with a less contrasting deeper

geological background (Bradford 1957, 15 and 23). Moreover, the recognition of crop marks would have been more difficult from archive vertical imagery. Apart from the variable quality of the photographs and their scale, such data is likely to be of more limited archaeological value because the images were obtained originally for purposes other than archaeology and the very specific conditions necessary to record many archaeological features may not have been in force.

There have been a few attempts to make use of aerial photographic information in archaeological studies and in the occasional publication of sites, but without a clearly structured method of approach. Unfortunately, in all of these cases the information available was insufficiently exploited because of the limited training and expertise of these pioneers. They were either archaeologists with very little or no experience in mapping or photo-interpretation, or topographic and geographic photo-interpreters without archaeological expertise. A group of specialists from the Romanian cartographic institute of Bucharest belong to the latter category. They published short articles utilising principles of photo-interpretation to identify possible archaeological sites at Sanislau (Satu Mare) and Dersida (Salaj) in north-western Romania, or at Sarighiol de Deal, Satu Nou and Isaccea along the Danube in the south-eastern Romania, where they provide interpretation and mapping of the archaeological features (Rada, Cochina and Manea 1989, Rada and Cochina *, Rada, Cochina and Corcodel **). Unfortunately, their archaeological and even photographic interpretation of the vertical images is not always correct. Also, in some of the cases they seem to focus on the identification of the archaeological features observed (which in most of the cases is hypothetical), rather than on the description of more methodological issues of archaeological site recognition and general principles of photographic interpretation. In the case of the small Bronze Age site enclosed by a system of multiple ditches and ramparts at Sanislau, for example, the interpreters failed to recognise the existence of ditches in front of the ramparts, as well as a fourth external ditch with its rampart (Rada, Cochina and Manea 1989, 203 and photo 1). However, their effort is still of value because of the attempt to identify previously unknown archaeological sites and, in some cases, produce interpretations of features in the form of maps. In her study of the Roman defences of Dacia, I. Bogdan-Cataniciu published some examples of extant military enclosures visible on existing archive vertical photographs (1981). But, as was the case with the material published by Rada, Cochina Manea or Corcodel, the quality of the reproductions or in some cases even of the original photographs is so poor that the reader must rely for the most part on the interpretations provided by the author. Archaeologists have used aerial photographs sporadically to illustrate lectures (e.g. C. Craciun mentioned in Ardevan 1998, 76), publications of sites (e.g. Alicu 1998, plate 3; Tamba 1997, plate 8) or as exhibition illustrations. Others have undertaken occasional limited flights photographing known sites from the air for illustration purpose, such as G. Stefan in the South East of Romania or E. Pescaru, in Hunedoara county, the latter using a helicopter as an aerial platform. Less fortunate enthusiasts, such as V. Barbuta were constrained by lack of funds to make photographs using kites as aerial platforms (figure 1.7), with some success especially for the identification of the temple of *Liber Pater* at *Apulum* (information Dr. A. Diaconescu).

Because of restrictions on civilian air traffic in force during the Communist years, the inability to fund aerial reconnaissance programmes, and the lack of relevant equipment, experience and expertise to

undertake such work, these efforts were no more than sporadic. However, in 1998 the University of Glasgow started a program of systematic aerial reconnaissance in the mid-Mures River valley and Tara Hategului undertaken by Prof. W.S. Hanson, funded by the Leverhulme Trust and subsequently by the British Academy. The work was undertaken in co-operation with the National Museum of Transylvania in Cluj, the Museum of Dacian and Roman Civilizations in Deva and the University of Alba Iulia. The purpose of the project was to establish the parameters for the application of aerial reconnaissance in the different environmental, soil and agricultural conditions pertaining in Romania and also to increase understanding of the history and development of the landscape of western Transylvania, particularly from later prehistory to the immediate post-Roman period. The geographical focus of the project was South-Western Transylvania, particularly the middle and upper Mures valley and the plain of Hateg to the south, which lies at the heart of both the Iron Age kingdom and the subsequent Roman province of Dacia. This project has established the first relational database of aerial archaeological sites of different date and has provided valuable information for this thesis (see below). However, it is generally recognised that the best results are obtained through a combination of these various methods of survey, and hopefully future financing will finally allow such a programme.

3. Aims and approaches: landscape and romanisation.

The relevance of ancient landscape studies in finding the answer to general, theoretical or even more focused issues of the ancient world has been broadly recognised. Data interpretation has always pre-supposed an evaluation of the distribution of similar sites. But understanding of the general patterns or, indeed, unique features revealed by the sites must be considered from a broader perspective. "Archaeological maps of settlement distribution can tell us much more than where the sites are. They can be read as summaries of a whole complex of ecological consequences, dynamic and largely predictable. Taking each point as representing a vortex of social and economic activities, it is readily apparent how the cumulative effects of that activity over time can lead to more or less permanent environmental changes" (Delano-Smith 1996, 174). The landscape suffers a continuous evolution which, from an environmentalist view, would be regarded as a process of degradation. Some of it is caused by natural erosion, but the most of it is, in fact, due to human or animal activity. Amongst all species, humans have been the most successful in using the natural habitat. Moreover, humans have adapted that habitat to create the landscape, using its resources and transforming it according to their necessities. From this point of view, the landscape bears the marks of the humans that have inhabited it through time, reflecting their needs and way of life, or their level of technological knowledge.

Apart from active ecological destruction leading to more or less permanent environmental changes caused by sites occupied by man (Delano-Smith 1996, 167-8), the development of landscapes is able to tell a different kind of story, that of the cultural evolution of human communities through time. The natural environment has brought into the equation factors such as topography and climate, the availability of resources for life (either beneath the earth or on its surface, as local flora and fauna) or, indeed, the defensive potential of particular locations. To this, humans have added their own leading mentality, needs and technological resources, knowledge, social regulations, politics, which

has impacted on the use, and therefore, re-shaping of the landscape.

The approaches presented above are accepting the landscape itself as an objective reality transformed by the subjectivity of man. But, whatever the study approach, it is accepted that the interaction between humans and the environment eventually resulted in a transformation of both parts, a process that would have left significant traces, identifiable by modern archaeological methods. When reading these traces, however, it is possible to go further than just an ecological impact evaluation of past human activity. The number of humans that were accommodated within a given landscape at each moment in time is another factor that would have influenced the amount of physical space affected. Going beyond the physical boundaries of each site, the study of settlement patterns is far from being solely a mapping or locational process. It would normally involve analysing the spatial, along with the functional, relationships of contemporary sites within particular cultures (Knapp 1997, 5). Both of these dimensions, spatial and functional, are not to be understood, however, in a strict economic sense, but also in political, social, religious, or cultural terms (Knapp and Ashmore 1999, van Dommelen, 1999).

The evolution of landscapes offers a different understanding of those ancient Mediterranean civilisations that were largely town-based, such as those of Greece and Rome, both in their Mediterranean heartland (Shipley, 1996, 8) and beyond (e.g. Dark and Dark, 1997). Apart from the obvious effect of revealing what provincial settlements would have looked like, the study of the settlement pattern within Roman provinces can address more general issues. The decision to settle and use a particular space was being taken by people, in groups or as individuals, in direct relation to their interests. Consequently, by studying the resulting impact of their action on the landscape, one can presumably tell whether the original effort involved was made by several individuals or by an organised group following a certain policy. Therefore, the nature of the colonisation process can be analysed from the way the new Roman-type settlements emerged within the provincial territory and their effect on the previous native pattern. According to the current orthodoxy, after the Roman conquest Dacia experienced the first large influx of populations from outside its cultural boundaries, a phenomenon described by ancient historians and re-enforced by the epigraphic evidence. These newcomers, mostly from other parts of the Roman world rather than Rome itself, whether granted Roman citizenship or not, had to be accommodated within Dacian territory, as did the manifestations of the new legal and administrative system and the military. The native settlers had to comply with the situation.

Subject of debate for decades, the approach to romanisation has been marked by several successive theoretical trends (materialism, colonialism, post-colonialism), all trying to find a satisfactory explanation for an extremely complex socio-cultural phenomenon. Traditionally, the two parties involved, the natives and their conquerors, have been presented as facing each other from different, sometimes even conflicting or antagonistic positions, reflecting of modern political (national) thought on ancient societies. But romanisation still gives unexplainably different, even contradictory pictures not just when subjected to different theoretical approaches, but also when seen from different corners of the Roman Empire. Indeed, one of the main questions in defining romanisation as a process - whether the Romans romanised the provinces (e.g. Garnsey and Whittaker 1978) or the natives

romanised themselves (e.g. Millett 1990) -if answered, has found different responses. On the one hand, this makes a global understanding of the process very difficult and, therefore, research on romanisation has tended to remain at a level of local studies. On the other, it has resulted in extreme attitudes and sometimes its nature or very existence, in particular regions (e.g. Africa –see Bénabou 1976; Dacia –e.g. Vékony 2000) or as a concept (e.g. Hingley 1996; Barrett 1997), has been challenged. However, Woolf (1995) rejects ideas like conflict, competition or interaction and advances a new interpretative framework, with the creation of a new imperial culture as a structured system of differences replacing both previous cultures (Roman and native), its spread comparable with the growth of an organism that metabolises matter. A similar approach to romanisation, as "a largely conscious process by which sections of the indigenous population sought to emulate Roman culture, at least in the form in which they experienced it, motivated by the need to establish their own social status and directly assisted by the Roman authorities" was earlier employed by Hanson (1994) in his own interpretation of the phenomenon in British context. This understanding of romanisation combines best the theoretical and empirical approaches to the subject and is the one that has been employed throughout this study.

Romanisation as considered here is the way that Roman rule affected not just the native populations, but also the whole landscape in the conquered territories. The emergence of Roman-type towns, the broad diversification of the range and function of settlements, and the particular way of organising space probably had a more significant impact on the pre-existing system than any other previous changes during prehistory and can reveal, in comparison with other provinces of the empire, particular aspects of the romanisation process, as well as giving the real scale of the whole process within the territory. By combining archaeological information, historical data and information regarding the natural landscape, it is possible to understand better the general evolution of the landscape and the human impact upon it, both in the pre-Roman and Roman periods. In such a context, it should be possible to distinguish from the amount of data available exactly what constitutes the general pattern and what can be considered unusual. Moreover, it is possible to identify evolutionary patterns, as well as consider the occurrence of special cases, whether dictated by natural or man-made causes, from a more realistic standpoint.

The nature of current research on rural Roman Dacia described above significantly biases the evidence for any such analysis of the economic and social life of the province. Since this bias has not been recognised before, it raises serious doubts about the validity of currently accepted theories about the development of this landscape. The potential density of human settlement in the period has not been fully appreciated and the typology of rural sites might not be complete. Accordingly, the native pre-Roman component in the life of the province has probably been misinterpreted. All these issues affect the evaluation of the Roman impact on the conquered territory and the nature of the romanisation process in Dacia.

The purpose of my research is to redress some of these biases. I intend to focus my study on the effects of the Roman occupation on the indigenous settlement pattern and land-use. From an interpretative point of view, there are several questions to be addressed. In what way did the Roman conquest affect the native landscape? What were the mechanisms behind the choice of settlement

location and which of the factors that influence the decision are predominant in the case of different types of settlements in Roman Dacia? Can we detect the evidence to support the idea of a state-directed policy of settlement emergence and pattern in the case of Roman Dacia, as has recently been suggested, or is the impact of the Roman colonists the product of multiple small-scale individual strategies? Did the conquest result in any perceptible resistance phenomena amongst the natives? Finally, how did the process of romanisation develop in Dacia? Through these questions, it will be possible to address a number of current debates and assumptions: whether archaeological evidence bears out the literary references to depopulation, whether much of the hinterland of *Sarmizegetusa* was unoccupied in the pre-Roman period, or whether land was parcelled out and given to the colonists. The understanding of the real Roman impacts (whether military or civilian) and of the true nature of the social relationship established between the conquerors and natives will ultimately lead to a better understand of romanisation in Dacia.

4. Methodology:

My study encapsulates an area situated within the territory surrounded by the Carpathian Mountains, which was in fact the geographical core of both pre-Roman and Roman Dacia. It covers the hinterland of Sarmizegetusa (*Colonia Ulpia Traiana Sarmizegetusa*), the provincial capital and possible former legionary base in the area of Hateg (figures 1.3-1.4), extending further along the upper Mures Valley, beyond the colony and legionary base at Alba Iulia (*Apulum*) (figures 1.5-1.6). Although the region has been chosen to include in particular the lowlands of the Tara Hategului, and mid-Mures valley, it also covers the surrounding uplands that are structurally related (figure 2.1). More extensive upland areas included in this study are the Orastie Mountains as the main core of Iron Age Dacia (figure 1.10), and the Roman iron-mining district from the Poiana Rusca mountains (in order to balance the Dacian focus of iron extraction in the Orastie Mountains). However, the most extensive mining area of the Roman Dacia, the gold-mining district located in the Apuseni Mountains just to the north and west of the mid-Mures valley, has been deliberately excluded. The reason for this is that its extent and exclusive focus on mining makes the area a specialised landscape in its own right, without much comparison with the either the lowlands or the uplands included here.

Given the current bias of research, I have included a larger range of sites than might normally be accepted as rural, extending my study to sites with an urban function (*vici*) but lacking the explicit proof of a municipal status. Such sites have traditionally been perceived by Romanian archaeologists as non-urban. Therefore, even though I will operate within the terminological framework currently in use for Roman Dacia, my main concern will be to address the function of each site whenever possible. This should provide a more realistic basis of study and redress the previous biases created by an approach focused on status, without totally dismissing it as an issue.

From what I have shown so far, it is clear that the traditional approach is very much out of date, especially when it comes to rural issues. The perspective for analysing the data must now focus on the evolution of the landscape. This is the primary aim of my study on the evolution of the settlement pattern. In order to achieve it, I have augmented the current data-set with new information obtained

through modern methods of archaeological prospection, particularly aerial reconnaissance. Apart from the fact that it has previously been little applied in Romania, this method has been shown to provide some of the best results for landscape studies (e.g. Palmer 1984; Stoertz 1997). My research makes primary use of the photographic information from the aerial reconnaissance programme conducted by Prof. Hanson (see above) since 1998 which covers the same study area (figure 1.8), and with which I have been directly involved as a part-time research assistant.

I have shown above that the archaeological data currently known is hardly satisfactory. The quantity and quality of information on particular sites and the problems in accessing it has made my task extremely difficult. In quantitative terms, a total of 627 sites (database entries) have been considered in this study, but 60% of them are merely accidental discoveries, mainly in the form of artefacts (or the way of their discovery/research has not been mentioned in publication); a further 10% come from antiquarian reports. Some 17% have been subject to excavation at varying scales and a further 8% have been reported through fieldwalking (although many cannot be accurately located). Only 3% represent new or augmented discoveries from the air. However, the qualitative balance of the data provided in these different categories is effectively reversed (see below). Nonetheless, all the information has been brought together into a coherent system to permit its evaluation as a whole, in order to facilitate both overall and detailed analysis, and produce general conclusions. In parallel, the evidence that formed the fragile basis of the previous theories has been reviewed in order to see what is reliable and what is not from a 21st century archaeological perspective. This would have allowed me to see how much of what is currently asserted is, indeed, based on facts and how much has started as hypothesis but ended up as accepted fact. The sources for this type of data are the various reports of occasional field walking, the existent gazetteers, excavation reports and other publications, mainly from the 20th century, but also of earlier date. Of course, since the already published data-set has been inadequately administered, any new additions highlight the need for exhaustive, flexible and interactive management of data, and its analysis within a computerised environment. Nowadays this is possible through the increasing use of computer facilities, in the form of databases and GIS (Geographic Information Systems).

4.1. The conversion of information into a relational database:

The use of archaeological databases is widely recognised as the best way of handling large amounts of information from various sources, locations, and dates. Since no digital archaeological data existed when this study began, I had to collect and process a huge quantity of published information scattered in numerous sources. Accordingly, a relational database of the known sites from various publications has been designed, created and subsequently augmented with all the new sites of proven and potential late Iron Age and Roman date revealed by aerial archaeology in the area since 1998. A copy of this database is provided on CD with this thesis.

The principle of the database design was the fragmentation of information into its parts linked together through a complex system of relationships. Apart from the practicality of ensuring better storage of the sets of information included, the main benefit of this system is that it imposes a clear

standardised use of terms and definitions to describe the sites, which allows advanced quantitative analysis. The database contains a main table of sites with details of their location, along with specification on the character of previous research, on the size of the settlement or on the type of houses documented. For each site, related tables provide information on their chronology (site occupation), site type and finds. The information on site chronology contains the specified date related to that site entry, along with a scheme of the occupation on that site throughout the main prehistoric and historical periods. Because whenever it was possible, a single entry was used for complex sites, the table containing the site types provides a list of type options; settlement (unknown); small town, hillfort, tower-house, village, individual homestead, cemetery, individual grave/tumulus, road, religious site/temple, aqueduct, quarry/mine, or artefact discovery. One or several of these options can, therefore, be viable for one site entry. A final entry contains the interpretation of the status/function of the site. Particular categories of finds have been considered as significant for the purpose of this study: stone walls, *murus Dacicus*, timber, bricks, mortar, daub, wall plaster, painted wall plaster, roof tiles, pavement, ceramic pipes, hypocaust *pilae*, architectural pieces/statues, inscriptions, military diplomas, funerary monuments, storage pits, hearths, agricultural tools/millstones, furnaces/kilns, hoards, coins, jewellery, styli, pins. A general field was also provided to include any other details or comments on finds. Pottery finds were included in a separate table, to include (whenever possible) details on their manufacturing technique, colour, clay texture, as well as broad indication of date (Dacian, Celtic, Roman).

Terminological standardisation has not been seen as particularly important in the context of Romanian archaeology, so having to apply it now for all of the reported sites in the area proved extremely difficult. On the one hand there was an uneven quantity and quality of information for the better-known sites, reflecting the interests of their researchers. While abundant and detailed information was provided for some aspects such as fortifications or artistic decorations on artefacts, considerably less, or even no information was provided on chronology, function, or site structure and layout. Moreover, the various definitions which have been applied to sites have been particularly focused on reflecting their status, rather than function (see e.g. chapter 5). But the archaeological evidence is in most cases extremely scarce and the research methodology traditionally employed has been far from satisfactory in defining the nature of the settlement in the large majority of the reported sites in both the late Iron Age and Roman periods. Many of the sites are represented only by artefact discoveries and in numerous cases, with the exception of their broad date, their nature has not even been specified. Accordingly, they have been considered within the present analysis as 'settlements of unknown type'. General chronological definitions used in the published data such as 'Iron Age', 'La Tene', 'Dacian' or 'Roman' is the reason for having to operate in the main with extremely loose chronological boundaries within the database; hence, the possibility of defining contemporaneous sites was very limited. Further difficulty was encountered in including artefact discoveries. Especially in the case of those related to the late Iron Age, there were many cases where the nature of these artefacts did not explicitly indicate a settlement (e.g. hoards or isolated artefact discoveries). However, the presence of pottery was considered here as an indicator of potential settlement. Also funerary sites recorded outside a known settlement context have been considered as indicators of

possible settlement in the vicinity.

4.2. Building an archaeological GIS:

But simply analysing tabular information on archaeological sites is insufficient when it comes to understanding the landscape. Information related to the geographic and topographic setting of sites, those related to the road system or the proper consideration of site plans cannot be handled by the tabular format of a database. Therefore, the database only provided a framework for handling site attributes within the larger framework of a GIS. This is a more advanced tool capable of complex management of information in relation to its precise location within the physical world, facilitating the placing of sites into their spatial relationship with each other and ultimately offering a landscape perspective of the evolution of settlement patterns from the late pre-Roman to Roman period. The system (created using ArcView GIS 3.2) was designed to include the published information on archaeological sites in their relationship with the natural landscape, but especially with other data-sets.

One of these additional data-sets was provided by historical geographical and archaeological information. The *Tabula Peutingeriana* offers a unique account of settlement evidence from Dacia that has previously been considered, but the correlation with archaeological evidence and especially with the location of these sites has provided the overall analysis with additional grounds for interpretation of the functions of these sites and their place within the landscape.

Archive maps available to me consist of sheets of the 1:28800 Austrian cadastral survey of Transylvania (1870-1875), which contain a significant amount archaeological information that needs to be considered and evaluated in connection with other data (figures 1.1-1.2). But apart from direct information on archaeological sites, archive mapping and early aerial views provide information on the evolution of the landscape prior to much modern development. For this purpose, I have compared various editions of modern maps with the latest editions available. Archive aerial photographs have unfortunately not been available; however, for an area along the Mures valley the equivalent has been supplied by first-generation satellite imagery (CORONA) declassified by the United States in 1995. Corona KH-4A satellite sequence DS1022-21104DF025 is a declassified intelligence image acquired in 26th of July 1965. It covers the Mures river valley between Vintu de Jos and Zam with a width of 10.6 miles on the ground, and provides a best ground resolution of approximately 3 metres. But despite its poor resolution compared to conventional aerial photographs, the value of the July 1965 recording is high because it gives the opportunity to evaluate the landscape before it was affected by the later development of the area. This information was of particular help also in the process of interpretation of archaeological features visible from the air and in the estimation of their potential date.

GIS is capable of establishing the morphological basis for the recognition of different site types, or facilitating analysis of settlement distribution patterns, both in relation to each other and against other natural factors such as topography, soil or vegetation coverage and land use. Ideally such information is provided by mapping agencies in digital format at the desired scale. But the

development of digital map data information in Romania is no less in its infancy than it is for Romanian archaeology. In these conditions, everything had to be produced from scratch. The appropriate background for the location of sites in the natural landscape and in relation to modern land use was provided by LANDSAT-5 satellite data freely available from the NASA internet website (https://zulu.ssc.nasa.gov/mrsid/ -last visited 10.05.2004). With a pixel resolution of 28.5 metres (considerably less than the earlier CORONA images), this multi-spectral image taken in the early 1990s is far too poor to be used for detailed mapping, in relation to the interpretation of aerial photographs. However, it provided sufficient detailed information to support the creation of a map base of the area, including an indication of modern land-use, against which could be set all the sites included in the database, the main Roman urban centres and the sites discovered through aerial photography (all as point themes), and the hydrographical network overlain (as a line theme). But despite all efforts to locate the sites previously identified and published by the Romanian archaeologists, possible mistakes made in the original publications are likely to have been preserved in the present study, unless subsequent data acquired through aerial reconnaissance and the associated mapping methodology employed have improved our knowledge of the location (e.g. Cigmau, see below chapter 5 and Oltean and Hanson, 2001). But improvement in site location was only a minor benefit of the use of aerial photographs in this study, in comparison with the huge contribution to the clarification of the character of the occupation and even indications of site function provided by their facility to generate site plans.

The GIS created for the purpose of this study has been the real support that has facilitated the re-interpretation of archaeological evidence. Simply to say that its main purpose was the production of the amount of distribution maps printed and included here would mean to minimise its contribution, as well as potential. Through adding the spatial dimension to the attributes of each site contained in the database it enables a multitude of analyses. Only a number of them formed the subject of my study and the set of printed maps included has been limited. However, a set of the digital data that was used throughout this study has been included with the text in order to facilitate further customised queries by the reader/user.

Finally, occasional use of the GIS capacity for handling attributes in relation to spatial representations was employed to facilitate reinterpretation of individual published sites of both late Iron Age and Roman date. This facilitated the production of improved plans with a consistent scale and orientation (e.g. for Dacian houses in the uplands –see figure 4.1) or with a differentiated display/legend according to different features indicating possible construction phases or use of internal space (e.g. for excavated villa sites –see figure 5.1). This exercise resulted in providing some new understanding of the use of internal space within late Iron Age and Roman villa houses in Dacia.

4.3 Interpretation and mapping of oblique aerial photographs:

GIS is an appropriate tool for interpretation and mapping of the aerial photographs and, further, for the creation of site plans and regional archaeological maps. Settlement sites and other relevant landscape features potentially of Iron Age or Roman date discovered from the air have been

integrated in a coherent system and used to amplify what is known from previous research. The technology employed for the rectification and geo-referencing of the oblique aerial photographs provided by the aerial reconnaissance relied on the AirPhoto software (under various versions). Reliable and flexible, AirPhoto was also used to geo-reference any other base images (maps, plans, satellite imagery) to be used in ArcView GIS. The latter was the software where the base images (maps, orthophotos) were imported and where the mapping of each archaeological feature contained in the site plans was made.

One of the basic requirements for site transcription is the availability of background maps at a suitable scale (1:2,500-1:10,000). I was able to get most of the 1:5000 maps I needed for the aerial reconnaissance of Tara Hategului and the Mures Valley through the auspices of the National Museum of Transylvania, the costs being covered by British Academy and Leverhulme Trust who financed the aerial reconnaissance undertaken by Professor Hanson (see above). The most serious problem, however, is their availability and its terms. The cadastral or topographical maps at a scale greater than 1:25.000 can be owned only by accredited Romanian institutions (though the list might include also cultural or scientific institutions) and they retain a certain degree of secret status. This meant that maps to support photographic rectification and mapping for several sites were not available and alternatives had to be found. One early attempt was made to use the Corona satellite imagery (in the case of Micia, see Oltean 2002), but later access to proper maps improved greatly the quality of the mapping across the whole site. An alternative method, which was preferred later in this study, was to establish the geographical co-ordinates of the control points (to be used in the process of photographic rectification) on the ground during site visits using the available hand held GPS (Global Positioning System) technology. Applied consistently within the limits of the same site, the accuracy of the co-ordinates was within an acceptable 3-metre range of error. Initially GPS control-point coordinates were taken for a number of sites –e.g. Razboieni, Sebes, Vintu de Jos, -site 409 and 411, Sibot, Simeria and Hobita- but only at Simeria has this remained the only available data to support rectification and mapping. The application of this method for site location and transcription during this study was very much pioneering and had to be done within the limits of the technology and resources available. In wider landscape context, the inaccuracy of the technology could have produced misplacements of sites of approximately 15 metres. However, the recent availability on the market of GPS products with accuracy of under one metre is expected to enable this method to become a standard in areas of the world where appropriate map data is unavailable or unreliable.

But even the Romanian maps which are available are old; the most recent of them were printed in the '80s, but based on even older ('70s or even '60s) photogrammetric surveys. When compared with the aerial photographs, significant differences between the details provided by the maps and the features in the modern landscape were noted (e.g. the land system -see Oltean 2002, 224). After the changes in property systems and land division recorded within the last decade, those depicted by the maps can be considered as 'historical'. The larger fields of the CAP (former commonly owned and exploited agricultural units) have been replaced in many areas by long narrow strip-field cultivation. Given the circumstances, the topographical 1:5000 maps are a better alternative for site transcription than cadastral maps, even though they record only the track ways within a field, rather than each field

boundary. An additional problem of the cadastral maps which had to be used in a number of cases (e.g. Sebes, Vintu de Jos, Sibot) is that they do not record important topographical information, such as the contours, so that digital terrain modelling could not be produced.

At times the cultivation system has proved to be an impediment to site visibility from the air, particularly in areas of strip-fields, since the creation of cropmarks is heavily dependent on the type of vegetation coverage and not all crop types are equally responsive to archaeological features beneath the ground. For example, at Vintu de Jos (site 409) reconnaissance in the summer of 2000 identified the plan of a settlement with sunken houses and storage pits immediately adjacent to a Roman villa both visible as cropmarks in a field when this was under wheat cultivation. The corn sown in the field in 2002 made the site invisible from the air, though it facilitated ground reconnaissance by Professor Hanson and myself which led to the discovery of archaeological material, including Roman *tegulae*, supporting the positive identification of the site as a Roman villa (see Hanson and Oltean, 2003; Oltean 2004). At Oarda, like at Vintu de Jos, some of the fields are more extensive so that a reasonable proportion of the remains of the building complex was more readily visible. However, in 2003 only some 50% the area of Oarda was visible because it was covered by two different crops which had different responses to cropmark formation. The most eloquent example of the strong bias in site recognition and mapping induced by cultivation of different crops in adjacent long narrow strips is visible at Micia (figure 5.33), where the extensive plan of the site included in this study (Figure 5.35) is the result of sustained survey over several years during which different parts of the site became visible as crops were rotated. Therefore, some 100 photographs were examined and several dozen were rectified and their archaeological features mapped in 3 different stages (in 2000, 2002 and 2003). Similar conditions have been encountered at Cigmau; while the extensive *vicus* at Razboieni, despite regular surveillance, only started to reveal its features in 2002 and more extensively in 2003.

Additional problems for site identification from the air were created by the specific climate and soil conditions. The partial floods along the Mures river in the summer of 1998 and the generally wet weather conditions the following year badly affected the creation of cropmarks in the survey area. By contrast, extended drought in 2000 also affected the vegetation and crops: on the one hand, parchmarks of buried buildings were visible in early June, while on the other, on extensive cultivated areas crops did not grow at all. At both Cigmau and Micia different buildings have been visible not only in different summers, but at different times during each summer because of variations in crop and soil conditions across each site (Oltean and Hanson 2001).

Because of the nature of the local soils (alluvial clays, retaining moisture better than sandy soils), mainly negative cropmarks are visible indicating the presence of stone buildings and thus favouring the discovery of Roman sites (Hanson and Oltean 2003). Positive cropmarks representing ditches, pits, drains or sunken-houses are rarely recorded. They are more common to agricultural villages and pre-Roman settlements, which means that the recovery of native-type of settlements by aerial photography has been significantly reduced, creating a potential bias that needs to be taken into consideration. Also, as demonstrated at Micia (Oltean *et al.* forthcoming) this bias in the data provided by aerial reconnaissance means that the cropmark evidence reflects the stone phases of

construction at the settlements, for only in the very best conditions are the slight traces of the construction trenches of timber buildings visible as positive cropmarks. Also, only rarely can cropmarks indicate different phases in stone constructions on basis of differences in alignment and features overlapping (e.g. Cigmau, Oarda, probably Razboieni –see chapter 5).

It is inevitable, therefore, that the recovery of site plans based on aerial photographs is partial. Given the changing climatic conditions and vegetation coverage in each season, aerial survey should become a regular annual activity, as it is in Britain, and throughout different seasons in order to be able to detect archaeological remains also through shadow, soil and frost marks; also, future research could augment these site plans with additional information, including precise dating.

The detailed mapping based on the interpretation of aerial photographs constitutes a separate layer of information within the GIS. Other layers cover general information on published archaeological sites and the satellite data. The mapping was generated using two different grid systems. The satellite data is calibrated according to the UTM-WGS84, which seems to be more and more the universally preferred mapping system. Accordingly, it was used also for the general views/maps of the area and the representation of the sites as points (in relation to database information). But for individual site plans of aerial photographs, the Romanian National Grid system was used (Proiectie Stereografica 1970 /Dealul Piscului). This was done partly because the maps available (1:5000) were using this system and partly because of the recognition that this of data-set would be used in subsequent field research, including excavation, by Romanian archaeologists. For these sites, a certain amount of information (e.g. topography, major rivers and streams, modern roads and railways) was digitised from the relevant 1:5000 paper maps in order to provide background information for the site maps. However, all the sites discovered through aerial photography are present in the general landscape views as a dot theme and, therefore, have been included in the general landscape analysis. The resultant base maps of the area provide an overview of the development of the landscape before and after the Roman conquest on which some of the some of the answers to the more complex issues of colonisation and, ultimately, romanisation in Dacia have been based.

It would be unfair to say which of the methods used in the present analysis has produced the greatest outcome. The conversion of published information into database or GIS format has each brought significant benefits towards general analysis by increased possibility to handle huge amounts of information. Nevertheless, starting from a set of data already flawed by imprecision (see above), it could only perpetuate them. Furthermore, terminological standardisation imposed by the conversion of data in the digital database format can by itself introduce bias, simply by losing a certain amount of information which at some point could become relevant in some aspects. In order to minimise such danger, the design of the database has tried to find an adequate balance between fields of attributes allowing limited options (yes/no or pre-defined list) and others where no such restrictions have been imposed, but one must be aware of such possibility. The aerial study has improved our knowledge of sites location and layout which determined objective evaluations on the character of the occupation and site function, but because of its nature (see above) it provided any result for a limited number of cases and for particular types of settlements (not able to identify settlements which by their nature and morphological characteristics had a reduced impact on the natural landscape -e.g.

possible unenclosed Dacian or non-villa Daco-Roman individual homesteads (see below chapters 4 and 5).

Figure 1.1: Roman remains on the 1870-1875 Austrian cadastral map of Transylvania: the auxiliary fort at *Micia* (above) and of the *colonia Sarmizegetusa*, with the Roman road eastwards still in use at the time (in red) (sections 183 and 231; © the Austrian State Archives, Vienna)

Figure 1.2: Remains of the Roman road in Tara Hategului between Unciuc and Subcetate (section 232) and of the Roman road along the Mures river from the river crossing near Gelmar, towards Sibot (© the Austrian State Archives, Vienna)

Figure 1.3: *Ulpia Traiana Sarmizegetusa* -general view of the modern village from the east with the Iron Gates of Transylvania in the background (WSH)

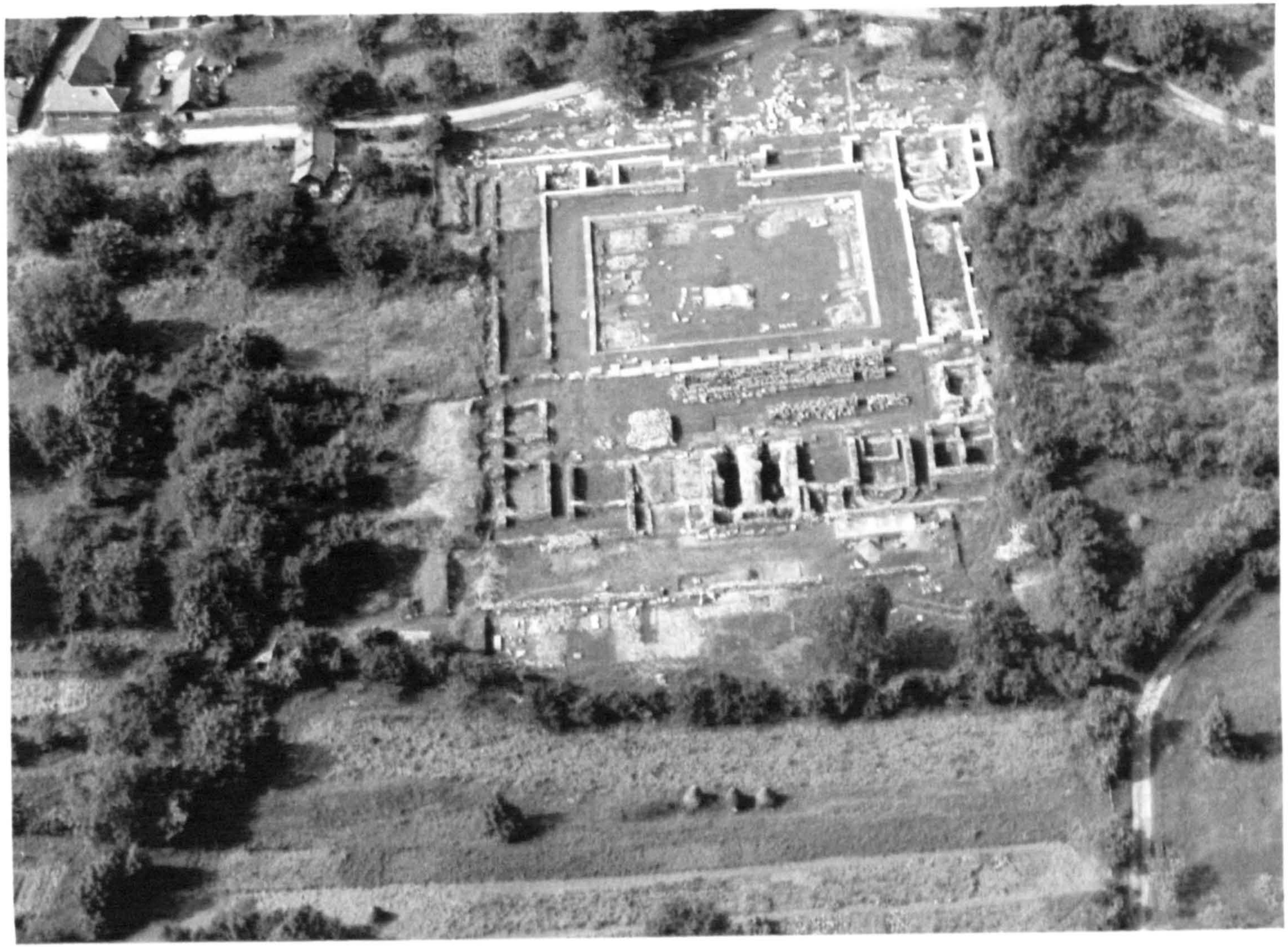


Figure 1.4: *Ulpia Traiana Sarmizegetusa* -the forum. (WSH)

Figure 1.5: *Apulum* –general view (WSH) and detail of the eastern enclosure (wall and rampart) visible as cropmark (IO)

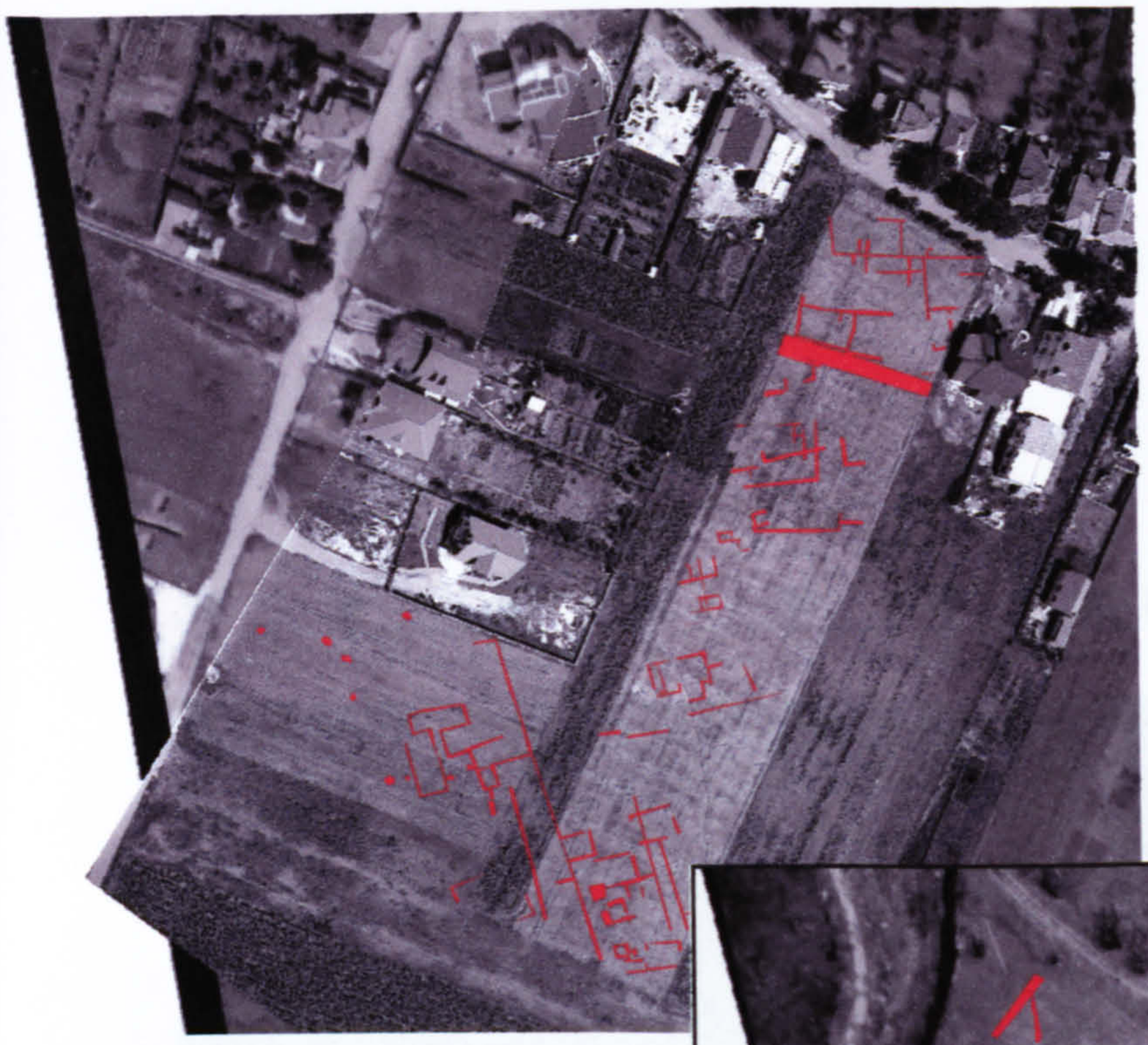


Figure 1.6: Mapped Roman buildings from cropmark evidence in the *colonia* (below) and the *municipium* (left) at *Apulum*

Figure 1.7: (below) Low-altitude aerial photograph of a Roman building (as a negative cropmark) somewhere north of Alba Iulia by V. Barbuta (unknown date; courtesy of V. Barbuta).

Figure 1.8 : Flight track logs in the study area since 1998

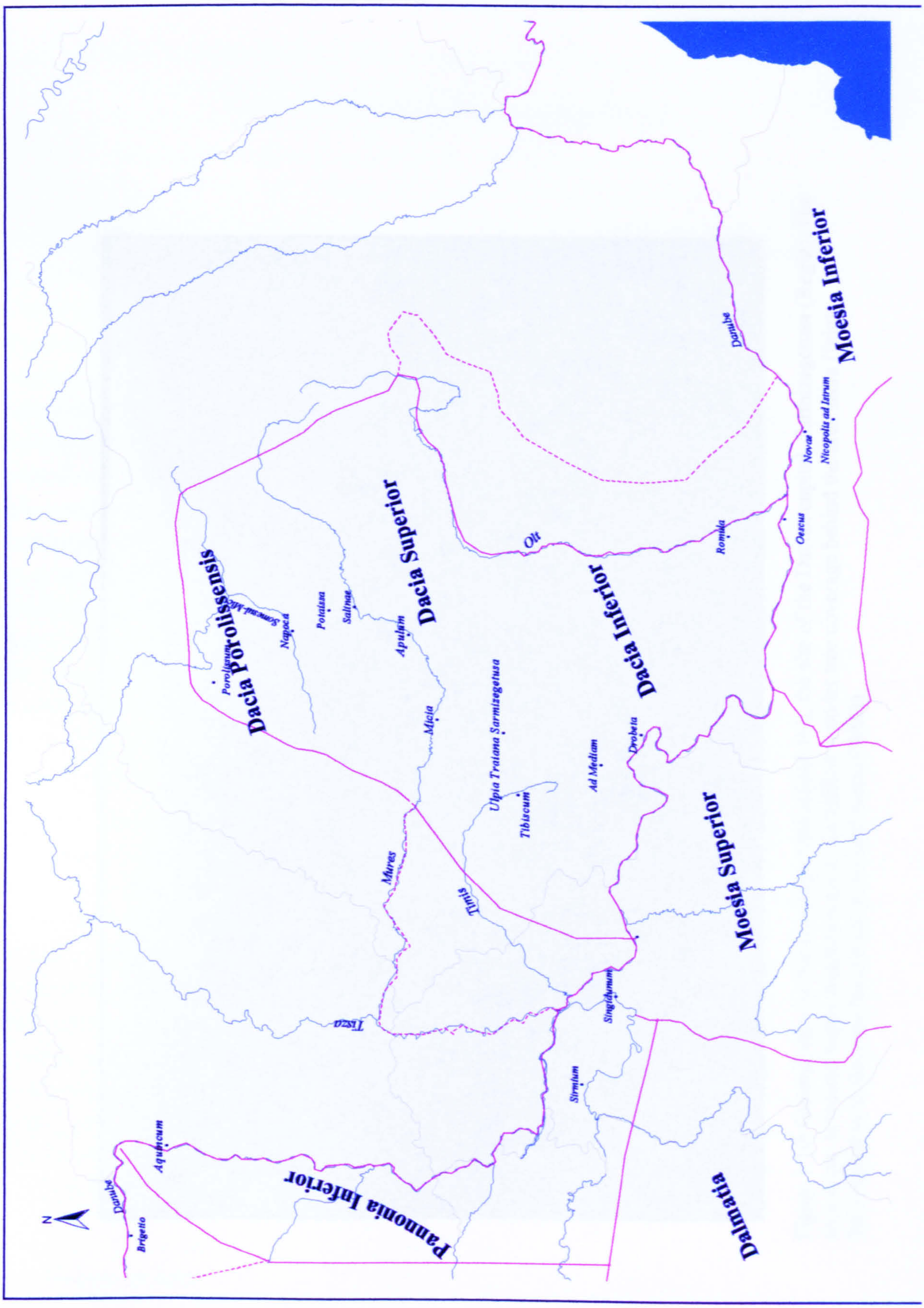


Figure 1.9: Map of Dacia and its neighbours

Figure 1.10: General view of the Gradistea Muncelului Hill, the site of the Dacian capital, Sarmizegetusa (Regia). The area sacra is located in the small clearance; the hillfort is under tree coverage behind the area sacra (faint differentiation in the trees level indicate its enclosure) (WSH)

Chapter 2: The study area: natural environment

Before proceeding any further, it is necessary to evaluate the potential of the natural environment within the geographical area covered by the present study. As highlighted in the previous chapter, the interaction between humans and environment eventually resulted in a transformation of both, a process in relation to the latter that would have left significant traces potentially identifiable by modern archaeological methods. However, the nature of the modern landscape also determines the way archaeological traces are revealed and identified by the methods chosen. There are a number of natural factors such as climate (temperature, rainfall and wind regime), geological background and topsoil cover, which are relevant for aerial photographic interpretation, because they are involved in the creation of crop marks that could indicate the presence of buried archaeological features underneath. Also, the alteration of landscape through natural erosion is important for site survival (e.g. landslides, flooding, earthquakes) so it is necessary to assess the incidence of such phenomena within the study area. But the use of landscape is not a single event. Most of the physical space is re-used over and over again, and the effect is that later action often affects earlier traces. This highlights the human factor as one of the most dangerous for the survival of archaeological sites, so an evaluation of the economic (industrial and agricultural) later /modern use of the landscape is also necessary. The impact of these issues on the methodology employed in this research has been discussed in chapter 1.

But more important than these methodological issues is the relevance of the natural environment for analysing and understanding past societies, through the reciprocal relationship between landscape and humans. Therefore, this study must begin with an evaluation of those factors that facilitate human life both for individuals and communities: gentle climate, availability of food and tool resources, or security against the forces of nature, animals and human enemies. Topography is relevant for settlement location in terms of access to fertile lands, water sources and minerals, access from and to main circulation/transport routes and defensive capabilities. Similarly, the climate must provide an appropriate regime of annual temperatures, rainfall and wind in order to ensure survival of both human communities and various useful species of plants and animals, whether domesticated or wild. Last, but not least, understanding of the local geomorphology can reveal the existence of natural resources (metal ores, salt, stone), or the location of fertile arable lands suitable for cultivation.

1: Introductory data:

Modern Romania is located in Eastern Europe, to the north of the Balkan Peninsula, between 20°15'-29°42' east and 43°37'-48° 15' north. The neighbouring countries are Ukraine to the north, Moldavia to the north-east, Bulgaria to the south, Serbia to the south-west and Hungary to the north-west, with

the Black Sea to the south-east. The climate is of temperate-continental type, with hot and wet summers and cold, fairly dry winters, in fact a transition between the oceanic and extreme continental climates, the former very moist while the latter too dry (Morariu *et al.* 1969, 10). The geography is varied, mountains, hills and plains being distributed in equal proportions within the territory of the country: 30% of mountains, with altitudes over 800 m, 37% of hills and tablelands, ranging from 800 to 200 m altitude, 33% of plains (Morariu *et al.* 1969, 10). It also has a rich network of watercourses, and a vegetation and fauna typical of these areas. The geography of Romania is largely structured around the south-eastern Carpathian Mountains (that are a branch of the Alpine-Himalayan Mountains). The lower altitude units, such as the sub-Carpathian hills and the plains, spread out from them in a radial pattern. The main branches of the mountains are oriented from north-west to the south-east (the Orientals), from east to west (the Meridionals) and from south-west to the north-east (the Westerns), surrounding a large lower area of hills, tableland and alluvial plains that is called Transylvania.

2. Physical geography: geomorphology, topography and geology

From many points of view Transylvania is very much defined by the surrounding mountains. The name itself first occurs in early medieval Hungarian chronicles of 11th century written in Latin (Anonymus, Simon de Keza) as the land "beyond the forests" (Pop 1998, 75) that once covered much of the Carpathians. Transylvania can be understood as a space enclosed by the mountains. This topographic particularity has determined various interpretations of the advantages that this space has offered to human settlement throughout history. Opinions vary from 'citadel' to 'meeting point', that are in apparent contradiction, but it is exactly the particularity of its topographic and geographical setting that makes both interpretations equally true.

From a geomorphological point of view, the south-eastern Carpathians were formed in the post-Mezo-Cretaceous and are characterised by medium and low altitudes, which average 1000 metres, with valleys of around 500 metres in depth. These mountains are very fragmented, both longitudinally and transversally, by numerous depressions and river valleys, making them more easy to cross from one side to another. Some of the mountains are of younger, volcanic origin, but most of them were created by the folding movements that happened at the end of Pliocene and the beginning of the Quaternary period (Gherasimov *et al.* 1960, I, 197). They were followed in some areas (southern Carpathians) by uplifting movements at the end of the Cretaceous and during the Tertiary period (Gherasimov *et al.* 1960, I, 212).

However, these movements simultaneously affected the inner area too. Transylvania was first slowly sinking compared to the rising mountains around. This process took place from the beginning of the Cretaceous until the Pliocene, when it was in-filled by marine and continental deposits of up to 4000 metres in thickness and transformed into a large plain. Later on this area was influenced by opposite (rising) orogenic movements at the beginning of the Quaternary and was transformed into a hilly region (tableland) defined by the piedmonts and internal sub-Carpathian Hills located at the contact area with the mountains and the Transylvanian Tableland in the middle (Gherasimov *et al.* 1960, I,

197). The water from the interior drained away through the main river valleys, though some of the 'gulfs' located at the contact area with the mountains remained under water until much later, in the Quaternary (Morariu *et al.* 1969, 27), when they became depressions (the so-called 'tari' – 'countries', such as the Tara Hategului).

The geographical focus of the present study is the western side of Transylvania (figure 2.1). In topographic terms this includes the mid-Mures valley between Ocna Mures – Razboieni to the north and Zam-Savarsin to the west, and the whole Strei River valley and the Hateg depression to the south. The area is surrounded by higher grounds rising gradually on the both sides of the valleys as terraced sides of the Internal Sub-Carpathian Hills and the Western and Meridional Carpathians to the west and south, and the Transylvanian Tableland to the east. This gives an amphitheatre-like appearance to the whole area, centred along the valleys of Mures and Strei. For consistency the topography of the area is presented here by its main geographic units, following a circular route from north to south along the Mures and Strei valleys, starting with the highest altitudes of the mountains bordering the study area to the west and south and continuing with the hills at the contact zone with those mountains and the western side of the Transylvanian tableland (that constitute the eastern limit). Finally, the presentation will descend to the river valleys, the plains and corridors created by river action.

The Western Carpathians have a complex structure resulting from their formation process in different phases. Their genesis started in the Hercinian, when they had formed a single structural unit along with the southern and the eastern Carpathians. The process continued in the Cretaceous, during the Alpine orogenesis (the Austrian and Laramic phases) when they were refolded, and later at the end of the Cretaceous were fragmented into low height horsts/rifts and grabens (depressions) during the tertiary through vertical movements. This process separated these mountains into main units giving them their final shape (Gherasimov *et al.* 1960, I, 218)

The Apuseni are the highest group of mountains in the Western Carpathians (1848 metres at Curcubata Mare). The core (central nucleus) of this massif is crystalline, but their geo-morphological structure is very varied, building a whole puzzle of rocks from crystalline to Palaeozoic and Mesozoic sedimentary and even eruptive-volcanic. The Trascau Mountains are located on the eastern side of the Apuseni Mountains and along with the Metaliferi and the Zarand Mountains, constitute the north-western limit of the study area, along the Mures valley. These mountains are of low altitude, ranging between 800 and 1200 metres (Gheorghiu 2001, 2). The geology of the Metaliferi and Trascau Mountains is influenced by the fact that their Cretaceous limestone was broken by many Mesozoic and Neogene volcanic eruptions, and this special blend created many defiles and canyons. This has been reinforced by tectonic and erosion fragmentation, so that the general topography is that of low mountains and hills. However, if for the Metaliferi it is their volcanic character which is most evident, in the Trascau the sedimentary aspect dominates, where limestone is predominant, moderated by denudation phenomena. The particular mosaic of various rocks of different origin and physical properties of the Metaliferi Mountains: sandstone, Jurassic limestone, volcanic rocks such as dacite, andesite and basalt - make them significant also for their content in metal ores, in particular

gold (Floca 1957, 16), as their name implies. The Zarand Mountains have a different character, with a monolith aspect determined by their geology composed of crystalline rock with granite intrusions, though their altitudes are low (up to 860 metres at Highis Peak, but an average of 400-600 metres – Morariu *et al.* 1969, 25). Their metal ores are located mostly in their northern area (Floca 1957, 16).

The Poiana Rusca massif is delimited by the Apuseni Mountains and the Retezat Mountains, by the Mures Defile and by the '*passage obligee*' of Poarta de Fier a Transilvaniei (The Iron Gate of Transylvania). At the end of the Cretaceous these mountains were connected structurally with the southern Carpathians (Retezat Mountains) along with the Banat Mountains (the south-western unit of the Western Carpathians). During the Mesozoic and the Tertiary the vertical movements had separated them completely through valleys-defiles of over 1000 metres in height (Gherasimov *et al.* 1960, I, 218). Their maximum height is just above 1400 metres (1378 m at Pades Peak), but gives a more powerful impression of massiveness because of their geology formed by metamorphic schists (Floca 1957, 15). They have broad ridges delimited by radial valleys and extremely rich resources of iron around Hunedoara, but also copper and andesite in the vicinity of Deva (see below).

The mountains that border the study area at its southern limit belong to the main group of the southern Carpathians and consist of the Retezat group to the south-west and the Parang group to the south-east. The Retezat and the Parang groups of mountains are amongst the highest in the country, with alpine peaks (the highest at Parangul Mare and Peleaga with 2518 and 2509 metres respectively). Like the rest of southern Carpathians, they are formed by crystalline rock (schists, micaceous schists) through folding movements that stopped at the end of the Cretaceous. (Gherasimov *et al.* 1960, I, 212). Then, but especially during the Tertiary, they continued to rise through uplifting movements that broke them into main branches separated by depressions (e.g. the Petrosani depression separating Retezat from Parang). Their crystalline geological background of Hercynic structure is here more apparent, thanks to denudation processes that took place in the Pliocene and Quaternary and produced significant quantities of alluvium deposited at the base and produced pied-mountaneous plains in the Hateg Depression. However, limestone is also present in the composition of some mountains (in the Retezat), but mostly in the valleys. Their upper sides were strongly shaped by glaciers, whose remains can still be seen as multiple glacier lakes. Under these peaks are located the sources of deep glacier valleys (sometimes more than 1000 metres in depth) and steep slopes, and water courses that descend in steps and falls into the lowlands, oriented at a 90° angle from the mountains (Gheorghiu, 2001, 3). The sudden sharp rise of the Retezat Mountains peaks along with the continuous longitudinal display of the anticlines, seen from the surrounding areas, increase the impression of impenetrability (Gheorghiu, 2001, 3). The Sureanu Mountains (also called 'Sebes' or 'Orastie' Mountains) part of the Parang branch, are the south-eastern limit of the territory that is the subject of this study. They are lower than the Retezat (2061 metres at Sureanu Peak and 2130 at Virful lui Patru in the Sebes Mountains), and have large areas with traces of denudation and erosion, and also of glacial topography. Their altitudes range from 950- 1000 metres to 2000 metres. The upper parts of most of these mountains are fairly level on different steps, without much fragmentation. These natural terraces are organised symmetrically to the north and the south of a central axis, with a higher centre (1600-1800 metres), then an intermediate level at 1200-1400 m

and outer limits of 900-1100 metres to the north, in Transylvania (Gheorghiu 2001, 3). Their platform-like appearance is even more evident at their western end, which extends into a large elevated platform (the Luncanilor Platform). Located at the south-western end, at the point of contact with the Hateg Depression, is a large carstic zone (Ohaba Ponor-Banita) that was formed on a basis of Jurassic limestones with many caves, dolines, canyons and subterranean rivers (Gherasimov *et al.* 1960, I, 216).

Immediately below the mountains the lower step of altitude is formed by the hills located at the point of contact between the mountains and the alluvial plain to the west and south (inner sub-Carpathian Hills) and the Transylvanian Tableland to the east. The general topography is of hills with smooth slopes regularly dissected by watercourses, grouped around river terraces and valleys (Geografia Romaniei III 1987, 345). To the east of Trascau and the Metaliferi Mountains, the hills below can be described as a high piedmont of 600-300 metres fragmented by frequent watercourses and a lower, terraced piedmontaneous plain with altitudes ranging from 350 to 180 metres (Gherasimov *et al.* 1960 I, 228). To the south of the Metaliferi Mountains, only a third of the space is occupied by hills. The hills on the right bank of the Mures, between the river and the Metaliferi Mountains, are made of slate (Floca 1957, 16). The rest is a terraced alluvial plain formed by the Mures river and its tributaries originating in the Sureanu Mountains. These watercourses have determined the development of the deposits in the area south of the Mures where the southern inner sub-Carpathian hills are located, bordering the northern limit of the Sureanu Mountains and built up on diluvian structures (Floca 1957, 16). On both sides of the river Mures there are 6-7 terraces predominantly horizontal or slightly divergent slopes (Gherasimov *et al.* 1960 I, table 1 and fig. 33). The predominant soils are eroded (podsols) all over the piedmonts, terraces, river meadows of the Mures and its tributaries, as well as on the slopes at high altitudes. The geology of the hills from Uroi, north of Simeria, and those around Deva is represented by volcanic stone (augite-andesite) (Floca 1957, 16). The hills around Hunedoara, those along the Strei valley, and those in the south, along the northern limit of Retezat Mountains in the Hateg Depression, have the same general aspect of multiple piedmontaneous steps and river terraces. Large quantities of alluvium resulting from denudations created by uplifting movements of the mountains (Parang, Retezat) during the Pliocene and Quaternary were transported into the valleys creating piedmontaneous plains in the southern and eastern side of the Hateg Depression and the Orastie Hills (Gherasimov *et al.* 1960, I, 212). The Hateg depression is in fact a piedmont plain with fan-shaped terraces, with dejection cones of alluvium arranged in 3 concentric steps, and a density of watercourses.

The Transylvanian Tableland is the largest in Romania. Its hills, unlike those in the outer sub-Carpathian ring, which have the appearance of low mountains, are more bulky with milder slopes and horizontal to slightly sloping unfolded strata. Formation of the Tableland started with the first phase of the raising process of the Carpathians, with undersea sedimentation, until the end of the Tertiary period when the sea water drained away and it become a large plain (see above). The later folding movements of the same mountains pushed and lifted up the middle area so that now in some places the Transylvanian Tableland reaches even 600-700 metres in height. (Morariu *et al.* 1969, 32). The geological background is represented by argyles, marls and sand, with limestone and volcanic

intrusions. The eastern half where the aspect is that of high hills and plateaux fragmented by river valleys is of higher altitude than the western side. The present study covers primarily the western area of the Transylvanian Tableland, also called the Secaselor Tableland. There the surface is characterised by the presence of monocline sloping and small depressions, along with sloping of the soil caused by ongoing erosion (Gherasimov *et al.* 1960, I, 230-231). The hills in the western and north-western part are lower (450-500 metres along the Mures River), with broad arches and river terracing along the river valleys (Gherasimov *et al.* 1960 I, 231).

The soils of the mountain, hill and tableland regions is, with few exceptions, composed of varieties of forest soils: brown forest soils, podsolic or not in their specific variants for hills and mountains, along with other varieties of acid brown forest soils affected by podsolisation to various degrees. Also there are a few areas of chernozeom along the lower Sebes valley and to the south of the Mures valley between Sebes and Simeria, in the vicinity of Alba Iulia and Teius, around Razboieni and Deva, which corresponds with the confluence zones of the main tributaries (Aries, Tarnava, Sebes, Strei). Not surprisingly, these particular areas are also known to be the most productive in terms of cereal cultivation.

The plains occupy only a reduced area. They are far more recent creations, all of them being of alluvial origin developed along the main river, the Mures, and its main tributaries: Aries, Tarnava (with the Tarnava Mare and Tarnava Mica), Ampoi, Sebes, Strei (with Rau Mare and Galbena). Others, like the Cugir, Orastie, Geoagiu, or Cerna rivers have produced smaller impacts in terms of topography and outflow. Many other watercourses present in the area are nothing more than streams. The river Mures originated in the Oriental (eastern) Carpathians and, with its length of 880 kilometres and outflow average of 70 cubic metres per second (Floca 1957, 20), is regarded as the most important tributary of the Tisa River (Morariu *et al.*1969, 46). Its course is generally oriented E-W, though in its medial segment it follows the contact line between the internal sub-Carpathian Hills of the western Carpathians and the Transylvanian Tableland. It changes its direction from an E-W orientation to a NE-SW at N 46° 36', E 23° 72' just after its confluence with the Aries River on its right side. The N-S direction is maintained also by the confluence with Tarnava on the left side and Ampoi on the right side, but changes again near Alba Iulia to an ENE-WSW direction determined by the confluence with the Sebes and Cugir rivers from the left side, until the confluence with the Strei River determines another change of angle to ESE-WNW at N 45° 85', E 23° 11'. After that the river course continues its E-W direction constantly, crossing the Western Carpathians through a narrow corridor and the plain to the west until it meets the Tisa River.

The general appearance of the valleys is that of corridor valleys, with a variable width that increases in their lower courses immediately after they exit the mountains. The Mures is a very active river; its alluvial deposits have created a large fertile valley up to 5-8 kilometres wide. The main tributaries have an important contribution both to the general outflow of the Mures and also to the total quantity of alluvium. This results in the plain of the Mures being generally larger/wider at its confluence with some tributaries providing space for agriculture and human settlement. The contribution of the tributaries is also responsible for the changes of direction of the main course of the river and creation

of multiple meanders (Figure 2.2). The soil cover is composed of alluvial soils, alluvial proto-soils and chernosem, with a salt content (traces of the long ago-drained sea) in some places. The meadow land along the Mures, Strei, lower Sebes, Cerna and Orastie valleys, and the mid and lower valley of the Ampoi, are regarded as being under threat of flooding (Gheorghiu 2001, 5), which has reinforced the traditional view of settlement pattern evolution which excludes the lowlands as main inhabited areas in the past.

Along the valleys fairly parallel terraces were developed, usually 6-7 in number, but up to 8 at the contact zone with the hills and tablelands, having in general a horizontal aspect (Gherasimov *et al.* 1960 I, Table 1). Exceptions occur, however. Around the Tarnave region they were deformed by rising movements, and in the area between Sebes-Vintu de Jos and Deva their aspect is slightly downward sloping. Most of them date back to the Quaternary period, though some opinions attribute the higher terraces (the 7th and the 8th at 120-200 relative altitude) to even older times (Cretaceous). However, this increases the topsoil erosion conditions in the region (see below).

From several points of view, the study area does not constitute a unitary space. In geographical terms this area would be subdivided into several smaller units: the Aiud-Alba Iulia Depression, the Orastie Corridor and the Mures Defile along the river, while the southern area includes the Hateg Depression (Tara Hategului) and the Strei valley. What gives unity to this space, however, are the communication and access possibilities which are important for human settlement. The Mures valley was the main communication route between Transylvania and the western (Pannonian) plain. The river valley provides a convenient passageway beyond the Western Carpathians through the Mures Defile, a series of short defiles and small basins with larger terraces. But this is not the only passage option. The Strei River, apart from being one of the most important tributaries with a fertile alluvial plain in its lower valley, provides a convenient connection with Tara Hategului to the south. This in turn provides a convenient nodal point, connected to the plains south of the Meridional Carpathians through the Jiu Depression and Defile, and to Banat to the west through the Iron Gate of Transylvania. This adds even more importance to this space in terms of settlement emergence and use over the history of Transylvania.

3. Climate

The climate of the region reflects that of Central and Eastern Europe generally and is usually defined as of temperate-continental type with 2 moderate seasons, spring and autumn, one cold and one hot season each year. However, there are small variations, local particularities that define microclimatic zones under the influence of factors such as local topography, variations of wind or rainfall regime, or indeed, of solar radiation. In Romania masses of cool and damp air from the Atlantic meet opposite dry air masses coming from the east, which are hot in the summer and cold in the winter. Polar air from the north in the winter, or warm air from the Mediterranean area in the summer, are also occasionally present. However, the mountains that surround Transylvania behave like a barrier to these extreme phenomena, and ensure a more constant microclimate within the enclosed space. They stop both the cool, damp masses of air from the west, or the cold and strong, sometimes stormy

winds from the east (Morariu *et al.* 1969, 39). The annual solar radiation is 35-40,000 calories per square centimetre. In general, the humidity is higher than in the regions to the east of the Carpathians. The various meteorological elements are distributed unevenly, which creates several microclimatic areas. Foehn effects (warm, dry winds) produced by the topography of the mountains influence the climate locally in the colder seasons, especially in western Transylvania (Gherasimov *et al.* 1960 I, 318), and in the spring they are usually the ones that melt the snow cover (Morariu *et al.* 1969, 40). The temperature is higher in the western part (an annual average temperature at Alba Iulia of 9.5° Celsius -Gherasimov *et al.* 1960 I, 317) while the relative humidity value and the rainfall averages (under 600 millimetres at Alba Iulia) are lower than on the eastern side of Transylvania.

The variation in temperature values during the year is significant. During the winter there are some 100-150 days with temperatures below 0° Celsius and occasionally this could drop as low as –28-30° Celsius, while rising to +38-40° Celsius in the summer. Also, the highest rainfall values during the year are recorded in June (85-110 millimetres) while the lowest are in February (below 35 millimetres). However, the rainfall could drop during droughts to annual averages of 400-450 millimetres (Gherasimov *et al.* 1960 I, 304-6), but in Transylvania these periods rarely last for more than 50 days, though the western part can more easily exceed this number. Snow is a usual presence during winter for an average of some 50 days each year between late November-early December and end of March, though not continuously (Gherasimov *et al.* 1960 I, 310). In the mountains and the mountain depressions the values are different. The figure for the solar radiation per annum can be nil or, indeed, have a negative value, because of the longer-lasting snow cover than at lower altitudes (above 100 or even 200 days on the highest peaks). The Hateg Depression behaves in climatic terms like a mountain depression which in some areas could have up to 7 cold months from October to April, and the relative humidity is higher than on the lower Strei valley and the Mures valley with rainfall figures of 700 millimetres per annum (Grumazescu 1975, 119). This is, though, significantly less than in the much smaller and enclosed Petrosani Depression, where the average rainfall is 1001 millimetres and average temperature 8° Celsius, higher than the –7° Celsius characteristic of the mountain areas. The difference in climatic regime between the northern part of the study area and its southern part is explained by the fact that the Mures Valley has a greater exposure to the circulation of air masses than the Hateg area, which is isolated by the surrounding mountains and hills and therefore behaves like an enclosed space. This difference has little relevance in terms of human settlement, though it does affects the agricultural pattern and local economy. Even within the Hateg Depression the effect of climate has made arable predominant in the western half that is influenced by warm air currents from the west (Banat), which penetrate the mountains through the *passage obligée* from The Iron Gate of Transylvania, while the eastern half remains predominantly under pasture.

4. Modern flora and fauna

The modern landscape is extensively exploited. The current land use in the lower areas is focused on arable cultivation, though cultivated small fields can be found at high altitudes in the mountains (up

to 1000-1400 metres in the Sureanu Mountains- Gheorghiu 2001, 3 – and up to 1200-300 in the Apuseni Mountains –Morariu *et al.* 1969, 24), though only as subsistence production. The preponderance of arable land in the fertile alluvial plains, however, changes gradually towards orchards and vineyards and further on to pastures at higher altitudes. The topographic and climatic particularities of the river valleys allow arable cultivation not only on the lower terraces, but also on the large, flat or slightly sloping higher terraces. The steeper slopes with good sun exposure are occupied by orchards. Vineyards are also present in the areas where exposure to the sun is doubled by mild climatic conditions, such as in the area around Aiud and Alba Iulia and on the hills to the south of Metaliferi Mountains along the Mures valley (see Floca 1957, 46). The rest of the land is occupied by pasture and forest.

The cultivated plants in the area are mainly cereals. The fields of corn/maize, wheat, rye, barley and oats cover some 78 % of the arable areas. 18 % of the arable land is occupied by crops of potatoes, sugar beet, tobacco, hemp, sunflower and other cultivated plants that are used for feeding animals. Vegetables (other than potatoes) are cultivated on 4 % of the area. Fruit trees are common in hilly areas and even in the mountain areas at lower altitudes, producing plums, apples, pears, cherries, sour cherries –'*visine*', apricots, peaches and walnuts, and there are also some areas favourable for vine cultivation (Floca 1957, 46-7; also, general data in Morariu *et al.* 1969, 53). Of course, several of these species of cultivated plants were introduced to the study area after the Late Iron Age and Roman occupation, but have been included here for their relevance to the research methodology.

The natural landscape also has been greatly affected over time by several factors, both natural and (especially) human. However, below 250 metres altitude the surviving wild vegetation is of steppe (as a secondary effect of deforestation – Morariu *et al.* 1969, 57) and pastures mixed with marshland vegetation, such as reed and bulrush, while the most common types of tree are acacia, poplar, alder and willow (Floca 1957, 26). According to Floca (1957, 26-30), between 250 and 700 metres altitude the forest vegetation is represented largely by oak, turkey oak, sycamore-maple, ash, elm, maple, linden, lilac, wild apple, pear and cherry. There are also bushes of corneal, sweet briar/hip, and others, or herbs such as fescue (*Festuca vallesiaca and sulcata*), lettuce, geranium (*Geranium Robertianum*), common lungwort, marigold, moneywort and hawkweed (*Hieracium transsilvanicum*). At higher altitudes, between 700 and 1000 metres, the wild vegetation is represented by beech (though in the Poiana Rusca, Sureanu or Parang mountains, the beech level can go as high as 1400 metres in places). At 700 metres it is usually mixed with oak. Higher up, at 800 metres, it is mixed with fir, hornbeam, sycamore-maple, ash, elm and, towards its upper limit, spruce fir. These forests are mixed with bushes of blackberries, raspberries, corneal, hazel tree, or herbs like bedstraw, sweet-scented bedstraw, toothwort (*Dentaria bulbifera*), asarabacca, *pulmonaria montana* (*rubra*), blueberry bushes, wood sorrel, broadleaf enchanter's nightshade, herb paris and lupine (*Alium ursinum*). The altitudes between 1000 and 1700 metres are occupied by coniferous trees (fir/pine and spruce fir) mixed with beech only at their lower levels. Varieties of moss, wood sorrel, hawkweed, groundsel (*Senecio Fuchsii*) fern (*Atyrium filix-femina and filix-mas*) lily of the valley, blueberry bushes and black currant are also present. Above 1700 metres the vegetation is a mixture of small trees and bushes (small pine, small juniper) with grasses (gramineae), green alder,

rhododendron and blueberry bushes. On the highest areas the only plants are the rich, alpine grasses in pastures, blueberry bushes and edelweiss.

The modern wild fauna in the plains is represented by hares, rodents, sparrows, swallows and nightingales. According to Floca (1957, 26-30), in the oak tree belt badgers, wolves, foxes, deer, boars, martens and weasels are to be found, in the beech forests deer, stag, roe deer, boars, wolves, foxes, martens and buffaloes, while in the coniferous belt there are bears, chamois/ibex, stags, lynx (Retezat Mountains), grouse, woodpeckers and vultures. Hunting is focused on hare, fox, wolf, otter, badger, wild cat, marten, lynx, boar, deer, black goat, stag, bear, grouse, pheasant, partridge, quail, duck, dove, vulture, falcon, merlin, goshawk, raven, crow and magpie. The rivers, ponds and lakes are populated by many species of fish, such as barbell, sheat fish, carp or trout (Floca 1957, 30-2). However, animal husbandry is one of the principal economic foci in the area, facilitated by the presence of extensive pastures. The animals exploited include cattle for milk, meat and traction – some domesticated buffaloes, horses (in the lower area the most common are Lipizaner, Nonius and half-breeds of these races, while in the higher areas the horses used are smaller, more robust races), pigs for meat, fat and meat products (in the Hateg area and Strei valley there is a local, black breed), sheep (the main animal especially in the mountain areas) and goats, birds (hen, turkeys, ducks, geese) and bees (Floca 1957, 45-9).

5. Environmental change during history

A fundamental question is extent to which the landscape described above reflects the image of the same physical space two millennia ago. In what follows, some attempts will be made to assess the main character of the ancient landscape of the mid-Mures valley and Tara Hategului: the presence of species of plants and animals, the land use, or indeed any other changes within the landscape. Over time many changes can occur, resulting from both natural as well as human causes, some of which will be analysed below.

5.1 Natural changes:

Natural soil erosion in most areas is low and moderate (in the hills in the Strei Valley, Tara Hategului and the hills south of the Mures valley and Secaselor Tableland), though it is generally high in the mountains and in the hilly area beyond Alba Iulia to the north on the right bank of the Mures (see Gherasimov *et al.*1960 I, table 2 and Annex XXII). It is caused mostly by the rainfall regime and is usually higher in the northern area of the Transylvanian Tableland as a result of the fragile deeper geological strata (see above), and on steeper slopes of the mountains or hills when the natural terraces are slightly diverging facilitating the erosion of the topsoil through rain or snow melt-water. In these areas high quantities of rain water or melted snow can result in the creation of torrents or landslides. The lower areas along the river valleys are regarded as falling under flood incidence, which can occur frequently even today (see above). Indeed, the main river valleys have experienced a lot of movement (see above) and in some cases this has resulted in significant changes of local

topography (see the case of its impact on settlement emergence and evolution at Apulum-Alba Iulia in Diaconescu and Piso 1993, 70). Wind erosion is minimal especially in the lowlands, which are protected by the surrounding mountains. Volcanic activity in the Western Carpathians would have ceased a long time before the appearance of early humans. However, earthquakes can occur with some frequency given the location of a seismic area in the outer south-eastern corner of the Carpathian Mountains. Seismic activity monitored in modern times proved to have a much greater effect in the southern and eastern outer-Carpathian regions than in the inner-Carpathian area, in Transylvania, but an extrapolation of the current situation to the Late Iron Age and Roman period is risky. There are no written accounts of major cataclysms of this sort within the 3-4 centuries of late Dacian and Roman times. Nonetheless, later seismic activity could have affected the survival of archaeological sites.

Major climatic changes generally occur over long time-periods in a cyclic succession of general warmth followed by colder periods. Minor changes within shorter periods of time can also influence geographic regions in a significant manner. All of them can determine the erosion processes mentioned above. Similarly, all life, whether faunal, floral or indeed human, is influenced considerably by climate. In the latter case the effect of climatic change has a great impact in terms of basic living necessities such as drinking water and food supply, warm and dry housing/shelter and clothing. Within the study area there is little evidence for such changes that would have significantly affected human life/settlement. In general, archaeological studies seem to consider the climate of late antiquity as colder and wetter than the modern pattern (Gheorghiu 2001, 6; Glodariu *et al.* 1996, 10). This seems to be confirmed by the brief reference by Pliny to ice bridging over the Danube in his description of Trajan's preparation for war against the Dacians, a phenomenon that produced serious problems for Roman troops on the Moesian Danube *limes* since it facilitated barbarian attacks on the provinces south of the river. Indeed the phenomenon is regarded by some as not uncommon given that Dacian attacks during Domitian's reign some 15 years earlier were taking place in similar climatic conditions (see discussion in Southern 1997, 95) and also the Dacian raid in 10 BC (Bennett 1997, 86). The strategic problem created was serious enough and, therefore, frequent enough for Trajan to consider an alternative, more efficient *limes* using the Carpathians as natural boundary (Bennett 1997). River freezing also occurs in the modern climate, though less in the case of Danube, and this phenomenon has, therefore, been used to illustrate that the climate was colder than the modern pattern. Unfortunately, when attempting comparisons based on such evidence, less attention has been given to the impact of industrialisation/pollution on the Danube, an aspect that must be considered as the different chemical composition of the Danube waters may have lowered their freezing temperature. However, the presence of vine cultivation in Roman times would not allow for much colder average temperatures than the present ones. In some examples of Roman buildings in Dacia, as for instance at *Sarmizegetusa Ulpia*, the early *rigola* (rainwater drains) have been replaced in their later phases by much larger ones. That could be interpreted as an indicating an increase in rainfall, but could also simply reflect better/more solid constructions. Some indication of more severe water-logging at *Sarmizegetusa Ulpia* at some date after the Roman period may be suggested

by the network of drainage channels on the site of the forum. Further environmental studies would provide more data which might help to clarify this issue.

5.2. The impact of human exploitation on the landscape:

The effects of human exploitation/use are clearly visible. They range from the creation of drainage systems to artificial lakes, and from quarrying at various scale for materials ranging from gold to clay, to huge sterile deposits around industrial centres such as Hunedoara, Calan, Deva, Mintia. (Figure 2.3). As shown above, the large majority of soils in the area are of forest type. However, the forests now mostly cover only the mountains and higher hills as they have made space for agriculture. This is not just a modern phenomenon, as extensive deforestation has a long history (Apolzan 1987, 44-48). In the modern era, however, a planned policy of reafforestation was introduced, especially at high altitudes, but generally on steeper slopes under erosion threat. One objective of the state policy of intensive agriculture in the second half of the 20th century involved 'conquering' marshland and converting it to agriculture which saw the infilling of marshes and the building of extensive drainage systems (Figure 2.5). All these changes make it more difficult to provide a precise evaluation of the ancient land-use. These have forever changed the local topography and need to be considered whenever landscape modelling or analysis is envisaged.

There are several species listed above that constitute additions to the local flora and fauna of medieval or modern date. Evidence of ancient fauna has been revealed in a few studies of bone remains from archaeological sites of prehistoric and Roman date (e.g. El Susi 1996, Gudea and Gudea 1999 and 2000). Unfortunately, none of the Roman evidence comes from purely rural contexts (relating to settlement around a military site at Porolissum and a major Roman town at Alba Iulia-Partos). Domesticated animals like cattle, horses, mules, sheep, pigs, goats are present in artistic representations on Trajan's Column in Rome or the *Tropaeum Traiani* from Adamclisi (Macrea 1969, 297, Lepper and Frere, 1988). Other scenes on the latter and on other Roman monuments attest that oxen and horses were used for traction (Macrea 1969, 297, MacKendrick 1975, 99 and plate 4.26) and words for animals (domesticated and wild) or connected with animal husbandry have been transmitted to modern Romanian (such as *manz*- foal, colt; *viezure*-badger, *branza*-cheese, *zer*-whey) from Dacian, while most of the names of traditional domesticated animals are of Latin origin. Lambs and piglets were available on the Dacian market as proved by a "shopping list" inscribed on the *pagina posterior* of a wax tablet (IDR 1, no. 46 = TabCerD XVI = CIL III 933, XV) discovered in 1855 inside the Sf. Ecaterina mine at *Alburnus Maior* (Rosia Montana). It is more difficult, however, with representation of wild animals. A boar and a stag are represented in scene CXLIX of Trajan's Column (Lepper and Frere 1988, 181 and plate CIX) and it appears that the wolf was quite an important martial symbol among the Dacian warrior elite (Vekony 2000, 84). Dacian art reveals only a few clues on local fauna (dog/wolf bull, snake, feline, horse) as the ornamental motifs on painted ceramics are too stylised and the animals are, without exception, fantastic representations (Florea 1998, 206-32). The representation of a bull/ox (Romanian 'bour') on the 'parade shield' from Piatra Rosie in Orastie Mountains is, however interpreted as an expression of local artistic taste, though the

presence of feline and vegetal motifs is interpreted as an indication of the Mediterranean origin of the artist (Glodariu *et al.*1996, 196-8). Birds seem to be less represented in artistic scenes, though on Dacian painted ceramics from the Orastie Mountains birds are the more easily identified as those species living near water or predators (Florea 1998, 230).

A study conducted in the early 1970's (Nandris1981) on plant evidence from Dacian sites (citadels) located within and outside the study area revealed the presence of some 45 varieties of cultivated plants of plants. A more recent study on Dacian settlement in the mid-Mures valley by Gheorghiu (2001) lists plant evidence for wheat (*Triticum vulgare, Triticum compactum, Triticum aestivum, Triticum dicoccum, Triticum monococcum*), rye (*Secale cereale*), millet (*Panicum* sp.), *Galium tricorne* and *spurium*, *Lolium sp.*, *orz*-barley (*Hordeum vulgare*), *Ornithogalum pyramidale*, lentils (*Lens culinare*), mustard (*Sinapis alba, arvensis* and *dinecta*), rape seeds (*Brassica*), poppy (*Papaverum somniferum*), garlic (*Allium sativum*), *Chenopodium album*, *Setaria viridis*, *Setaria Italica*, *Polygonum persicaria*, *convolvulus* and *aviculare*, *Rumex acetosa*, *Vicia hirsuta*, *Agrostemma githago* for human and animal consumption (Gheorghiu 2001, 165-6). Nandris (1981) concludes that a diet high in cereals, especially wheat varieties, was preferred, while virtually the only legume present was *Vicia faba* (pea). There is little evidence for fruits, as only traces of *Pyrus malus* were discovered within the samples, though vine cultivation is attested from other sources (literary evidence in the Late Iron Age - Burebista's ban on vine cultivation for the moral improvement of Dacian male society- Strabo, *Geog. VII 3 5 ;VII 3 11*). *Camelina sativa* (gold-of-pleasure) found in samples from *Sarmizegetusa Regia* was apparently used for lighting (Nandris 1981, 234-5). Unfortunately, both Nandris (1981) and Gheorghiu (2001) failed to consider similar evidence from other types of Dacian settlements in order to check whether their evidence represented the general character of the diet of Dacian society, or only the upper social segment that was the normal occupant of this type of site. The presence of cereal cultivation is evident also from other archaeological evidence, such as millstones. Storage pits and other features of the similar type were a frequent feature of prehistoric settlement in the area and will be considered in chapter 4. Some names of plants and animals or animal products of Dacian origin have been transmitted into modern Romanian (such as *mazare*-peas or *varza*-cabbage). The wax tablet 'shopping list' mentioned above includes onion and salad along with white bread, vinegar and salt. Pedanios Dioskorides in his list of plants used for their curative properties gives several Dacian names for plants, such as elderberry, blackberry, camomile, valerian, thyme and others (Vekony 2000, 80-3 and brief mention in Nandris 1981, 234-5). Other evidence also supports the presence and use of certain (though unknown) varieties of mushrooms, as proved by the episode of the Dacian ambassador sent to Rome with a letter written on a mushroom (scene VII on Trajan's Column –see Lepper and Frere 1988, 59 and Plate X, which identifies the type as potentially a variety of *polyphorus* or *bolettus*). Trees and wood use are frequently represented in scenes on Trajan's Column, along with representations of cereal fields harvested by the army during the second Dacian war (MacKendrick 1975, 88-9 and plate 4.15). A closer interpretation of the exact species is difficult, given the failure of the artist to represent details exactly and the concern for aesthetics rather than accuracy.

In my attempt to reconstruct the late Iron age and Roman landscape of the mid-Mures valley and Tara Hategului, only the archaeological evidence from sites in this area can be considered as direct evidence. Other sources, linguistic, artistic and literary, are to be seen more as indirect proof. For example, in terms of artistic evidence, it is generally recognised that the presence of some ornamental motifs can always be influenced by the origin of the artist, by fashion, or the express preference of the client, and so the frequent occurrence of the funerary lion alone would not constitute proof of their physical presence in Western Transylvania. The artist of Trajan's Column had most probably never visited Transylvania and his depiction would be based on written and possible oral accounts of the direct participants (Lepper and Frere, 1988, 114). Similarly, the fact that some relevant Romanian words have a Dacian origin does not necessarily constitute proof of the presence of those items in the ancient geographical landscape of the study area. It does, however, increase the probability, especially if the species attested are found in the modern landscape.

It is even more difficult in some respects to attempt a reconstruction of land-use in the late Iron Age and Roman period. The traditional view takes little if any account of landscape changes over time and seems to assume that conditions were more or less similar to modern ones (Gheorghiu 2001), with some acknowledgement of the changes imposed by development in the Industrial Era. The river valleys and the lower terraces are assumed to have been intensely cultivated in the past, as today, and the extension of arable in places up to 1.400m would seem to prove a highland economic exploitation which can indeed be traced back as early as the middle age. However, the exact extent of cultivated land it is not known and further studies should clarify this issue. Of some relevance for this issue is the information that the greatest proportion of the land has a soil structure that demonstrates massive forest coverage at some point in time (see above). The view seems to be supported also by the frequent presence of trees (oak, conifers, poplars) on Trajan's Column (Lepper and Frere 1988). The timber would have been extensively exploited even in Dacian and Roman times as demonstrated by the large numbers of tools, civilian and military construction techniques, scenes on Trajan's Column and epigraphic evidence of *collegia* for woodworkers. Despite this, it is reasonable to allow enough arable land to place Dacia amongst the cereal-producing provinces of the Roman Empire. Cultivated fields would have been widespread in the study area since soil and climate data (see above), as well as historic tradition, indicate that it was amongst the most fertile of Transylvania. Given the importance of animal husbandry attested through other sources (see above) we also have to assume a great extent of pasture. Straw, or perhaps hay stacks represented on the Trajan's Column (Lepper and Frere, 1988, 65) are no different from the ones frequently seen in the modern landscape. Inscriptions mentioning *conductores pascui* (or *pascui et salinarum*) attest their presence in Roman Dacia and also their importance (Macrea 1969, 298; CIL III 1363, 1209).

But no matter how fertile the land, it was the subsoil resources of Transylvania which were by far the most desired by her Roman conquerors. These consisted mostly of rich metal ores, but also included salt and stone which have been exploited from prehistory through to modern times. Iron metallurgy spread under the influence of the Celts and reached high levels of technology and production in the classic phase of evolution of the Dacian civilisation (Iaroslavschi 1997). The most important mineral resources of all were the rich sources of gold located in the Metaliferi Mountains. Associated with

the gold ores were silver and lead. Information on mining concerns mostly Roman exploitation. However, the Dacians were exploiting the gold and silver and had accumulated large quantities, as the Romans had transported to Rome some 165,500 kilograms of gold and more than twice this quantity in silver after the Dacian wars (Glodariu *et al.* 1996, 192). The episode is also depicted on Trajan's Column. Archaeological remains noted few Dacian gold artefacts other than the golden coins *κοϛων* and it seems that silver was preferred for jewellery (Glodariu *et al.* 1996, 192). Given the geological structure that allows variation of the concentration of metal within the native stone, exploitation utilised various methods, ranging from washing gold particles from alluvium and surface mining to gallery exploitation (Wollmann 1996, 103). Calculations of productivity revealed figures of some 1.3 tons of gold extracted in 165 years of Roman occupation (Wollmann 1996, 126). The main areas of ancient exploitation were identified around Baita on the upper valley of Crisul Alb the Ruda-Brad area, Bucium-Corabia (north of *Ampelum*-Zlatna), *Alburnus Maior*-Rosia Montana, Baia de Aries area. Another gold exploitation area was located at Pianu de Sus extracting the metal content of alluvium coming from the Sureanu Mountains. Copper was exploited west of Deva (Wollmann 1996, 149 and plate LXXXIII).

The main centre of iron exploitation in Roman times, which has continued in the modern era, was located in the Poiana Rusca Mountains (Wollmann 1996, 232-4) around Hunedoara (Teliucu Inferior, Ghelari, Plotca, Hunedoara). However, there are iron resources located in the Sureanu Mountains for some of which there is proof of Dacian exploitation, such as at Batrana from which ores have been discovered near reduction kilns at Sarmizegetusa Regia. Other iron sources are located at Dealul Negru, Steaua Mare, between Valea Mlacii and Valea Provatului, on the hills to the northwest and south-west of the Strei, Rudele, Federi, between Sipca stream and Bosorod valley and at Dosul Vartoapelor- Sub Cununi (Gheorghiu 2001 3-4 and 183-6).

The most important salt exploitation on the Mid-Mures valley is located at *Salinae*-Ocna Mures, though another possible example could be located near Deva. Even lacking explicit evidence of exploitation, the identification of salt deposits in conjunction with the presence epigraphically attested at Micia of a *conductor salinarum* (CIL III 1363 = IDR III/3 119) is suggestive. Other important ancient salt exploitations are located immediately outside the study area at *Potaissa*-Turda and Ocna Sibiului (Wollmann 1996, 240-9).

The varied geology of the area offered sources of both volcanic and sedimentary stone quarried in late antiquity. The volcanic rock was mainly andesite of 'Uroiu type' available in 2 colours, which could be found at *Petris*-Uroiu and in several quarries in the area around Deva (Wollmann 1996, 257; Hanson and Oltean 2000). This was used for architectural purposes and millstones. Amongst the sedimentary-detritic rocks we find quartzitic sandstone (outside *Ampelum*-Zlatna), calcareous sandstone and Tortonian sandstone (Sard), carbonatic sandstone (in area Deva-Micia), metamorphous limestone (at Bucova which was the main marble source of Transylvania until 1884), Tortonian limestone (Ighiu, Apoldul de Sus, Miercurea Sibiului) and Eolithic limestone (near Sarmizegetusa Ulpia) (Wollmann 1996, 259-67). The hills near Magura Calanului, Santamaria de Piatra and Deva - Padurea Bejan have been quarried since Dacian times for limestone and andesite

respectively, that were used by the Dacians (especially the limestone from Magura Calanului) for building the hill forts and other constructions in the Sarmizegetusa Regia area, and Capalna (Glodariu *et al.* 1996, 220-2).

Summarising, this chapter demonstrates that the arable land, the metal (especially gold) and other natural resources (water, forests, stone, salt), and the geographical/topographical setting favourable for both communication and defence were further enhanced by one of the nicest climatic regimes in the area. Thus, the natural conditions within the study area presented all the advantages of setting, climate and resources needed to attract human activity/settlement and to become the core territory of the Dacian kingdom and of the later Roman province.

Figure 2.1. Map of the main topographical units and the location of modern settlements mentioned

N

1:800000

Aries
Mures
Ocna Mures
Trascau
Tarnava
Transylvanian Tableland
Apuseni Mountains
Ampoi
Alba Iulia
Zarand
Metaliferi
Mures
Zam
Deva
Geoagiu
Cugir
Sebes
Sirei
Orastie
Hunedoara
Sureanu
Poiana Rusca Mountains
Cerna
Hateg
Orastiei
Parang Mountains
Transylvanian Iron Gates
Retezat Mountains

Legend

Survey area

Rivers

Figure 2.2: River meanders on Mures and Strei valleys: the Mures-Strei confluence near Simeria (above) and near Calan (below)

Figure 2.3: Aerial photograph of areas covered by industrial refuse at Hunedoara (above) and near Deva (below) (IO)

Figure 2.4: Water reservoirs in Tara Hategului (WSH)

Figure 2.5: Extensive modern drainage system in Tara Hategului east of Sarmizegetusa

Chapter 3: The historical background

Having established the geographical definition of my study area, this chapter will set the historical boundaries underlying the time period covered and will sketch the historical conditions which led to the Roman conquest and the organisation of the province of Dacia. The western half of the Transylvanian plateau has been recognised as the core of the territory occupied by the Romans in AD 106. (Figure1.9). Despite its long-lasting occupation since the late Palaeolithic, it is only in later prehistoric times that this territory and its population came to the attention of the ancient classical world.

1. The late Iron Age:

1.2. The Dacian and Getic populations in Roman history:

Before reaching Latin writers attention, the Barbarians from the North side of the Danube and from Dobrogea were first mentioned in ancient Greek classical texts. Strabo I, 2, 1 declares that "[Alexander the Great] has brought to our knowledge [...] towards the North of Europe, all the area until the Istros; the Romans have made known [...] the places beyond the Istros as far as the river Tyras". This fact is unsurprising since the Greek cities established colonies on the Black Sea coast of Dobrogea from the 6th century BC that quickly became involved in the economic system of Magna Graecia. Therefore, Dacia came to the attention of the ancient world much more and at a much earlier date than, for instance, Britain. The collection of classical texts with reference to the antiquity of Romania by Iliescu *et al.* (1964) includes significant references from Greek and Latin authors, though many more have been omitted (Dana and Ruscu 2000, 223).

The interest of both Greek and Roman writers in the native populations from the territories to the North of the Danube and the Dobrogea range from political events and figures covered in histories, to literary and scientific matters (e.g. geographical, ethnographic, anthropological). The earliest mentions are brief: Hecataeus (*Europa,* FR 170-172) mentions the tribes of the Crobydae and the Trixae and Sophocles (*Triptolem,* FR 547) in one of his tragedies mentions a local king, Charnabon. However, a more comprehensive description was made by Herodotus (IV, 93-96; V, 3-10) in the context of their unsuccessful opposition to the incursion to the North of Black Sea of the Persian king, Darius. The information provided by Herodotus describes the natives in the immediate vicinity of the Greek colonies along the Black Sea coast.

It is not unusual for Greek or, indeed, Latin writers to refer in the first instance to the natives from the zone of immediate contact just beyond the colonies, city walls or hinterland boundaries, as an obvious focus of specific interest and of available information. This is a serious bias that has been addressed by modern interpreters of ancient texts and which substantially affects the objectivity of

such sources in assessing Barbarian societies outside the geographical limits of the classical world. This could perhaps explain the obvious bias of information in geographical coverage of the area inhabited by the Dacians as opposed to that of the Getae, who inhabited the south-eastern territories and the outer-Carpathian regions, and were, therefore, located closer to the Greek colonies on the Black Sea and the line of the Danube. Over time the coverage of historical accounts extends gradually towards the Dacian area, the intra-Carpathian region and the north-west. A further bias in the quality of information is also detectable. While some authors such as Herodotus, Ovid, Crito, Balbus and others had travelled top the area and collected their information locally, others used exclusively second-hand information mainly from the works of other authors. The latter is still valuable because it gives us a chance to recover part of the information usually lost in the original source, but possible alterations must be taken into account. Even the information from those authors who travelled in the region is sometimes only second-hand. Herodotus admits, for example, that the information about the Getae in his work has been collected from Greek inhabitants of the colonies on the Black Sea (IV, 93-96; V, 3-10). Finally, a bias of interpretation in the ancient literature is that these accounts were produced exclusively by authors other than the Dacians or the Getae themselves. Therefore, they reflect only an interpretation of the 'barbarians', their life style, habits, religion and so on, through the eyes of the Greeks or Romans, and most of the time based on external manifestations, while the reality could in fact be extremely different.

With the exception of the account of Quintus Curtius dated to 339 BC of a *rex Histrianorum* repelling an invasion of their country by the Scythian leader Ateas, and consequent authority of Macedonia's king Philip II over North Dobrogea (Condurachi and Daicoviciu 1971, 96), the first appearance of the native population of Dacia in Roman historical accounts is related to the political, diplomatic, legal and ideological context of the late Republic. The expansion of Roman political and military interest in the Balkans during the 2nd century BC included contacts with the Southern Thracians soon after the organisation of Macedonia as a Roman province, and gradually extended to the north, to the banks of the Danube and beyond. The governors of Macedonia had to deal with the "plundering expeditions of the neighbouring peoples" including Getic and Dacian tribes (Lica, 2000, 38-42). However, specific mention of the Dacians among Balkan populations in their confrontation with Rome appear later when Minucius Rufus claims victory against the Scordisci and the Dacians in 109 BC (Frontinus, *Strat.* 2. 4. 3), or later on in the 1st century BC, especially the campaigns under C. Scribonius Curio (76/75-73/72 BC) and M. Terentius Varo Lucullus (73/72-71 BC) (Florus, *Epit.* 1 , 39. 6; Eutropius, 6. 2. 2; Rufius Festus, *Brev.* 7; Eusebius-Hieronymus, 152 -23 *Helm*), or the action of C. Antonius Hybrida in 52-61 BC (Livy *Per.* 103; Cassius Dio 38. 0. 1-3). Each of them tried to secure the area outside their province (i.e. Macedonia) by eliminating random attacks on Roman territory or, during the Mithridatic wars, the potential source of mercenary recruitment for their adversaries. The military defeats were meant to place negotiations with the Thracians on favourable ground in order to transform the local dynasts into partners of Roman foreign policy through treaties under the legal system of *socii,* both personal and of the Roman people (Lica 2000, 42-60).

The interest in the presence of the native tribes on the Lower Danube reaches a significant point when Burebista brought all the Barbarian tribes over a huge territory between the middle Danube

(Slovakia), Northern Carpathians, Bug River (Ukraine), Black Sea and the Balkan Mountains under his authority. The chronology is still under debate (see discussion in Lica 2000, 65-7), though we can locate it with certainty in the middle of the 1st century BC when Rome was dealing with the power of Caesar and the Civil Wars. The main sources of information are Strabo, (V 1 6 ; VII 3 11-13) and Dio Chrysostom (taken up by Cassiodorus and Jordanes) backed up by the inscription containing the decree in honour of Akornion of Dionysopolis (Syll.II 762 = IGB I^2 13). These, along with other indirect mentions in Caesar, Pompeius Trogus (*Prol.* 33) Appian (*Rom.Hist. Iliria* 13 36), Cassius Dio (*Rom.Hist.* LI 22 6) and various inscriptions from the Greek cities of the Black Sea, show that Burebista was perceived as a powerful dynast at the borders of the empire, important enough to play a role not just within the boundaries of his kingdom but also in the political games of Rome (as for example a last-hour ally of Pompey before the battle of Pharsalus and a planned target for reprisals by Caesar - see Lica 2000, 71-92).

The power of the Getic state in the region did not last though. After the death of Burebista (possibly as a result of a political plot against him), his dominion broke into 4, and later into 5 parts under different rulers (*reguli*) (Strabo VII, 3 11). Later on the Dacians and the Getae appear constantly in classical written accounts of Vergil (*Georg.* II 495-7), Horace (*Satires, II 6 51-3; Odes* III 18, 8 and *Scol.Pseudo-Acro*, III, 8, 17-24), in *Script. Lat Minorae* (*Consolatio ad Liviam* 387-8), Seneca (*Nat.Hist.* 9), Lucan (*Phar.* II 52-4) Pliny the Elder (*Nat.Hist.* IV 12 80), Flavius Josephus (*Bel.Iud.* VII 4 3), Frontinus (*Strat.* IV I 10 4; IV II 4 3) Martial (*Epig.* V 3 1-6; VI 76 5-6), Plutarch (*Caes.* 58; *Ant.* 63), Tacitus (*Agricola,* 41 1; *Germ.* 1 1; *Hist.* III, 46 2 and IV, 54 1), Suetonius (*Vita Caes. Aug.* XXI, 2; *Tib.* XLI 1; *Dom.* VI 1), Florus (*Epit. Bel. Dac.* II, 28, 18), Appian *(Rom. Hist. Iliria* 13, 36), Lucian (*Icaromenip* 16) and Philostratus, (VII 3 1). They show that the Dacians and the Getic populations were a fairly frequent presence in the political and strategic issues of Rome. This is not unexpected, however, within the context of the political struggle for power in the late Republic, or of the expansion of Rome's power to the north of Balkan Mountains and organisation of the Danubian border of the Empire both in military and diplomatic contexts. The Dacians and the Getae are shown as an active part of the events, supporting their own political candidates, involved in local fights with the neighbouring barbarians and frequently attacking the borders of the Empire.

1.2. Ethnicity, tribes and boundaries:

Bennett (1997, 85), echoing others, considers the Dacian and Getic people to have a strong sense of national identity in the barbarian world. It is less clear though what exactly this notion would have covered in those times as modern issues of national identity cannot be applied in the specific context of antiquity. First of all, there is a recurrent inconsistency in the literary sources regarding their ethnic name. Most Romanian commentators agree that the Greek sources use the name 'Getae' while the Latin ones seem to prefer the name 'Dacians' (Stefan 1964, XIII). However, some Latin authors used the name Getae too, and some of them even made a distinction between the two (Pliny the Elder, IV 12 80; Lucanus, *Phar.* II 52-4). Therefore, it is safer to accept the location-related explanation provided by Strabo (*Geog. VII* 3 12-13): "They used to call Danubius the upper part of

the river and the one between the springs (source) until the cataracts. These regions were in the main part under the power of the Dacians. The lower part, until the Pontus (i.e. Black Sea) – along which the Getae live – they call it Istros." Further on, he continues: "There has been a different division of the territory, dating since the earliest times: because ones are being called [by authors] Dacians, and the others Getae. The Getae are those spread towards the Pontus and East, and the Dacians [are] those who settle the opposite area, towards Germany and the Istros springs/source." The ethnic confusion is resolved by Strabo and Pliny the Elder's statements that the both spoke the same language (Strabo, *Geog. VII 3 13*; Pliny the Elder, *Nat. Hist.* IV 12 80). Since the very first detailed account by Herodotus, they are acknowledged as belonging to the Thracian tribes (Herodotus IV 93, V 3-4, V 6; Strabo VII 3 2), but still distinct by particularities of customs and religion. Their language would have been very similar to those spoken by the other Thracians and belonged to the 'satem' group of the Indo-European languages. Differences between the Dacians and the Getae, and the Southern Thracians or, indeed, the Scythians are difficult to perceive, as several authors make confusions of identification with either one or the other. Physically, the Dacians and the Getae had similar characteristics to other Barbarians around them (Thracians, Celts, Scythians). They are described as tall, their skin whiter and with less hair than the populations to the south (from the Mediterranean area) with straight, light (red?) hair and blue eyes (Aristotle, *Animal. Gen.* V 3; Galen, *De Temp.* II 5-6; *Clement of Alexandria* VII, 4; Porphyrius 28).

The confusion is also increased by very different, sometimes contradictory descriptions provided by the ancient sources in direct relation to the author's own opinion or context of argument. Therefore, some authors describe a paradise of wisdom, simplicity of life, social organisation and customs (i.e. Flavius Josephus XVIII 15; Strabo VII 3 3-5), while others note illiteracy, spiritual poverty (before the religious reformations brought by Zamolxis), violence and excesses (of behaviour, mentality or even environment) (i.e. Herodotus IV 95-96; Claudius Aelianus, *V, III, 6*;Origenes, I, 16; Seneca, *De Provid.* IV 14; Florus *Epit. Bellum Dacicum* II 28 18; Pliny the Younger *Paneg,* 12 2). From the beginning, the written sources picture a patriarchal society with differentiated social categories, where warfare seems to be placed in higher regard than peaceful ways of living. The most relevant difference defining the northern Thracian tribes from the southern ones seems to be related to their warlike lifestyle, as being much greater than the rest of the Thracians (Herodotus, IV, 93) to the extent of it being chosen by Lucian of Samosata as their most defining feature (Lucian, *Icaromenip.* 16). This should not necessarily lead to a perception of excessive savageness or cruelty, characteristics which seem to have stood out more in the case of other Thracians or ethnic groups in the area than for the Dacians and Getae (as for example the Scordisci – Florus, *Bellum. Thracicum* I, 39 3). The other most preferred characteristic feature is their religion along with the mentality created by it, which would have had a great impact on their robotic portrait, and also largely nourished their high motivation in battle. Indeed, the significant difference of mentality towards life and death (noted by several authors to be characteristic of the Getae and Dacians, but also of other Thracian tribes), facing birth events with sadness and death with great joy, indicates a greater emphasis on after-life, accepted as the immortal condition promised to the initiated by their greatest deified prophet, Zamolxis (or Zalmoxis) (Herodotus IV, 95-96; Strabo, VII, 3, 5).

An extensive reference to the native tribes and places in Dacia can be found in the 9th *tabula* of Europe of Ptolemy's *Geographia* (III, 8 1-4), along with a short description of their geographical location, where there is a list of 15 tribes and a further list of *civitates*. According to Ptolemy, the northernmost tribes starting from the West were the *Anarti*, the *Teurisci* and the *Coertoboci* (Costoboci). To the south of them were the *Predasense* (Predavensi), the *Rhatacense* and the *Caucoense* (*Cauci*). South of them were located the *Biephi*, the *Buredeense* (*Buri*), the *Cotense (Cotinii)* and in a next row the *Albocense*, the *Potulatense* and the *Sense*, while the southernmost were the *Saldense*, the *Ciaginsi* and the *Piephigi*. This is the most comprehensive account regarding tribal divisions in Dacia, though there are previous brief mentions of tribes and tribal leaders on the left and right banks of the Danube, or even in Transylvania, to be added to the list, as for example, the *Trixae*, *Crobydae*, (Hecat. *Europe*, FR 170-172), *Appuli* (*Script. Lat Minorae* in *Consolatio ad Liviam* 387-8). Unfortunately, the territory occupied by these tribes is highly approximated on Ptolemy's map, which gives little chance of precise locations of their territories and boundaries. The same applies to the names themselves, most of them are derived from place names that can also be found in his account (III, 8 4). *Appuli* might have settled the area around the Dacian Apoulon (probably at Piatra Craivii near Roman Apulum –modern Alba Iulia) and constitute the only tribe that can be located with certainty within the study area on the mid-Mures valley. The ancient authors often mistake and create confusion over the ethnic identification and geographical location of the barbarians north of the Danube, though this seems to be a common situation for barbarians in general when they appear in classical texts. In the case of Dacia, the tribal names given in Ptolemy's list include mostly names similar to those from the list of *civitates* and very few others. This might indicate the existence of mostly territorial tribes at that date with only a few survivals of traditional tribes in the period around the date of the Roman conquest. However, in underlining the temporal and structural flexibility of the tribal divisions Wells (2001, 31-2) observes that "the archaeological evidence from Late Iron Age Europe shows that the peoples were not clearly delineated into specific groups that might correspond to the tribes named by the Roman and Greek writers. Rather than being long-term social or political entities that had developed during late prehistoric times, these tribes probably represented divisions between groups that had formed in response to the Roman incursions. Thus what the Roman writers perceived as fixed, historically developed entities were in fact short-term creations generated by the Romans themselves".

The issue of the extent of Dacian territory is difficult to evaluate based on written accounts, as often they are too brief or lack the necessary depth of information and analysis to constitute a precise account. However, the information they supply can be approached from two very different points of view. Burebista acquired power over a huge territory in the area to the north of the Balkan Mountains extending from Slovakia to the Dnestr River, including the Greek towns on the western coast of the Black Sea from Olbia to Apollonia. However, it would be wrong to assume that all this territory, or even the whole list of tribes from Ptolemy's account of Dacia, would have contained exclusively the Dacians and the Getae. The ancient sources are quite specific about the fact that Burebista, after ensuring his authority within the Getic territory, went on to defeat the Celtic tribes living in the area to the west of the Carpathians and in the Pannonian Plains. Archaeology has revealed that the Celtic

tribes had originally spread east as far as Transylvania before being assimilated by the Dacians, and the list of tribes given by Ptolemy mentions also Celtic tribes such as the Teuriscii (Teuriskoi) or the Anarti (Anatoi). In the east, the Getic tribes were mixed mainly with the Bastarnae Sarmathians. Finally, the regions between Danube and Balkan Mountains were inhabited by the Southern Thracian tribes. Apart from the Romans who established their boundary on the Danube (ended by the conquest of Dobrogea by M Licinius Crassus in AD 28), a later addition to this picture are the Iazigae Sarmatians who were granted permission by Rome to settle the Tisa plain, also during the reign of Tiberius, around AD 20 with the role of a buffer between the Dacians and the Pannonian populations (Tacitus, *Hist.* 3. 46. 3). A more realistic estimation is that the Dacians settled the left bank of the Middle Danube valley in the Tisa Plains (until the arrival of the Iazyges) and Transylvania, while the Getae lived on both sides of the Lower Danube and the south and east sides of the Carpathians.

1.3. Rulers and the nature of their 'states':

As shown above, from the very beginning mention of political leaders in classical texts appears restricted to the southern areas in the immediate vicinity of the Greek towns on the Black sea coast and the Danube. All the accounts prior to the first century BC show that these power centres of the natives on the Danube were mainly tribal centres on local scale. However, the rise of Burebista's power brought into consideration the concept of power at a different scale in the region. First of all, he succeeded in extending his authority over a huge territory (see above). But unlike his predecessors, the Getic leader is presented by the sources as having a different status than the kings previously mentioned, brought about by the more careful control over the territory and its subjects, but especially by religious recognition ensured by association with Dekaineos, the great priest, as the second man in power (Strabo VII, 3, 5; VII, 3, 11). Certain formulations in an epigraphic decree (Syll.II 762 = IGB I^2 13) dated to 48 BC in honour of Akornion of Dionysopolis, who was sent as ambassador of Burebista to Pompey, claim the title of 'king of kings' for Burebista and the king's 'first and greatest friend' for Akornion, both in use within the Hellenistic kingdoms of the Balkans and Near East. This led to attempts to argue for the appearance of institutional organisations in his time and an administrative framework specific to the Hellenistic kingdoms (see discussion in Lica 2000, 82, footnote 96), when this should be regarded only as an *interpretatio graeca* by Akornion. Nevertheless, the political power of Burebista is undeniable and on a far greater scale than that of any other leader before. It is apparent from the way he dealt with the Greek towns from the western Pontic area and in his relationship with Rome during the conflict between Caesar and Pompey, as a last-minute ally of the latter (Ruscu 2002, 295-307; Lica 2000, 62-92). Ruscu (2002, 295-307) denies Burebista a clear political program in his actions against the Greek towns and states that the real political basis was the military force under his command which made any Greek resistance inadequate. This lends weight to the interpretation of the political and territorial unit under his authority as no more than a very large tribal union, with a more advanced basis of the leader's political power. The chronology of his reign in relation to the dating of political events described by Strabo is considered by most historians to be between the early '80s and late '40s BC, though this

subject is currently under debate (see Lica 2000, 65-73). It seems he also had a capital at (Z)argedava, but its location is not precisely confirmed. It is thought to have been in the Siret valley (Barbosi?), though the beginnings of hillfort monumentality in the Orastie Mountains area seems to be dated at that time too. There is more certainty in locating the religious focus, the holy mountain Kogaionon, in the Orastie Mountains.

Long before Burebista, Herodotus (V, 3) points out the lack of unity amongst the Thracians and the impossibility for them to come together under a unique ruler or confederation, though in his view, had they been united, this would make them the most powerful nation in the known world. What change of social mentality made it possible for the Getae and the Dacians to unify the Thracian tribes over all this huge territory under a single power? According to Strabo (*Geog.* VII 3 5 ;VII 3 11) the high priest, Dekaineos, was also the main counsellor of the king. As a spiritual leader, he reformed the religion through a more 'institutionalised' facade concentrated around Kogaionon, stress on temperance in life, obedience and austerity (e.g. measures for the eradication of vine cultivation, vegetarianism) in pursuit of that immortality after death promised by Zamolxis. His main political task, however, was to make the people obedient to the newly centralised political authority. The provision of conflicts against any opponents, whether neighbouring barbarians or Greek colonists, along with the material benefit resulting from associated pillage, or stipends regulated through treaties, even if Burebista did not always keep to them, would also have kept the other tribal leaders and their armies around him. However, the failure to implement the idea of unity in the political mentality of the multi-ethnic society led to the death of Burebista and division of the territory between his heirs (Strabo VII 3 11).

Names of such minor kings (*reguli*) occur in the literary sources from the end of the 1st century BC, and through the Julio-Claudian and the Flavian periods when the Dacians and the Getae were constantly being mentioned. The ancient sources mention several Dacian dynasts (between 44 and 31 BC – see Lica 2000, 100): Koson (?), Cotiso and Dicomes. The first name is problematic, since the only indication of his existence is the mysterious KOSON gold coins that have been found in large quantities in Transylvania and attributed, according to some numismatists, to the monetary issues of Brutus. Others prefer to identify the character with king Cotiso. We are informed of Cotiso by Horace (*Carm.* 3. 8. 17-I8), Florus *(*2. 28. 18-19*)* and Suetonius *(Aug.* 21.1 - for AD 12). However, it seems more likely that he was another dynast of a later date than Koson. Koson had relations with Brutus, offering him troops who would have been paid with the staters bearing his name (ΚΟΣΟΝ) (Lica 2000 104-5). Also, according to Plutarch, (*Ant.* 63. 3-4), a Dicomes the king of the Getae promised Antonius to come to his aid with a large force, thus confirming his *floruit* around 31 BC. As for Rholes, Dapyx and Zyraxes, these dynasts are mentioned by Cassius Dio and they all seem to fit into the period 31-27 B. C. (Lica 2000, 93-120)

The important fact, however, for the present study, as well as for the general historical development of the late iron age, was that the Dacian state of Transylvania continued in existence with its centre in the Orastie mountains. Dekaineos, the high priest and No.2 of Burebista's dominion, is the one who takes over power after the death of the king, possibly resulting from a political plot organised by his

opponents (Condurachi and Daicoviciu 1971, 99). Iordanes writes, referring to Dio Chrysostomos, that Comosicus was the first to perform the roles of high priest and king simultaneously, which means that Dekaineos probably kept his title of high priest and did not adopt that of king despite the later extension of his authority into the political arena. Probably his authority extended to only a small area, perhaps not larger than the seat of government and the religious core in the mountains of Orastie, and most likely the ore-mining areas. Later, and perhaps following the kings Koson and Cotiso, Comosicus probably began his reign during the campaign of M. Vinicius and ruled until 29 A.D. (Lica 2000, 128). The idea of the Dacian Kingdom preserved within the Orastie Mountains is implied by the survival of a dynastic list, though possible incomplete: Koson(?), Cotiso, Comosicus, Scorylo (or Coryllus, as Jordanes calls him in his Getica) (A.D 29-69?), Duras and Diurpaneus-Decebalus (Lica 2000, 188). The 4 or 5 political entities resulting from the dissolution of Burebista's 'empire' continued to be separate entities of no more than local significance probably up to Scorylo's time. Unfortunately, the existent data is insufficient to know whether or not the religious connotations of political power were maintained personally by the other kings in this list, apart from Dekaineos and Comosicus. However, the pre-emptive position of the leaders of the Orastie kingdom that would have been nourished largely by religion is confirmed by the fact that it is one of these leaders who probably undertook the re-unification of the territories still unoccupied by the Romans or by the Iazyges.

Diurpaneus-Decebalus appears as the king of the whole of Dacia. The information about his reign is largely focused on the wars against the Romans and appears in Tacitus (who mentions Diurpaneus), Jordanes and Cassius Dio, though Martial, Crito, and others offer some information. The sources are not explicit about the territorial extent of his kingdom, but on the basis of archaeological evidence (hillfort distribution) it is currently assumed that the territory under his authority roughly corresponded with the area of modern Romania, with the exception of Dobrogea which was already a part of Lower Moesia. The position of political no.2 in this regime was occupied by Vezinas, a reminder of the political duo Burebista-Dekaineos, though in the case of Vezinas we do not know whether he was also the high priest (Cassius Dio, LXVII 10 2). However, in comparison to Burebista's *dominion*, that of Decebalus appears to be better organised, centralised and more ethnically homogeneous. A clear distinction was introduced between the warrior elite on the one hand and the administration and the economic elite on the other (Crito, *Get.*5. (2*) Suidas*). The royal council included *pileati* and *comati* altogether (as probably that of Scorylo) (Frontinus Strat. I, 10 4). Also, the possible break up of the traditional tribe as an administrative unit, and promotion of the territorial units from Ptolemy's list (see above) could have happened within the latest phase of the Dacian kingdom, during the reign of Decebalus.

1.4. Relations with Rome:

The nature of the relationship of the Daco-Getae with Rome is another topic where the literary sources present an incomplete image of reality. Despite the fact that the sources of information exclusively present the Roman point of view, Romanian traditional historiography has tried to

analyse the relationship from a Dacian-focused perspective. The failure to consider the Roman juridical framework with which these relations had to comply has resulted in great distortion of their interpretations. This point has been made also by Lica (2000) who made the most recent attempt to evaluate the political and diplomatic aspects of the relationship from a Roman perspective.

Both the Dacians and the Getae were perceived as a threat by the Empire largely after they reached the line of the Danube through conquest, though a threat of no more than a local significance. Because of their frequent raiding expeditions into Roman territories, provincial or central leaders planned and undertook reprisals against them. Caesar is reported to have planned expeditions against the Parthians and the Dacians just before his death in 44BC, in the context of unification under Burebista and the latter's tendencies to enlarge his politico-diplomatic involvement into the larger scene (diplomatic action towards Pompey, see below). The period between Burebista's death and the accession of Decebalus was marked by much fighting between Dacians and Romans. Roman perception of the Dacians and the Getae as a constant danger to their possessions along the Lower Danube continued after the death of Burebista and the division of his *arche* between his heirs, for Antonius received the military command that he used to start his civil war actions pleading in front of the Senate for counter-action against a 'Getic danger', though this might have been significantly exaggerated for political purposes (Lica 2000, 97). Octavian was also planning on setting out against the Dacians in 35-33 BC (Strabo, 7. 5. 2, and Appian, *Illyr.* 22. 65; 23. 67). A few years later, Licinius Crassus, the governor of Moesia defeated Cotiso and in 27 BC he finalised the conquest of Dobrogea, adding it to Moesia (Cassius Dio, 51. 23-27; Livy, *Per.* 134; Florus, 2. 26. 13-16). In 10 BC a new Dacian winter attack on Pannonia is mentioned by Cassius Dio (54. 36. *2)*, followed by another one somewhere south of the Danube in AD 6 (Cassius Dio, 55. 30. 4), to which the Roman response was the expedition of Sex. Aelius Catus (Strabo, 7. 3. 10). It was followed by the removal of 50,000 Getae south of the Danube (Condurachi and Daicoviciu 1971, 99). A third attack followed towards the end of Octavian's reign (Orosius, 6. 22, possibly in AD 12). During Tiberius' reign a new Getic attack (AD 15) is mentioned in Ovid (*Ex ponto* 4 9. 76-80 under L. Pomponius Flaccus) followed by a Dacian attack during his last years (Suetonius *Tib.* 41.1). As a result, Tiberius Plautius Silvanus Aelianus, governor of Moesia between A. D. 57-67, removed more than 100,000 Transdanubians - together with their wives, children and kings - across the river in order to pay the tribute (CIL XIV 3608 = ILS 986). In the winter of the year A. D. 70, Tacitus (*Hist.* 4. 54. 1) notes troubles from the Barbarians, including Getae and Dacians. Finally, the last attacks on the lower Danube boundary took place during Domitian's reign and started with yet another winter attack in AD 86 involving a barbarian coalition, including Dacians along with Bastarnae, Roxolani and Iazyges. The governor C. Oppius Sabinus was killed and the forts along the Danube suffered significant damage, obliging Rome to organise a quick and powerful reply. Domitian established his headquarters at Naissus in Moesia and sent the *praefectus praetorio* Cornelius Fuscus on an expedition north of Danube against the Dacians under their new king, Decebalus. The action ended in disaster, as the Romans lost the battle and a whole legion (the *V Alaudae*) with all its equipment, and Fuscus himself died in the battle. The Dacians were eventually defeated in AD 88 by Tettius Iulianus (Cassius Dio LXVII 6.1-6; 7, 1-4; 10,1-3).

Often the Dacians and the Getae were diplomatic partners and played active parts in the political games of Rome, often as *amicii et socii*, possibly of Rome herself but usually of individual Roman leaders. For example, shortly before the battle of Pharsalus when Burebista probably became an *amicus et socius populi Romani*, confirmed by Pompey's Senate (Lica 2000, 98). At Actium, according to Cassius Dio (50. 6), Antonius had the Getae on his side under the authority of King Dikomes (*Plutarch, Ant.* 63. 3-4) while Octavian had the armies of Cotiso and his Dacians amongst his own supporters. Furthermore, Octavian planned the marriage of his daughter, Julia, to king Cotiso to strengthen their alliance (Suetonius *Aug.* LXIII, 4. VI. and *Ant.* 7), and most probably Cotiso would have held the status of *amicus et socius* of the Roman people or of Octavian personally (Lica 2000, 117). The status of Koson, Dicomes, Cotiso and maybe Rholes remains uncertain. It is not clear whether they were *amici et socii populi Romani,* or only enjoyed personal relations with Brutus, Antonius and Octavian respectively. "As for the legal basis of these relations, it is well known that Rome, at that time, used to impose the *deditio* on her partners in international relations, even if there had been no military conflicts. This is why, in her relations with the *Getorum et Dacorum gentes*, Rome acted similarly: they were unable to invoke the treatment due to an equal partner" (Lica 2000, 118). The peace that concluded the wars conducted by Domitian's generals against Decebalus (86 and AD 88) was signed only a year later by the Dacian king through his ambassador and brother, Diegis (Martial *Epigrammata* V. 3 1-6; Cassius Dio LXVII 7.1-4). Domitian' s treaty with Dacia provided significant financial and technical assistance.

How significant these treaties were, however, is expressed by Tacitus (*Hist.* 3. 46. 3): *Dacorum gens numquam fida* which indicates that they were never perceived by the Dacians and the Getae as more than momentary solutions and could be broken soon after circumstances changed. A particular and more involving aspect of the *deditio* was the handing of hostages to the Romans (usually members of kings families –women and children). This practice might have started as early as 71 BC with M. Terentius Varro Lucullus and continued later under Octavianus Augustus and throughout the 1st century AD. A possible exception to this practice may have occurred in the peace agreement from AD 89 when Domitian may have had to pay for hostages (Cassius Dio 67. 7. 4), but soon after in 102 and indeed in AD 106 Dacian hostages were sent to Rome again (Pliny the Younger, *Panegyr.* 12. 2; also, see discussion in Lica 2000, 253-6).

In turn, the presence in Dacia of individuals from the Roman Empire as merchants, craftsmen and runaways (slaves or not) has been accepted and mentioned by literary sources. Significant amounts of Roman *denarii*, including locally minted copies, have been found on Dacian sites. The economic relations induced multiple influences through active exchange of goods and technologies, especially in the area of Orastie Mountains (Florea 1998, 31).

The image created by historical accounts on the Dacians prior to the Roman conquest is, despite certain stereotypes, very clear in several aspects of their civilisation. From the beginning they made a very individual note among the barbarians through their warlike ways and their uncommon religion and religiosity. But if internal disputes were a normal occurrence, as in the case of other tribes and ethnic groups beyond the European boundaries of Greece and Rome, it was their two above-

mentioned particular features that on occasions (e.g. under Burebista or Decebalus) could make them overcome disputes and unite. Concepts like god-supported royalty and incipient state administration made their way into the late Dacian society. But, incapable like many others of respecting treaties with Rome or, earlier on, with the neighbouring Greek cities from the Black Sea, for some in their society, war and religion was a way of life. This was a dangerous mixture even when they were divided, but co-ordinated under a unique command could have become the power foreseen by Herodotus long before Rome decided to intervene and defeat them.

2. The Roman conquest under Trajan:

My intention here is not to provide lengthy descriptions of the wars concluding with the conquest of Dacia and organisation of the Roman province, as the subject has been intensively and extensively approached by Romanian and other scholars. The direct literary descriptions by Ti. Statilius Crito and by the emperor Trajan himself - now lost - leave that of Cassius Dio as the most substantial account, along with the illustrative record of Trajan's Column from Rome. What seems at first sight to be a significant amount of information is in fact highly incomplete, corrupted and biased, but still gives important information about the context of the Roman conquest of Dacia. This section will approach the events of the conquest only in order identify the ones that influenced the later colonisation and administrative framework and development of Dacia under Roman rule.

As shown above in the case of the Dacians and the Getae, the frequent barbarian attacks on the borders of the Empire were usually dealt with successfully because the great majority of them were singular events with only local significance. But the unification of *Barbaricum* could become catastrophic for the Romans. The unity acquired by Burebista had gathered no less than 200 000 warriors under the same command that constituted a formidable power already perceived as threatening by Caesar. Fortunately for Rome, it lasted only until his death and it seems that the subsequent division continued until Scorylo's reign 100 years later. At Actium the Getae and the Dacians were divided in their diplomatic action in supporting different Roman parties (see above). Rholes had in fact requested Rome's assistance in his pursuit of power against his political opponents, even of his own ethnic origin. Other barbarian tribes formerly under the authority if Burebista, such as the Bastarnae, are not mentioned as being allied to the Getae (Lica 2000, 126) and the conflict between the Dacians and the Pannonians noted by Tacitus (*Germania* 1, 1) is resolved by Rome by granting permission to settle the plain of Tisa river to the Iazyges Sarmatians ('20s AD). However, Scorylo's unifying actions might already have been perceived as dangerous and under the last king, Decebalus, despite the fact that now the Dacian army could gather only 40 000 soldiers, it proved to be so. Furthermore, by now the administration had developed into a far better organised and centralised kingdom than it had been under Burebista, and his diplomatic contacts in *Barbaricum* were, if fluctuating in nature, nevertheless active and reached even remote regions such as Parthia (Pliny the Younger 74.1).

Domitian tried to keep them under control at all costs through diplomacy, but the new emperor, Trajan, was of a different nature and opted for a different approach. The first of his wars against the

Dacians in AD 101-2 was a punitive action directed towards getting a better diplomatic deal for Rome (Bennett 1997, 87), though other recent opinions have argued that a major factor in persuading Trajan to go to war against Dacia in 101 "lay in his own weaknesses rather than in Decebalus's growing strength, popularity and arrogance" (Lepper and Frere, 1988, 38-9). However, his second campaign, that of AD 105-6, is specific in its aim of expansion and conquest, despite the fact that the literary sources blame Decebalus for failure to respect the peace agreement. Trajan rejected all the peace offers and, predictably, the strength of the Roman army crushed the Dacian opposition. The sources describe the desperate struggle to defend themselves by Dacians intended to mirror the strength and courage of the Roman army and of their emperor, their real subject of glorification. The desperation and stubbornness of Dacian resistance, illustrated in the siege and conquest of Sarmizegetusa Regia (Gradistea Muncelului) and the final suicide of the king Decebalus, is used by modern commentators to explain the unbelievable treatment applied to the natives after the conquest as described by the literary sources including severe depopulation (500 000 prisoners mentioned in a few fragments of Crito's *Getica*) and deliberate ethnic cleansing (Bennett 1997, 101; see discussion in Ruscu 2004).

3. The framework of colonisation and administration

3.1 Territory:

The territory of the Dacian kingdom was not occupied in its entirety by the Romans. Nor did its boundaries remain constant over the 2 centuries of Roman occupation. Immediately after the wars of conquest Trajan occupied the Transylvanian plateau along with most of the territory between the Carpathians and the Danube. However, the occupation took different forms for different parts of the Dacian territory. Some areas, such as Eastern Oltenia, Muntenia and South Moldavia were added to the territory of Lower Moesia (i.e. the territories on the opposite bank of the Danube). The new province of Dacia, on the opposite bank of the river from Upper Moesia, was confined only to the core of the Dacian kingdom, i.e. Transylvania, along with its main routes of access from the north of Danube through Banat and Western Oltenia. After Trajan's death Hadrian had to face a significant threat from the tribes outside Dacia and to make substantial transformations involving some territorial loss being forced upon him (South Moldavia and the plain of Muntenia). However, the damage here was less than in the East, where all Trajan's newly conquered territories had to be abandoned, but Roman territory remained within the limits of modern Transylvania, Banat and Oltenia. The reorganisation affected Lower Moesia too, which returned to its original boundaries from before the conquest of the Dacian territories. Dacia itself (now named Upper Dacia or Dacia Superior) remained within the limits of Trajan's vision of administration, its defence now re-enforced by the creation of two small provinces with a purely military purpose: Lower Dacia (Dacia Inferior) (eastern Oltenia, the retained territory formerly within the boundaries of Lower Moesia) and Dacia Porolissensis (North-western Transylvania). This territory remained under Roman occupation until the abandonment of the province in the 2nd half of the 3rd century AD (Piso 1993; about the date of the abandonment, see Ruscu 2003, 221-231).

3.2. Military occupation:

In 102 Trajan left one legion in Dacia. After the wars ended there were 2 legions in the area, the *XIII Gemina* based at Apulum and the *IV Flavia Felix* at Berzobis. A third possible legion was the *I Adiutrix* but so far neither its precise location nor chronology of occupation in Dacia have been confirmed, nor, indeed, whether it was present in full or just through vexillations (Piso 1993, 7-8). The *IV Flavia Felix* was moved at a later date by Hadrian to Singidunum in Upper Moesia on the Danube, so the presence of only one legion seems to have looked sufficient for the rest of the first half of the second century AD. This proved to be wrong during the events of the Marcomanic Wars, when the legion *V Macedonica* had to be transferred permanently from Troesmis in Moesia Inferior to Potaissa in Dacia.

A lot of auxiliary units are attested in the Dacian provinces during the period of Roman occupation, mainly through epigraphic evidence. Military diplomas mention no less than 58 of them covering a complete range of troops: *alae* and *cohortes milliariae* and *quingenariae* as well as *numeri*, along with significant variation in their ethnic origin (Russu 1975, 142-151). However, this does not mean that all these troops were stationed in Dacia at the same time and throughout the entire period of Roman occupation. Only limited estimations of their number within shorter chronological periods can be made. Unfortunately, as revealed by the most recent comprehensive study of more than a hundred sites (Gudea 1997), the chronological aspects of the occupation of Roman forts in Dacia has not been completely clarified on the basis of trial or more extensive excavation and the main sources for the estimation remain the military diplomas. During the reign of Trajan the Dacian garrison is estimated to have been 28 auxiliary troops (Bennett 1997, 166), and a total number of 54 units within the first 50 years of the 2nd century AD (Russu 1975, 142-151). Based on archaeological evidence, some 34 forts are estimated to have been in use until the middle of the 2nd century AD with certainty. Within the 2nd half of the 2nd century AD only some 30 sites seem at this stage of the research to have been present in Dacia (Gudea 1997). That this is a realistic estimation seems to be supported by the evidence provided by military diplomas issued within the second half of the 2nd century AD. Out of the total of 58, only some 21 (possibly 31) auxiliary units are attested in this period in Dacia. It is worth noting though at this point that both types of evidence seem to reveal a reduction in the number of the auxiliary troops located in Dacia from the first half to the second half of the 2nd century AD.

Unfortunately the data allow us to appreciate more than anything how inconclusive the situation is so far. The category of forts possibly occupied includes mainly those where a precise chronology of occupation has not been established. Very often this is where the chronology is based on morphological interpretation of the site as fitting sometime in the second and third centuries AD. Some of them have had their occupation proved for the earlier or the later period and there was no basis to totally exclude the possibility of their use in the period under consideration. This explains why an increase in uncertainty is visible towards the 3rd century AD. Also, it supports the earlier statement that the analysis attempted here is likely to see changes in the future when more study has

been undertaken in Roman forts in Dacia. At this moment, however, the reliable evidence is still sufficient to observe a decrease, rather than increase in the number of military units present in Dacia over time. The distribution map of these sites (see later, chapter 6 and map) shows that they tend to be located along the frontiers and, where their chronology is clear, some 20-30 kilometres apart, even along the *limites Alutanus* and *Transalutanus*, which allows each to cover an area of the *limes* some 10-15 kilometres in radius. By contrast, the density of forts on Hadrian's wall for instance is greater, as they were located at distances of only some 8-10 kilometres. Within the mid-Mures valley one legion was located at Apulum and three auxiliary troops at Razboieni, Cigmau and Micia. The chronology of these sites is clear enough to reveal continuous occupation throughout the whole period of Roman occupation from Trajan to mid-late 3rd century AD. Micia is the only boundary fort, while the other are distanced from the *limes* line and at some 25, 35 and 45 kilometres respectively from each other. This indicates that their function was not to defend the boundaries, but primarily to control the inner territory, and in particular the routes of communication (terrestrial and riverine) of the province.

3.3. Capitals and command:

Because of its strategic, economic, and also political importance (in relation to the *cursus honorum* and as a source of military power) Dacia was from the very beginning organised as an imperial province and remained so throughout the Roman occupation. During Trajan's reign Dacia was under the command of a governor with the rank of former consul backed up by two *legati legionis*, while all the finances (taxation and payments to the military) were handled by a financial *procurator*. Under the administrative scheme introduced by Hadrian, the Dacian territories were under the command of one governor of senatorial rank (former *praetor*) for Upper Dacia who was also the commander of the only legion left at Apulum, one financial *procurator* for Upper Dacia and 2 praesidial *procuratores* of ducenary rank, one each in Lower Dacia and Dacia Porolissensis. During (or soon after) the Marcomannic wars this scheme was modified again. Military and judicial administration was unified under the command of one governor (former consul) having 2 other senators (the *legati legionis*) as his subordinates and the province was called simply Dacia or *tres Daciae*. The previous boundaries remained only as the domains of the 3 financial *procuratores*, now named Dacia Porolissensis, Dacia Aplulensis and Dacia Malvensis (the latter as the former Upper and Lower Dacia respectively) (Piso 1993, 7-9, 30-41 and 82-5).

From the point of view of this study, the most important centres were the places where Roman state authority was exercised through its representatives. The issue of the provincial capital is one that has benefited from special attention. In Piso's opinion (1993) the foci of command were variable, linked to the location of the functionaries themselves, at least at the initial stage of organisation of the new province. From a military point of view, the most important centres would have been the legionary bases at Apulum, Bersobis and Potaissa. Only Apulum was in that position for the whole of the Roman occupation, as Bersobis was a legionary base only until the death of Trajan and the legion *V Macedonica* was brought to Potaissa only during the Marcomannic Wars. Given the circumstances,

Apulum would have become the military and judicial centre of the province with certainty from the time of Hadrian (possibly even earlier). The financial centre at *Ulpia Traiana Sarmizegetusa* as the seat of the financial procurator is assumed, probably correctly, to have functioned in the same location since the very beginning. The locations of command of Dacia Porolissensis and of Lower Dacia are probably at Napoca (Cluj) and Buridava (Stolniceni) respectively (see argument and discussion in Piso 1993, 39-40 and 90-1).

4. Conclusion:

This chapter has shown the historical background of Roman Dacia in terms of both the development of native society and the conquest itself. Because of inconsistency of ethnic identifications by ancient authors, the coverage of the literary and historical sources was enlarged to include references to the Getae along with those related to the Dacians themselves. Within that larger picture, the area of the mid-Mures Valley that is the subject of the present study develops into the core of leadership and power, for both (at least) late pre-Roman and the Roman times. The scarcity of references in ancient texts in the period prior to Burebista provides little opportunity to follow the political and historical evolution of the area. The only mention of a Transylvanian dynast (Oroles) by Trogus Pompeius (*Phil.* XXXII, 3, 16) refers to Eastern Transylvania and not to the study area, though archaeological sources have revealed the existence of power centres there before the 1st century BC (see chapter 4). During Burebista's reign it is possible, according to literary sources, that his political capital was still located outside of this area, or even Transylvania, but we can date the beginning of Dacian architectural monumentality expressed solely in the Orastie Mountains at the same time. Probably related to the location of the religious core there, the area continues to maintain an important role within the whole Dacian world after the death of Burebista. When Dekaineos takes over power in his capacity of high priest, and despite the political fragmentation, religion gives a pre-emptive position to the political nucleus of Mures valley and Orastie Mountains. It is also significant that only for the Orastie Mountains power centre has a more complete list of rulers survived and that the re-unification from the 1st century AD begins in this area. That the area around Sarmizegetusa Regia was the centre of Decebalus' kingdom at the time of the Roman conquest is made very clear by all accounts. Nearby, in Tara Hategului, immediately following conquest, the first *colonia* (the only *deducta*) of Dacia, *Ulpia Traiana Sarmizegetusa* was founded, and it was the financial capital and centre of the Imperial cult of the province, possibly on the location of an earlier legionary site. Apulum was a legionary base during the whole of the Roman period, seat of the governor and location of Roman civilian settlement of the highest rank. These sites are the most important sites in Dacia as they concentrate the whole administrative, financial, political and military command of Roman Dacia. Given all these facts, the area is ideal for studying the impact of the Roman conquest and occupation on the native landscape in Dacia, as revealed by the settlement pattern and providing a better understanding of the nature of Romanisation in Dacia.

Chapter 4: Late pre-Roman Iron Age landscape;

Iron Age rural settlement pattern and society

This chapter will try to analyse the settlement pattern of the late pre-Roman Iron Age from a different perspective from that previously applied. This study aims primarily to address the social, economic, religious and administrative status and function of the sites, based on their layout and associated finds, but also on their setting both within the natural landscape and in relation to other sites. From this point of view a crucial distinction needs to be made from the start based on the size of the community that would have needed to be accommodated by each type of site, between sites that hosted several families of more or less equal position on a social macro-scale (nucleated) and settlements inhabited by one family with or without secondary members or associated individuals dependent on the leading family.

1. Settlement hierarchy:

Historical sources give hints of a significant demographic development within the Daco-Getic area, but the pattern of occupation and settlement of the territory is still unclear in many respects. The existence of significant variations within the types of Dacian settlement is generally accepted. The current settlement typology (Glodariu 1983, 46-8, followed by the latest studies such as Gheorghiu 2001), takes into account factors such as economic, politico-strategic and administrative importance, local topography, size and the distribution of internal buildings, and identifies 5 types of settlement. The first type is represented by villages and hamlets. These unenclosed settlements, involving groups of a few dozens huts, are recognised to be the most numerous among the identified late Iron Age settlements. They seem to be scattered along river valleys in locations suitable for agriculture or the exploitation of natural resources, but were still located on the upper terraces, and towards the source of the valleys at the bottom of the hills protected by steep slopes and dominant peaks. A second type includes promontory settlements, while the third is represented by settlements on islands, though these are of less relevance for the present study since none have been identified within the study area. Finally, types 4 and 5 cover the settlements from highland areas - whether of scattered (4) or compact (5) structure. Previously Nandris (1976, 732-3) had proposed a different typology which made a fundamental distinction between the sites fortified with *murus dacicus* placed in strategic locations (type 1) and "Domestic settlements largely of wooden houses, but not excluding stone building [...] well dispersed among gardens and orchards, through partially cleared forest, along ridges or in valleys, or even on small platforms dug on the slopes" (2). The so-called *murus Dacicus* is a special building technique consisting mainly of two revetments of ashlar blocks tied by crossbeams, with the inner space infilled with stone rubble and earth. Special holes have been dug transversely into the stones where these wooden beams were installed (see Glodariu 1983, fig 12.2). The technique used at

Costesti is derived from the Hellenistic wall used at the Greek colony of Histria on the Black Sea coast, with stones transversely placed from the wall line into the rubble core (*emplecton*). The difference between the Costesti-Cetatuie wall and that of Histria is that the former makes active use of the wooden cross-beams, while in the latter the wooden beams were absent, despite the provision of holes for their fixture on the inner side of the 2 stone revetments at the corners. *Murus Dacicus* does not use at all the transverse stones specific to the Hellenistic walls, relying simply on the wooden beams to keep the wall together. A special technique seems to have been used for the wall of Craiva hillfort where the stone faces of the wall not only rely on the horizontal enforcement of the transverse beams, but also vertically, through vertical stones fixed into stone foundations (Gheorghiu 2001, 132-141). The walls are usually about 2-3m (up to 4m, e.g. Luncani-Piatra Rosie). Within the study area, evidence of *murus dacicus* has been noted at Banita, Capalna, Craiva, Cugir, Deva, Costesti (Cetatuie, Blidaru, Ciocuta, Faeragu, Poiana Popii, Poiana Pertii) Gradistea Muncelului (*Sarmizegetusa Regia*, Varful lui Hulpe, Aninesului Hill, Lunca Nastii, Fetele Albe) and Luncani-Piatra Rosie. Although it was often present in hillfort enclosures, it was also used in the construction of terrace walls and tower-houses.

Lockyear also identifies as separate types of settlement the "upland dairying and herding sites" (3), the sanctuaries and ritual sites (4) or the industrial sites with metalworking and pottery activities (5). Most recently, Lockyear (2004) has produced an analysis of the late pre-Roman archaeology of the intra-Carpathian Dacia in which he applied the distinction between various types of settlement based on their defensive enclosure, covering undefended rural settlements (1), sites with non-*murus Dacicus* defences (2) and fortresses, and, in a separate section, settlements in the Orastie Mountains and their associated sites (3).

As observed by Lockyear (2004), the typology proposed by Nandris (1976, 732-3) does not fit the Dacian archaeological evidence in areas other than in the Orastie Mountains. The type of landscape where this settlement pattern had functioned is specific to the uplands and no mention is given to settlements located at lower and middle range altitudes. Also, since the Orastie Mountains area seems to have been in many respects an exception within the Dacian landscape, with types of sites not found in other areas, the extension of its typology to the rest of the territory would give a seriously distorted view of the Dacian settlement pattern. Furthermore, later research has added new types of settlement (e.g. tower structures) and re-interpreted some of the earlier considerations concerning the Dacian 'stâne' (animal husbandry sites –classified by Nandris as type 3 and largely accepted also by Lockyear). The study by Glodariu was focused primarily on analysis of the architecture rather than of the general settlement pattern, particularly of the higher status settlements which in general have been the focus of most research interest and, as a result, are best known. Lockyear's recent study redresses the balance to some extent by applying the fundamental distinction between open and enclosed settlements (and within the latter, between those with *murus Dacicus* and with non-*murus Dacicus* enclosures), along with recognising the unique character of the Dacian ocupation of the Orastie Mountains area which, as a result, is dealt with in a separate section.

However, previous studies have tried to address social hierarchy as reflected exclusively in settlement pattern by identifying status through the presence of *murus Dacicus* enclosures and distinctive architecture. From the social point of view, however, it is important to deepen the analysis by considering settlements in direct relation to the occupants and their way of life, and to link the structure of the micro- (in-site) and macro- (landscape-scale) space to settlement function.

The nature of Dacian settlement from an archaeological prospective is still open to debate. Traditionally, the most characteristic feature of the Iron Age settlement pattern in Continental Europe was considered to be the nucleated site, open at the beginning of the La Tene period and later enclosed, examples of which are generally referred to as *oppida*. Indeed, even recent general studies (e.g. Cunliffe 1994; Wells 2001) have been influenced by this site-focused attitude towards the archaeological evidence. Dacia is generally considered to follow the same pattern of settlement, although it has been observed for a long time that there are very few large aggregated settlements and that many of the unenclosed Dacian settlements seem to have had a scattered layout. Thus, none of the typologies referred to above give any consideration to individual settlements. This characterisation provides a stark contrast to the British late Iron Age, for example, where aggregated (nucleated) settlements seem to be common only in the area of south-eastern England, and the dominant type of settlement seems to be the smaller-scale enclosed farmstead (Haselgrove 1999; Haselgrove 2001).

However, advances in field surveying techniques, especially aerial photography, along with the application of computer methods of analysis have produced significant changes in perceptions of Iron Age settlement on the Continent. Already by the 1980s, Wightman (1985, 15-17) saw beyond the *oppida* and identified a more nuanced settlement pattern in Gallia Belgica, where small settlements of a few families constitute the norm (for example Horath and Wederath), with some small hillforts belonging to the social elite (e.g. Hoppstädten-Weiersbach). The Gaulish farmstead, usually contained within a ditch system forming a double enclosure, with a ditch-lined entrance and sometimes fields and trackways has become familiar in the regional archaeological landscape since the introduction of aerial survey, as for example at Conchil-le-Temple, where the presence of two rectangular houses and a variety of other post-holes and pits suggest an unpretentious farmstead housing one or two families (Wightman 1985, 15-17). In the same vein, recent landscape-focused studies have showed that the predominant 'rural'-agricultural form of settlement still seems to be the farmstead, with or without an enclosure, as for example in the l'Oise area in France (Gaudefroy *et al.* 2001). Aerial photographs show a widespread distribution in continental Europe of enclosures of all dates, including the Iron Age, with morphological characteristics similar to those in Britain, as demonstrated by recent collaborative pan-European aerial archaeological projects (see, for example, the exhibition catalogue edited by Oexle (1997)), although the present biases in British air survey has still, perhaps, to produce more morphological similarities between Britain and the continent in terms of open settlements. Closer to the present study area on the middle Danube, the settlement pattern also used to be represented primarily by *oppida* (e.g. Velemszentvid, Szalacska, Pest) defined as "rural settlements located on mountains or hills, surrounded by earthen enclosures and serving also as shelter during wartime" (Trogmayer 1980). Other types of settlement have been largely supposed on

the basis of the numerous cemeteries discovered, rather than precisely located. More recently, in the Upper Tisa valley (http://minerva.york.ac.uk/catalogue/proj_data4/UpperTisza_ba_2003/html/home.htm) a modern field-surveying programme has identified "thin sherd scatters" as small open settlements, normally interpreted as hamlets or farmsteads. In this context, the apparent lack of such individual sites within the Dacian settlement pattern may be related to the traditional archaeological methods being applied. Even for known sites, traditional non-systematic approaches to field walking and the excavation of limited areas stand little chance of indicating precisely the area occupied by a site, the presence or lack of an enclosure of some kind, the number of houses and ancillary structures, or their layout within the site. Potential individual sites could, therefore, have failed to be recognised and some of the sporadic scatters of artefacts currently assessed as indicators of villages or hamlets may well represent individual homesteads/farms.

A quick general overview of the evidence for Dacian domestic buildings indicates the presence of a large variety of house types, whether sunken (with all or most of the wall height below ground level, at depths exceeding 0.80-1 metre), half-sunken (with half, or even most of the wall height built above ground level, the floor being only 0.20-0.50 metres deep) or surface structures. Both oval/circular and rectangular forms of constructions were used. The pentagonal plan semi-sunken structures of 3.65 by 3.24 metres found for example at Catelu Nou outside the study area (Glodariu 1983, 11) or, indeed, larger polygonal examples from Orastie Mountains, may represent a transitional type from circular to rectangular architecture, or perhaps are only dictated by the use of posts to sustain the walls - the octagonal example from Gradistea Muncelului seems meant to be a circular structure, with a roof supported by a central post and its polygonal plan determined by the use of the eight posts in the structure of the wall (figure 4.1). According to Glodariu (1983, 10-11), sunken houses are built mainly in lower areas and they are rectangular with rounded corners, polygonal or circular in shape. The dimensions of the latter are also variable, although rather small, they average 3.50 by 3 metres in diameter, occasionally 4.50 by 3.50. The semi-sunken houses are by far the most common, largely characteristic to the plains and hills landscapes. Circular (with diameters of 3,50 - 4 metres), roughly trapezoidal with rounded corners (approximately 4 by 3 metres) or rectangular examples are all recorded. The surface-built houses are usually single-roomed and rectangular, with the walls supported by ground-fast wooden posts in often stone-packed post-holes, especially in the mountainous areas, though several examples had multiple rooms (2 or 3) (e.g. Gradistea Muncelului, Luncani-Piatra Rosie). Some houses had one room with an apse (Luncani-Piatra Rosie), sometimes located within a circular/polygonal building surrounded by other (one or two) concentric rooms (e.g. in the Gradistea Muncelului area - figure 4.1). Although most of the examples of houses outlined above come from larger, aggregated settlements, the same types were used in the few sites discovered outside of an aggregated context. The chronological evolution of Dacian house types as currently understood indicates a steady evolution towards raising the houses above the ground level from '*bordei*' (sunken) to '*semibordei*' (semi-sunken) and then surface, post-hole structures (Glodariu 1983, 9-25).

Most commonly, pits served for grain storage, clay extraction and, indeed, the dumping of rubbish. The most widespread are bucket-, funnel- or pear-shaped pits with diameters ranging from 0.80-1.25 metres at the surface and 1.30-2.50 metres at the bottom, and their depth ranging from 1 to 3 metres. The pits were the most common method of storage in the Dacian settlements, as they had been since early prehistory. Large storage pots ('chiup/-uri') with conical-shaped bodies, which were also fixed into the ground, were also used to store grain and, especially in areas with harder geology (for example in the Gradistea Muncelului area), timber and wattle structures interpreted as granaries have been discovered. Other structures include kilns/ovens, although they seem to be related more to workshops than houses. The open hearth was the main feature for heating and cooking purposes, but not all the excavated examples of Dacian domestic buildings seem to have been provided with hearths. This seems odd, especially given that examples are known even in locations where the local climatic conditions would have made heating installations absolutely vital (such as Meleia or Rudele –see below). For this reason, along with the fact that only in some cases have the remains of daub been sufficiently preserved, Glodariu advanced the possibility that such cases represented temporary (seasonal) houses. However, 'portable' heating installations of the type documented in the settlement at Sebes-Lancram (although of a slightly earlier date) could have replaced the missing hearths, or the buildings may simply have been used for storage, and alternative means of insulation for timber walls (e.g. skins, blankets) could also have been used.

The villages are made up of houses, ancillary buildings, and additional structures. The location of the houses within the settlement does not appear to demonstrate adherence to any systematic rules, although Glodariu (1983, 44-5) argues that at least concern for safety against intruders would have been a factor. This is based on the tendency of earlier features to be located towards the more secure parts of the settlement, such as in the vicinity of the hill-slope in open settlements in the narrow valleys, or towards the tip of the promontory in defended promontory-type settlements. The oposite phenomenon is noted only at Arpasu de Sus outside the study area, where houses seem to cluster towards the edges of the settlement Glodariu (1983, 45). Numerous pits are located within the aggregated settlements in the area between the houses.

Some 146 sites within the study area have been considered to have sufficient supporting evidence to indicate the location of a settlement of some kind in pre-Roman times (figure 4.17). Artefacts have been discovered in 72 other locations without immediate indications that they relate to settlement (mostly coins and hoards). The way the identified sites have been reported varies a great deal, from those where extensive excavation projects have been in place or are ongoing, through those where excavation reports (interim or as monographs) have been produced, to those where vague reports of the accidental discovery of artefacts are the only indication of any archaeological significance.

The chronology of the reported sites is a problem, however, that has been noted similarly by other more recent studies (see discussion in chapter 4) and as a result, not all the sites to be considered by this study were necessarily contemporary with each other. A broad date of 'Classic Dacian' is given to most sites, which is "partly due to the unique problems facing Romanian coin data (see below), but is also due to a lack of quantified pottery studies and an insistence on dating archaeological phases to

historical or pseudo-historical events such as the Dacian wars or the 'creation of Burebista's state'." (Lockyear 2004). The 'Classic Dacian' period normally refers to the last two centuries BC and the first century AD, but in numerous cases simply 'Dacian' or even 'La Tene' are considered to be a sufficient indication of the chronology. Also, the tendency of establishing site chronologies based solely on artefactual evidence without reference to stratigraphy leaves the subsequent identifications open to question. For this reason, several discoveries attributed by some scholars to the Celtic La Tene period have been included by others in the Dacian period (such as the inhumation at Blandiana). Therefore, it is extremely difficult to decide which sites should, indeed, be included in the present analysis and which left aside. Eventually it was decided to take into consideration most of the sites reported as La Tene, including those where contrary opinions have been expressed, so as to be as inclusive as possible.

The types of Dacian settlement identified so far have all been considered as populated by communities of variable size from hamlets to villages. The largest number of discoveries reported so far, in most cases based on artefactual evidence, has been interpreted as indicative of villages and hamlets, although in only a few cases has more extensive evidence of several houses within the settlement has been produced. Within the area of the present study about 76 settlements are of unknown type and for only 32 of them has any indication of their extent (even general comments such as 'large' or 'small') been provided. Nevertheless, some 10-12 of these sites could be considered of a size larger than an isolated farm, giving a total of 19 settlements deemed to have hosted larger communities, probably villages. Some 44-46 settlements could go into either category. However, on analogies with other areas in Iron Age Europe, such as Britain (see above), they are more likely to represent individual homesteads than villages. On this basis, that would give no more than 20 aggregated settlements and some 80 individual settlements in the area in later prehistory. In many cases, the larger settlements are in fact more scattered in nature, with individual homesteads spreading over a significant territory, and it is only their concentration in a particular area that supports their interpretation as a single settlement. Such examples were found in the vicinity of the modern settlements at Deva and Costesti and are discussed later in this chapter.

1.1. Villages

This category is generally considered as the most common type within Dacian settlement pattern. Nucleated settlements within the study area have been categorised primarily according to the presence or absence of fortifications, into fortified settlements ("asezari fortificate") and open settlements ("asezari deschise") (figure 4.17). Most of them were unenclosed (open) and their layout is considered to range from a nucleated (compact) to a scattered structure (Gheorghiu 2001, 91-3). The enclosed sites at Ardeu, Bretea Muresana (figure 4.10)and at Cucuis (Golu hill), are considered to be 'fortified villages' based on internal characteristics and the lack of *murus Dacicus* enclosures (although in this respect the hillfort at Cugir could also belong to this category). Unfortunately, the little research which has been undertaken within the occupied area of the enclosed settlements has produced no convincing evidence to differentiate the hillforts from these so-called fortified villages,

and therefore they are discussed in this chapter within the section dedicated to fortified sites (hillforts).

1.1.1 Open compact-layout villages of lower altitude regions:

The Dacian settlement at Sebes-Lancram (site 341) (Popa and Totoianu 2000; Ferencz and Ferencz 2001) is located immediately on the left side of river Sebes and has recently been partially investigated in a rescue excavation which revealed a series of features (sunken houses and pits) from the early and late Iron Age, but no enclosure has yet been detected. The late Iron Age (1st century BC) occupation is represented by one house (house 3) located on the limit of the terrace (which has partially damaged the feature) and several pits (pits 3-7). The house is a typical sunken house of 0.8-1 m in depth from the ancient ground level with probably a rectangular plan and large dimensions (some 6 metres in length). Wooden posts are recorded with a clay layer (floor?) inside and traces of burnt wood. The finds of Iron Age date from the house, mainly from pits, is generally poor, largely consisting of coarse hand-made pottery, including a large storage 'chiup'and two big jars, along with a 'Dacian mug' ("ceasca") (Popa and Totoianu 2000, 55-6 and 78-82). Fragments belonging to two wheel-thrown black-polished pedestalled plates ('fructiere'), 2 kantharos-type vessels and a handle fragment of a red semi-fine imitation krater are among the exceptions.

Based on artefactual evidence, a similar village of pits and sunken houses is supposed to have existed at Sebes-Podul Pripocului (328), just 3 kilometres away to the south-east on the left bank of the nearby valley of the Secas river. The site is a tell-type (with deposits of 1.80 metres in depth) multi-period settlement. Included between early prehistoric (Neolithic, Bronze Age) and Roman phases of occupation is a middle La Tene and, indeed, a late Dacian occupation. The latter is attested by discoveries of wheel-thrown grey pottery and a fragment of Sarmatian mirror (Moga and Ciugudean 1995, 167). Another settlement was located at Cicau-Saliste (35), which also continued into the Roman period. Within the area partially investigated between 1969 and 1973 the village evolved from semi-sunken houses in its first phase to surface timber houses in its latest. A pit containing ash and pottery, dated within the 3rd-1st centuries, is the only indication of Dacian pre-Roman occupation on the site. However, in many of these examples, only a few late Dacian features have been revealed and the identification as a nucleated site comes in the context of the earlier (Sebes-Lancram) or later (Cicau-Saliste) occupation and is based on analogy with better-known sites such as Slimnic (pre-Roman and Daco-Roman) or Obreja (Daco-Roman).

A different research approach has been in force at Vintu de Jos (409) (figures 4.3 and 4.4). There, the archaeological gazetteer reports the presence of multiple-period (Bronze Age, Dacian and Roman) scattered ceramic finds, although spread over a considerable area (Moga and Ciugudean 1995, 207), and based on this data Gheorghiu (2002) interpreted the settlement as a late Iron Age village. Recent aerial photographs of 2000 and 2003 revealed the plan of a settlement with sunken houses and storage pits, immediately adjacent to a Roman villa, as positive cropmarks in a field under wheat cultivation at the time of discovery. The settlement was located only 50 metres away from the river Mures, 4 kilometres west of its confluence with the Sebes river, on a naturally raised edge of the first

terrace. A well-drained subsoil has facilitated the creation of crop marks and hence the recognition of the site during aerial reconnaissance. The interpretation of the photographs and site transcription revealed some 143 positive cropmarks (pits) (figure 4.4). A further linear feature (ditch) 124 metres long on a WNW-ESE alignment running through the middle of the site does not seem to have had any defensive/enclosing function and could belong to any of the chronological phases of the complex, prehistoric, Roman or indeed later. Without excavation it is difficult to make estimations related to the chronological context and function of each of these features. However, previous comparative studies on data sets provided by prospection methods on the one hand (aerial photography, geophysical survey, systematic field walking) and excavation on the other (e.g. at Zwingendorf, Austria - see Doneus *et al.* 2002) have revealed that reasonable interpretative estimations can be made based on the analysis of size and shape of the features. In the case of the settlement at Vintu de Jos, 130 of the features with an area of under 4 square metres were circular of under 2 metres in diameter and have been interpreted as possible postholes and/or small storage pits. A further group of 43 features are bigger, but still with areas under 10 square metres (diameters of under 3-3.5 metres) and could indicate storage pits or, in few cases, possible small sunken houses. A further group of 21 features of circular/oval plan had larger dimensions, with diameters of 3-3.5 by 4.5-5 metres and areas between 9 and 17.50 square metres. 15 features had areas above 17.50, up to 35 square metres, their lengths reaching 6 metres. Their shape seems to evolve from oval/circular towards rectangular and trapezoidal with rounded corners and was oriented (with a few variations) on a NW-SE alignment. The features described within the last two categories can, therefore, reasonably be interpreted as prehistoric houses. The grouping of houses according to their morphology indicates the probability of at least 2 or possibly 3 independent phases of occupation on the site, with sunken and surface post-construction. An earlier occupation of the site is indicated by Bronze Age Wietenberg culture materials noted among the Dacian and Roman artefacts (Moga and Ciugudean 1995, 207). Indeed, the earliest phase of occupation at Vintu de Jos included also an inhumation cemetery located some 400 metres further to the south-east, along with another group of pits (of the first and the second category of 1-5 sqm and between 6-8 sqm described above) similarly located on the edge of the terrace above the river some 250 metres upstream. Because of variation in crop pattern during the years of aerial reconnaissance, it is unclear at this date whether the early prehistoric settlement had also occupied the whole area between these two agglomerations of features along the edge of the terrace (and therefore occupying an area of some 32,200 sq.m.). However, the later settlement seems to have been restricted only to the small area already detected of 14,800 sq.m., and both groups of larger houses could be dated within the late Dacian, or indeed, continuing into the Roman period.

1.1.2. Open compact-layout settlements in the mountains:

Upland settlement is very well documented within Dacian times. The settlement on the Gradiste hill at Gradistea Muncelului (*Sarmizegetusa Regia* -discussed later with reference to the hillfort) is the largest settlement in the Orastie Mountains. It is considered to be of compact layout, despite the fact

that the inhabited areas consist of a series of over 100 man-made terraces each of them normally housing one homestead comprising the house and an ancillary building with a combined function of storage/deposit. Six kilometres away to the north-west, the Dacian settlement at Fata Cetei on the southern slope of Ceata hill (altitude 1237m) consists of about 40-50 artificial terraces, some of them as long as 100-150 m, but no other details are known from lack of more detailed research. An associated fortified site in the vicinity, although mentioned by early sources, has not yet been located. The presence of iron sources nearby is supposed to have boosted the emergence of the settlement in this remote area (Gheorghiu 2001, 85). The third-largest settlement in the area is the one from Fetele Albe north-west of Gradiste Hill, on an extension of Muncelul Hill, spread over 30 terraces. Excavations in the settlement (at Sesul cu Branza) discovered several buildings constructed on 5 variable-sized terraces supported by stone walls (*murus Dacicus*). Only one or perhaps two of the buildings had a domestic character (figure 4.1), located on terraces no 1 and 5. Although the occupation went through two different phases, the function of the buildings was not changed. Unfortunately only the plans of the later houses has been determined, which seem to display the same circular/polygonal shape with multiple concentric cells. The same type is illustrated in the settlement on terraces 10 and 12 and also elsewhere in the Orastie Mountains. The houses had two or three concentric cells. The outer (most often the third, rarely the second) cell is normally interpreted as a partially open space (porch or outer porticus) and is indicated by the less-continuous stone and timber posts for the wall, as opposed to the solid continuous base of the timber walls from the inner room(s) (Gheorghiu 2001, 71-2). The hearth is located within the central room, which is rectangular with an apse. Most of the artefacts are to be found in the second (middle) room and consist of various pots (many with ceramic lids - for cooking or for storage), along with tools, utensils, even imported goods (a bronze handle of a patera with the makers mark of ANSIVS DIODORVS). The houses were accompanied by ancillary dwellings (as for example on terrace no.5), mostly 'granaries' – rectangular timber structures raised on stone slabs with gaps to provide air circulation underneath. Terraces 2 and 3 from Sesul cu Branza hosted sanctuaries, while terrace no. 4 probably served as an open space. The area was provided with a water supply network from two streams in the vicinity in a similar manner to the one present in the main settlement on the Gradiste hill, and evidence of pottery production on site is provided by the discovery of a pottery kiln with a holed grate. A deposit of tools has also been found on one of the excavated terraces. The presence of *murus Dacicus*-supported terraces, sanctuaries, water supply, pottery production, imports and painted pottery add to the complex character -of the type illustrated by *Sarmizegetusa Regia* - and importance of the settlement at Fetele Albe.

A small agglomeration of houses was located at Cozia (Piatra Coziei hill, altitude 686 m) west of Deva, in between the modern villages of Cozia and Herepeia. Traces of surface buildings accompanied by hearths were found on 5 man-made terraces facing south-east, but no other details of these structures are provided. Although no mention is made of any provision of enclosure/defences, the site is interpreted as a fortified site because of its topographically remote and less accessible location, and interpreted accordingly by Glodariu (1983, 95) as exclusively strategic. But the lack of an enclosure, along with the fact that the settlement at Cozia seems to be facing the opposite side (i.e.

south-east, rather than north in order to overlook the corridor created by the Mures river) do not support this interpretation. The usual finds (dated 1st century BC-1st century AD) of hand-made and wheel-thrown Dacian pottery are accompanied by fine ceramics (including painted pottery), iron tools (hooks) and weapons, fragments of millstone and parts from a bronze weighing scale, seem to support a more permanent and civilian character of site occupation. This is reinforced by the few details provided on internal features and structure. The presence at Piatra Coziei of finds indicating other than a small, rural lower-class community is obvious from the presence of painted pottery and especially that of the weaponry, but the lack of stone architecture (*murus Dacicus* enclosure or tower-houses) prevents further advance towards an exclusive interpretation of the site as a warrior elite residence. The size of the settlement as indicated by the total of only five terraces identified so far it makes this settlement somewhat closer to some of the small clusters of occupation such as Rudele-Brandusita (see below). Similar types of luxury goods are present also in the settlement at Cetea (144), including painted pottery and imported goods (even amphorae, which are very rare in Transylvania), weapons and tools (including an anvil), which probably indicate a settlement of equal significance to Piatra Coziei, though lacking the same topographic setting.

The site at Piatra Coziei could have been related to the andesite stone quarries nearby (between Cozia and Deva) which were identified as source of material for the grandiose religious architecture at Gradistea Muncelului –Gradiste hill. Indeed, aerial reconnaissance has identified at Cozia the extant remains of a settlement of yet unknown date at the foot of the andesite quarry located just outside the modern village, to the east. Several small enclosures (one of them better defined on the lower plateau, rectangular in shape with dimensions of 5.40 by 4.20 metres) are visible (figure5.27)but the information is insufficient to support a late prehistoric/Dacian origin. A larger, circular feature however, of some 20 metres in diameter is however more reminiscent of Dacian structures described in this chapter. It occupies the upper part of a small mound, which is bordered by apparent stone slabs or blocks. In the interior at least one (possibly two) rectangular smaller platform(s), levelled prior to construction are visible. Based on this interpretation, the site would probably fit better in a different category as an individual homestead, but if the settlement included at this time some of the surrounding features as well, it could represent an aggregated settlement in the mountains.

1.1.3. Open scattered-layout settlements in the mountains:

Many of the settlements within the study area showed less concern for agglomeration. Scattered-type settlements are present in both upland and lowland areas, and their frequent occurrence could make a strong case for considering them as the predominant pattern in late pre-Roman times. According to the typology proposed by Gheorghiu (2001) the settlements from the upland areas without a compact structure consisted of scattered isolated homesteads (farms) (examples in the large area between Costesti and Gradistea Muncelului, Luncani, Gura Cutului, Cucuis) or several nuclei of small clusters of homesteads (such as the sites Meleia, Pustiosu and Rudele). She, however, considers the character of the settlements without a compact structure from upland borders (such as the densely populated areas outside the hillforts at Deva or Costesti) as different, and describes it as 'semi-compact' in

nature. The first type, consisting of very large areas occupied by scattered individual homesteads, is difficult to define other than as a mini-landscape. The location of the examples in the uplands could be the reason for the better survival of the sites (as, indeed, in the case of the second type). The limits of these geographical areas are, at the moment, defined in relation to the location of sites within the boundaries of one modern settlement or another, which did not apply during the late Iron Age. The distances between various points of discovery within these areas are variable, sometimes a few kilometres, and any ties binding the multiple individual entities (homesteads) into a community are impossible to define. It is safer, therefore, to consider these sites as individual farms, and the identified areas as surviving examples of land use and settlement within the late Iron Age. Accordingly, they have been considered in the section on individual homesteads in this chapter. The difference between the dispersed settlements (Gheorghiu type 1) and the semi-compact examples (type 3), is the greater density of occupation of the latter and possible relation to hillforts nearby. Because of their association with hillforts, the open settlements from Deva and Costesti will be analysed in the relevant section later in this chapter. The focus of what follows will be on the remaining type of open settlement, which groups several small clusters of homesteads.

In the following cases, a certain nucleation is already existent, and several homesteads have been clustered together. Such clusters were located quite close together on the same mountain, which provides a reasonable argument for considering their occupants as more likely to have had a greater sense of belonging to the same community. Meleia (located at 1419m above sea level) had 7-8 small terraces with apparent mounds, usually grouping 8-12 in each group, and a small plateau with 17. It was estimated that the whole settlement had as many as 37 individual buildings, although excavation has indicated that not all of them functioned at the same time. The terraces, with traces of early occupation, were abandoned in the later phase and the settlement seems to have moved onto the larger plateau; also, two investigated houses from the plateau were demolished and replaced by three others. Eight mounds have been completely excavated (see details on historic of research in Lockyear 2004). Many buildings had several rooms on a circular-concentric layout, (Figure 4.1) (although at least one rectangular example -9 by 8 metres- on terrace VIII had only one room divided into 3 compartments). The houses could reach up to 13-15 metres in diameter, the second room (outer room in the double-roomed and central room for the triple-roomed examples) occupying most of the inner area. A third room appears in fewer cases and is normally interpreted as a partially open space based on the fact that in their foundations the stones have been placed with gaps in between, unlike the bases of the inner walls. (Glodariu *et al.* 1996, 214-216). One construction on the plateau at Meleia had the walls of its central room supported by wooden posts (figure 4.1). The floor was usually made of clay, but at Meleia one of the houses had the flooring of the central cell in timber. Since no tiles have been found, the roof is supposed to have been made of wooden shingles, although the iron nails are a rare occurrence (only two of the structures at Meleia show clear evidence of iron building materials such as nails and hinges –Lockyear 2004). This building technique is similar to examples from other settlements from the mountains in Gradistea Muncelului area (Gradiste, Rudele, Fetele Albe, etc).

Similar structures have been discovered on top of Rudele hill, south of Gradistea Muncelului, at 1366m above sea level. The Dacian settlement from 'Brandusita' (629) is known in more detail after four of the five terraces/mounds (10–26m in diameter and 0.5–1.2m high) have been excavated. The Dacian occupation on that hill, however, seems to have been extended in three other small clusters (in 'Rachiteaua', 'Poiana Mare' and 'In Saruini'). The four excavated terraces at 'Brandusita' were occupied by four houses, three of them with apparent domestic use while the fourth was interpreted as a workshop. Two springs ensured water supply. The houses (figure 4.1) were largely similar to those from the settlement at Meleia, circular concentric plan, two with two and one with three rooms/cells; the latter had an apsed central room of 4.60 by 3.60-3.80m and the other rooms of 10.70 by 9.30m and 15x13m (Glodariu *et al.* 1996, 213-4).

A site that so far has benefited from considerably less attention is the one from Tampu hill (1495 m) (627), also in the Gradistea Muncelului area, to the south-east of *Sarmizegetusa Regia* (Glodariu *et al.* 1996, 155-6). The site consists of two nuclei of settlement at 200-250m to the east and 150-200m to the south-east of the lower of the two peaks of the hill. The first area of settlement is indicated only by sporadic traces, consisting of black coarse ceramics and charcoal. The second area is more visible as 3-4 platforms/mounds (15-20m in diameter and 1m in height), and trial excavation in one of them produced material of similar nature to that from the first area.

The possible function of the settlements and of their buildings has raised many questions. The known data from Tampu hill is insufficient to provide basis for a detailed interpretation of the site, but its layout seems to indicate that it was of a similar nature to that of Meleia and Rudele. Meleia was by far the richest site in finds, although the concentration was higher in the area of late occupation (another possible argument for the voluntary abandonment of the terraces). In the plateau settlement the pottery evidence included several types of vessels, most of them for storage (of several dimensions) of solids/cereals - wheat and millet - ('chiup', krater-type, jars, bowls) and liquids (jugs, mugs). Special mention is being made of a type of vessel without a bottom and surrounded by a wide 'collar'-ring at a third of its height. Meleia also had evidence of painted pottery coming from 3 houses on the plateau. Ceramic tools used in pottery production for polishing ('calapoade') and spindles indicate some domestic craft production, while whetstones and quernstones ('rasnite') are among the tools used by the inhabitants. But the presence of iron slag in three of the excavated buildings, and of sledge hammers and tongs in one building, suggests metallurgical activity perhaps on a larger scale than just 'domestic'. Interestingly, a few weapons were also noted among the discoveries. At Rudele the large quantities of pottery did not include painted pottery, but the presence of several polishing tools ('calapoade') is perhaps an indicator of on-site pottery production, and the presence of iron slag might indicate also metallurgical activity. Other finds included iron tools (sickle, file, tongs, hammer chisel) (Glodariu *et al.* 1996, 214-16). The chronology of these settlements indicates a late pre-Roman occupation (1st century BC –1st century AD), ending in few cases in abandonment (as on the terraces of Meleia). More often they were burnt down, some still with quite a rich finds assemblage inside perhaps indicative of a violent end (Gheorghiu 2001, 119). Traditionally in Romanian archaeology this interpretation is supposed for any example of a fired building of this period and related to the Roman conquest. But even though repeated fire episodes are

attested in some cases, it is unlikely that they were all related solely to these military events, and the possibility of the short-lived reconstruction of the buildings between AD 102 and 105 which has been advanced on the basis of such arguments needs to be re-addressed.

The finds evidence, especially for Meleia, is puzzling and does not fit with any of the interpretations offered so far. Because of their location, at an altitude where modern settlement consists only of occasional seasonal (summer) accommodation for flocks and their shepherds, or hay fields, the expectation from the beginning was that the prehistoric settlement would have had a similar character and pattern (hence Daicoviciu's interpretation as 'stane' –see Lockyear 2004). The seasonal character of their occupation is still argued for, on the basis of a lack of evidence of hearths (in a few cases) and of daub insulation of the walls, both considered a necessity for continuous occupation all year round (Glodariu 1983, 23-4). But the quantity and variety of finds suggests a more permanent occupation, so that the daub insulation of the buildings was perhaps replaced by other means. Pastoral farming being rejected on the basis of the finds evidence, especially of large quantities of pottery including fine and even painted ware (Gheorghiu 2001, 107-9), the economy was re-interpreted as largely focused on a workshop-based iron production (Glodariu and Iaroslavschi 1979) using the natural iron ores found on Strambu hill (in the vicinity of Rudele), at Tampu, in Petrosu river valley, or at Batrana, Mlacilor hill and Negru peak. This provides a bold contrast with Sanie's interpretation (1995, 27) of some of the buildings (that from terrace II at Meleia and building 3 from Rudele) as sanctuaries based on the similarity of plan with early sanctuaries from Dacian sites. The general resemblance between this type of house and early buildings with a religious purpose is not surprising as the latter would probably have evolved as a special type from the former (Lockyear 2004). A commonplace of these theories is that they all support the view that they represent a specialised settlement of some sort, whether related to animal husbandry, iron production or, indeed, with a religious purpose (monastic communities?). A so far unexplored argument against them being seasonal shepherd settlements is that no evidence of animal enclosures related to the houses has yet been found. Similarly, as Lockyear has already noted, their interpretation as iron working centres still leaves open questions as to "why they were not situated actually at those deposits, and why no trace of furnaces has been found". Therefore, since no single-function alternative seems to fit with the whole evidence, a multiple function for them seems more likely, and quite possibly none of the functions supposed so far is yet to be excluded.

Possible small cluster settlements were identified in other locations in the same area. The remains of three Dacian homesteads with large quantities of pottery, a fragment of a volcanic stone (tufa) quernstone ('rasnita') and a fragment of a limestone ashlar block have been found between the sources of the Rea and Vartoapelor streams (Gheorghiu 2001, 206). Also, on the slope of Pustiosu hill (site 616) facing Gradistea stream several (?) terraces were located. On one of them a small-scale excavation revealed a surface-built circular (polygonal) Dacian house with three concentric rooms (figure 4.1). Finds were quite rich and consisted of various ceramic fragments and iron tools and construction fittings (e.g. nails). Nearby, on a plateau on the top of the hill, were discovered fragments of red storage pots (chiupuri). On another hill, Gerosu (site 618), only 4 similar terraces with traces of occupation (pottery, burnt daub and floor clay) have been found, indicating a small

cluster of similar homesteads, while Muncelului and Popii hills are covered at various points with the remains of scattered Dacian settlement (Gheorghiu 2001, 69-70).

That this type of habitat had a wider distribution than the upland areas is proved by at least one example at Orastioara de Jos - La Feregari (592), where trial excavation of 3 circular platforms with diameters ranging between 15.70-26 m by 15.10-20 m produced Dacian pottery, burnt daub and iron slag from a small group of Dacian homesteads with a range of economic activities that included also iron production of uncertain scale.

1.2. Individual homesteads (farms)

There are only 6 settlements which have been recognised as, or assumed to be, individual homesteads. To this number we could add with reasonable certainty some further 13-15 settlements where, although a specific type of settlement has not been identified, a small area of occupation was noted. We do not know much about such examples, given the fact that their characteristics would make them extremely difficult to detect by the type of survey applied in the area, and that they are extremely exposed to destruction by later human activity. Therefore, identified examples tend to be located at higher altitudes where site survival is best. One example is at Gradistea Muncelului – Valea Rea (site 611), where a Dacian homestead and one ancillary building probably used for storage, both destroyed by fire, have been discovered on two artificial terraces. The artefactual evidence revealed pottery of late date, along with iron nails and fittings used in construction, including parts of a door lock and its key. Another Dacian house with evidence of daub construction, along with a further similar example within a palisaded enclosure, have been partially excavated at Tarsa –Voineagul hill and Gerosul hill (633 and 634). The latter provided evidence for other constructions located at various distances outside the enclosure and, therefore, might belong to a small nucleated settlement (Gheorghiu 2001, 199). Another possible similar structure is located at Tarsa –Varful Strain (635).

In other cases at lower altitudes, only one house has been noted, which supported inclusion within this category of sites, without firm indication of a larger settlement. At Saracsau (324) a late (La Tene III) Dacian house of unknown shape or size (at least 2m by 0.40m) was probably built of wattle and daub. Surprisingly for a presumed lower-status class of settlement, it had hidden under its floor eight brooches (4 large and 4 small), one brooch pin, three necklaces, four bracelets and six finger rings of silver in a ceramic pot (Moga and Ciugudean 1995, 164). A Dacian sunken house with an inventory of Dacian and Celtic(?) ceramics, one glass bead and an iron arrowhead has been noted also at Vintu de Jos (407) as a chance discovery without other indications of a further settlement. At Ardeu, one house was discovered and excavated in similar conditions due to modern road works. It was located outside the area supposedly enclosed on the Cetateaua Hill, at a lower altitude, and the dwelling comprised a surface house provided with a hearth and two storage pits.

At Orastioara de Sus-Carpinis (595), in the vicinity of the Roman fort, a raised terrace/platform of 60 by 78 m, where small trial excavation revealed burnt materials and Dacian pottery fragments, could

have hosted such an individual farmstead, perhaps extending in the area of a neighbouring plateau (Gheorghiu 2001, 177). In the Gradistea Muncelului area at Comarnicelul Cetei-Curmatura Comarnicelului (530), 2 terraces are located near the top of the hill, covered in dense vegetation, with traces of settlement (towers or houses) and traces of burning (Gheorghiu 2001, 208). Other traces of one building were noted nearby, at Sub Cununi (538). At Valea lui Brad (620) the remains of a timber construction with stone foundations were discovered, with two rooms where a large quantity of fragmentary pottery, especially large storage vessels, seem to indicate a possible ancillary storage building of an individual homestead (Gheorghiu 2001, 191). At Aninesului hill (site 640) two terraces with traces of Dacian occupation could testify to another settlement of this type (Gheorghiu 2001, 207). Finally, at Cioaca cu Frasini (628) remains of Dacian pottery and burnt layers could indicate another small domestic dwelling (Gheorghiu 2001, 206). Other possible examples could be indicated in several other locations, with evidence for possible workshops, but without any indications of a larger settlement, such as at Balomir (417), Federi (435), Ohaba Ponor (460) Sinpetru (496), possibly Cetea (144) and Gradistea Muncelului - Gura Tampului (621). Finally, two examples of inhabited caves with Dacian material were discovered at Federi (Coasta Vacii and Gura Cocosului), but the character of occupation has not been established precisely. They are, however, more likely to have been inhabited by a smaller rather than a larger community, perhaps as a seasonal or temporary shelters.

From all accounts the forms of settlement already presented seem to have constituted the base of the Dacian settlement hierarchy. In what it follows, attention will be directed towards those types of settlement with higher social significance and more complex functions.

1.3. Tower-houses

Towers are a very special category of site that have traditionally been taken into consideration as parts of defensive systems. In a few cases, exclusively where they were located within hillforts, their potential as accommodation for the elite members of Dacian society (garrison commanders) has been fully recognised (Costesti with two different examples, Blidaru and Capalna each with one example; outside the study area one such structure is documented at Tilisca where there are 2 examples within the enclosure, as at Costesti-Cetatuie).

Costesti-Cetatuie (figure 4.6) is so far the only example within our study area with two such tower-houses. One of them was 17.50 by 13.20 metres (12.50 by 8.20 internally) while the second was of 13.60 by 13 metres (8.60 by 8 internally). The tower-houses at Costesti-Blidaru (figure 4.7) and at Capalna were square, with one side of 7.60 and 9.50 metres (6.04 internally) respectively. The building technique of the known examples is unitary with small variations. They were built in *murus Dacicus* technique up to a height of about 2 metres where the wall was probably continued in brick bonded with clay to a possible height of 5-6 metres. Roofing was made of tiles (e.g. Costesti-Cetatuie) or more often wooden shingles (e.g. Capalna). The access to the upper storey was provided

by either external stone stairs or by inner wooden stairs. No structural features have been discovered inside, whether from stairs or posts, so it is thought that the upper end of the stone wall would have supported the flooring of the upper storey (e.g. Capalna, where special holes to support the timbers have been dug into the stones of the upper row). Excavation has revealed significant archaeological material in the lower room, which would have been primarily used for storage (Glodariu 1983, 27-9). The origin of these buildings is uncertain. So far they constitute the only type of buildings with an upper storey, although, in a more humble form, a similar division of space was supposed in a single example of a circular timber house from the civilian settlement at Gradistea Muncelului-Dealul Gradistii (figure 4.1). There the dimensions of the collapsed walls indicate the possibility of 2 storeys, while in the lower undivided area the storage function was indicated by the discovery of a large storage vessel -'chiup' stamped around its rim with the words "DECEBALVS PER SCORILO" (Glodariu *et al.* 1996, 98-9 and see below).

But similar structures with stone wall/*murus Dacicus* have been located around the sites especially in the Orastie Mountains (primarily Costesti-Cetatuie and Costesti-Blidaru, at Luncani-Piatra Rosie and in the wide area around Gradistea Muncelului), but also at Craiva-Piatra Craivii. Some are located at only a short distance from the hillforts, while others were found in more remote locations, although still in dominant positions. This, along with the special building technique, seems to be the basis of their previous interpretation as defensive structures. They were largely subjected to surface survey only and, therefore, could not provide ultimate proof as to their character. But the plan of the tower from Poiana Pertii reveals sufficient morphological resemblance to those from hillforts to argue in favour of a similar function (Gheorghiu 2001, figs. 59, 2; 59,3 and 60).

The placement of enclosed settlements on dominant positions within prehistory does not necessarily indicate exploitation of the defensive attributes of the topography. Simple display of social status is considered more and more to be the reason for such locations and for architectural monumentality of the hillforts (see for example Hamilton and Manley 2001). The same is accepted, for example, in the case of Scottish brochs or duns (Parker Pearson *et al.* 2001, 127); although geographically remote from the Dacian context, their importance for this study lays in their function as an architectural reflection of social attitudes of the elite. A similar expression was argumented by Trump (1991) for the case of the Sardinian *nuraghi*. From this perspective, the brochs/duns or *nuraghi* provide a reasonable analogy for the Dacian tower-houses. Further analogies come from the fact that in some cases brochs or duns form nuclei for a surrounding village settlement (Parker Pearson *et al.* 2001, 133) as primary evidence seems to indicate also at several of the Dacian towers (see below).

In the same vein, the use of the *murus Dacicus* itself is believed to be an indicator of social status (see also Lockyear 2004). In sites where excavation has taken place it was observed that the examples of watchtowers in the hillforts were wooden, four-posted, roofed structures, very different altogether from the *murus Dacicus* tower structures. Therefore, despite being described as elements of the defensive-surveillance system, three of the four towers in the vicinity (on the same hill) of the main settlement on Gradiste hill identified by surface survey are possible examples of this category of sites. These three towers were located along the access route towards the main settlement (one at

800m from the bottom of the slope, a second at further 1500 m and the third within the civil settlement itself, just 100m west from 'Tau' area). Only the fourth example, located in the valley at the beginning of the path towards the settlement, which was built in timber is in any way analogous with watchtowers from Capalna and Banita (see below). Moreover, in a considerable number of cases adjacent structures indicating more extensive ancillary settlement were present. If the *murus Dacicus* towers had a military role, such ancillary buildings could perhaps have stood in the way when attackers had to be repulsed and would have proved to be an unnecessary burden for the warriors in the tower. Also, if defensive, the towers would have been serviced by garrisons present on only a temporary basis (for variable lengths of time) which would have been less conducive to emergence of some kind of civilian settlement outside. Therefore, the character of the towers is interpreted here as more likely to be residential than defensive, and therefore as elite houses with a certain degree of status display.

No traces of settlement have been discovered in the immediate vicinity of the towers attested in the Costesti area -Poiana Chisetoarei (604), Paraul lui Todirici (606 -2 towers), Sesul Ciorii (602); at Gradistea Muncelului-*Sarmizegetusa Regia* (two out of the 3 stone-built towers, located at 800m from the beginning of the access route towards the main settlement and at a further 1500m further east along the same route) and Fata Pustaiosului (617); and at Tirsa -Terasa lui Mihu (637 -one, possibly 2 towers) and La Vami (638). In one case at Costesti –Poiana Chisetoarei, at the foot of Blidaru hill, a large water reservoir was discovered some 100 metres from the tower, and on Gradiste hill at Gradistea Muncelului a tower is located at a similar distance from water installations and reservoir from the 'Tau' area. The list of examples where traces of occupation outside the towers include in the Costesti area: Ciocuta (599), Cetatuia Inalta (600 - 1 or 2 towers), Platoul and Curmatura Faeragului (601 –3 towers) and Poiana Popii (601 – one tower), Poiana Pertii (603), Muchea Chisetoarei (605 - 4 towers), Muchea lui Todirici (607 - 2 towers) and perhaps at Curmatura Tocaciului (608). In the area of Gradistea Muncelului, such sites were recorded at Gradiste hill (the tower near Tau which is effectively within the main settlement), Magureanului Hill (622), Anines-Garbovu confluence (641), Aninesul Hill and Lunca Nastii (539) and Cocos Hill (537) and possibly at Varful lui Hulpe (531- 2 towers). In some of these cases, the existence of an outer associated settlement is indicated by further terracing works as at Costesti –Muchea Chisetoarei and Muchea lui Todirici (5 terraces) (Gheorghiu 2001, 65). Artefactual evidence, mainly pottery can also be present along with daub/plaster, ash or burnt layers which were indicated at Costesti –Poiana Pertii, Gradistea Muncelului in the points Magureanului Hill, Aninesu-Garbovu confluence and on the Aninesul Hill. At Costesti-Cetatuia Inalta, traces of iron slag have been found associated with the remains of at least one tower, indicating the presence at the site of metallurgical activity, possibly in a workshop of the 1st century BC-1st century AD. The traces of settlement around the towers from Costesti –Faeragu indicate certain elaboration, with the provision of an aqueduct through ceramic pipes and an ancient road still preserved, but these could be the result of its proximity to the Costesti-Blidaru hillfort. Much like in the case of those located within hillforts, the plan of these constructions is square/rectangular, with sides of some 8-15 metres. The construction technique of these towers is similar to that used for the tower-houses located within hillforts, a combination of a *murus Dacicus*

base and ground floor, and with elevation/upper storey of timber (Costesti-Faeragu) or brick with some evidence of plaster/daub. The roof was made of tiles at Costesti-Platoul Faeragului, but where such evidence is lacking, wooden shingles are supposed to have been used (such as for example at Curmatura Faeragului).

1.4. Fortified sites: hillforts and "fortified settlements"

Within prehistory the most common way to define and defend the area of the settlement was by digging a ditch and using the excavated material to build a bank or rampart which may or may not have been surmounted by a timber palisade. The evidence for defensive ditches shows that they had variable dimensions. In the Hallstatt period they reach 9m in width (e.g. Subcetate), but most often they were between 3 and 6.5 m, with a depth of up to 4m (Vasiliev 1995). In the La Tene period the general size increases to 2-30m in width, with depths up to 7m (Glodariu 1983; Zanoci 1998). Stone walls appear only in the Late Iron Age, in the last phase of the Dacian kingdom before the Roman conquest, though at some of the fortified sites (Cucuis, Campuri Surduc-Cetateaua, possibly Bretea Muresana-where the eventual existence of an enclosure was supposedly destroyed by modern intervention, see figure 4.10) they were still absent. In some cases it has been argued that enclosure/fortification has been only partial, because the surviving rampart and ditch has been used to restrict access only on the most accessible slope (promontory type fortifications). This system has been observed in the first phase at Costesti-Cetatuie, where the original promontory-type hillfort with earth rampart-ditch system on one side evolved into a contour hillfort, and *murus Dacicus* was partially introduced later following the inner part of the southern and south-eastern enclosure from the second phase. A chronological evolution could also be proposed at Capalna where the rampart and ditch was only partial (promontory type), but the walled enclosure ran all around the site again following the contour line. Therefore, it is possible that sites like Cucuis, Campuri Surduc-Cetateaua or Cozia-Piatra Coziei had also been enclosed, though perhaps with wooden palisades, and this leaves the discussion concerning partial or total enclosure of the Dacian fortified sites still to be clarified by further research.

The fortified sites of late Iron Age date -hillforts and fortified villages- have traditionally benefited from most attention, since they are the most striking feature within the Dacian archaeology, as they probably were within the pre-Roman settlement pattern. Unfortunately, they have usually been approached from an exclusively politico-strategic perspective to the detriment of analysis of their politico-administrative or economic functions as parts of a general settlement pattern (Glodariu 1983, Gheorghiu 2001). Since both the hillforts and the fortified villages have similar sizes and locations, the boundary between the two categories, admitted to be very faint, has previously been established in terms of their internal structure. Glodariu (1983, 50) defines the 'fortified settlement' as a type of fortification which permanently hosts the population of a village, while the 'hillfort'/citadel is the fortification located in the vicinity of one or several villages, destined exclusively to the permanent use of a (political/military) leader and of a garrison. He identifies a third type of fortified site, also of exclusively military-strategic purpose, where the occupation was only temporary and which, if real,

would not relate to the subject of the present study. A significant density of hillforts has been identified within the study area, especially in the Orastie Mountains (*Sarmizegetusa Regia*; Varful lui Hulpe; Costesti-Cetatuie and Blidaru; Luncani-Piatra Rosie; Banita) and elsewhere (Deva -figure 4.14, Cugir -figure 4.9; Capalna; Craiva and according to Gheorghiu 2001, other possible examples at Govajdia and Remetea), along with fortified settlements (Cucuis, Bretea Muresana, Ardeu), and even some of those temporary fortifications of exclusively strategic purpose (Campuri Surduc-La Manastire; Cozia-Piatra Coziei) (figure 4.17).

Unfortunately, the identification of sites within one category or another according to the relevant definitions is not always convincing, as either not enough research has been carried out, or the site survival (as result of medieval/modern occupation of the site or modern/ongoing damage through quarrying -see Ardeu-Cetateaua and Bretea Muresana) is not sufficient to support such a conclusion. The nature of internal features is also not always relevant. For example, at Cugir (figure 4.9) contradictory opinions have been expressed over the nature of the site, as military (Glodariu 1983, 96) or as a fortified settlement (*dava*) (Ciugudean and Moga 1995, 87-8). The nature of the houses, of the usual sunken or surface type, lends support to the latter opinion and, without the presence of some stone enclosure and evidence of rich burials to indicate the presence of the elite, probably this site would have been classified as a fortified settlement. Therefore, although architectural differences are undeniable, such definitive differentiation in their functions would be excessive.

To the known examples we can add a new site possibly belonging to this category. This is located at Cigmau (Figure 4.5) and was discovered through aerial reconnaissance in the summer of 1999 at the eastern end of the Turiac (Cetate) plateau. Later in the Roman time the site was overlain by the construction of the auxiliary fort and a set of related buildings (probably the *thermae*). The site consists of an oval-circular enclosed area of 0.53 hectares (some 105 by 65 metres in diameter) delimited by a multiple rampart and ditch system some 26 metres wide. The ditches and ramparts are still surviving well on the eastern side along a segment of some 40 metres, where a set of 3 ramparts and ditches has been identified. Another sector on its western side was visible as parchmarks on aerial photographs from the summer 2000 and subsequently recognised on an earlier geophysical survey combining magnetometry and resistivity survey (data made available through the Deva Museum), which could be mapped therefore for some 65 metres. However, on this side the visible enclosure had only 2 sets of ditches. Although it is possible that the third rampart and ditch had not run all-around the site, it may have been located further towards the centre of the plateau, since the western side the site would not have benefited from the topographic advantage of the slight slope available on all the other sides. The builders were clearly aware of this fact, since on western side both visible ditches were considerably larger than on the eastern side. This identification is further supported by the discovery of some Dacian ceramic fragments underneath the remains of the *principia* of the fort during excavations (information A. and E. Pescaru). Although both the northern and the southern sector of the ramparts are not clearly visible because of the dense bush vegetation cover, it is reasonable to assume their presence according to the layout of the features. About two-thirds of the western area of the enclosure has been severely affected by the construction of the Roman fort. The eastern ditch and rampart of the Roman fort had cut straight through the earlier

complex and the area inside the fort had levelled the western ditches and ramparts of the Dacian enclosure along with its entrance, of a type similar to the earliest entrance of Costesti-Cetatuie hillfort (au chicanne). None of the internal features of the site were visible from the air because of the nature of the vegetation (small dense bushes and tall grasses) which could only reveal the much stronger signal of the buried Roman stone buildings located immediately outside the fort.

The chronological interpretation of the site as Dacian is further supported by other previously reported discoveries from the area. Gheorghiu's gazetteer (2001, 28 and 37, under Cigmau and Geoagiu) mentions in this location "bronze household objects" and "iron age coins", including both bronze and some 70-80 silver without providing other details, although she does not exclude the possibility that one of the coins is Celtic (Biatec type). There are also mentions of an antiquarian reference to an undated -potentially Dacian- earthwork enclosure on the Turiac plateau. It is unlikely, though, that this account refers to the circular enclosed site described above and very probably is a reference to the Roman auxiliary fort, whose remains were probably far better preserved at that date. Further excavation and survey should be able to provide a closer dating of the site, along with further insight into the internal organisation of the settlement and the character of the occupation. Also, there is a need to clarify the real extent of the site, since there are clear indications of finds outside the enclosed area on the Turiac plateau itself (the ceramic fragments under the fort's *principia*) and perhaps in the neighbouring area (the bronze objects and the disparate coins). Until then, we can reasonably interpret the site as a small hillfort of Dacian time, probably without a *murus Dacicus* enclosure.

The shape and size of hillforts are not always easy to define. At Deva-Cetate hill (figure 4.14) or at Craiva –Piatra Craivii, later use during the Middle Ages and early modern times has damaged the site and it is impossible to reconstruct the layout and extent of the Dacian occupation. However, whenever visible, the plan and dimensions were variable. They are generally determined by the available topography, despite huge efforts to improve it through flattening and terracing the hilltops. Most of the time curvilinear arcs of walls just follow the line of the terrace (contour enclosures), delimiting more or less organic shapes (Costesti-Cetatuie -figure 4.6, Capalna, *Sarmizegetusa Regia*). In few cases, however, (Costesti-Blidaru -figure 4.7- and Luncani-Piatra Rosie) the line of the walls is highly rectilinear in between square-rectangular towers, and perhaps a similar tendency is revealed also by the walls connecting towers 3 towers on the S side of the Costesti – Cetatuie hillfort (figure 4.6).

In most cases the stone walls used as hillfort enclosures were made using *murus Dacicus* (see above). Some hillforts use this technique exclusively (Costesti-Blidaru), but in most cases a combination of *murus Dacicus* and stone wall (with stones set in clay) is present (Costesti-Cetatuie, Capalna, Luncani-Piatra Rosie). Campuri Surduc - La Manastire and probably Ardeu are the only hillforts within the study area to have used exclusively enclosure walls made of stone set clay. Unfortunately, at Deva the only hint of the presence of *murus Dacicus* are some individual blocks of stone reused in later constructions.

Access to the inner area of the hillforts is through gates or towers. Gates though the enclosure wall have been found at Banita, in the late phase (second enclosure) of Costesti-Blidaru, and possibly at Campuri-Surduc. At Costesti-Cetatuie there was a gate through the rampart and palisade enclosure from the early phase. Another gate provided access through the later wall connecting towers I, II and III, immediately outside tower II to the E, which has not replaced, but merely reinforced the security of the earlier gate (Gheorghiu 2001, 57-9). At Capalna, the secondary entrance on the NW side has been made as a narrow corridor through two parallel walls, which was later blocked and used as dumping ground. Entrance through towers has been used at Capalna, Luncani-Piatra Rosie and Costesti-Blidaru (in the first phase). In general, where details are specified, the opening for the gates is approximately 2,50 m and, at least in the case of Costesti Blidaru (the later phase), is big enough to allow access of chariots or wagons (Gheorghiu 2001, 145). Probably it was possible also at Costesti for the gate through the rampart/palisade and perhaps for the larger enclosure from Luncani-Piatra Rosie. Such access is unlikely through the first entrance from Costesti-Blidaru, however, where vehicles would have been obliged to make a 90-degree turn to the right andthe inner space of the tower would not allow such manoeuvres. It was similarly difficult in the case of the entrance to the smaller enclosure at Luncani-Piatra Rosie, which was made through one of the towers and had stone steps, like the gate at Banita, although in the latter case was not made through a tower.

The enclosed space is also variable, though considerably smaller than that of the early Iron Age hillforts. The hillfort at Costesti Cetatuie is the largest, with changes in the enclosed area over time from some 15 ha to 4.9 and 4.02 hectares, but Gradistea Muncelului covered only some 1.2 hectares (subsequently enlarged by the Roman fort to 2.7 hectares-figure 1.10) and both Costesti-Blidaru and Capalna covered only 0.5 hectares. The inner space was used for a few amenities such as stone and brick tower-houses (Capalna 1; Costesti-Cetatuie 2; Costesti-Blidaru 1; -see above) and some surface timber constructions or associated hearths. In most of the cases the occupation layer has been damaged by later occupation or natural erosion. The great majority of the timber structures is represented by surface houses/barracks. At Banita and Costesti-Cetatuie, postholes from four-posted structures interpreted as watchtowers have been found towards the highest point of the sites. The remains of probably a similar structure have also been discovered at Capalna, and it is assumed that the hillfort from Gradistea Muncelului might have had one as well. Stone stairs within the enclosed space have been discovered at Costesti (2 staircases immediately adjacent to the two tower-houses), while at Banita and Luncani-Piatra Rosie the stone stairs are associated with entrances. At Gradistea Muncelului no such structures have been discovered in the area enclosed by walls, though they might have been dismantled and the stone reused during the Roman occupation of the site, but they were present outside in the surrounding settlement/sacred area. Stone towers have been constructed on the line of the walls (at the corners at those hillforts with a geometric plan), while other towers or tower-houses have been located outside, in the immediate vicinity or at a greaterdistance away (see above). Provision of storage areas with the remains of several large storage pots ('chiupuri') has been identified in the north-western tower of the second enclosure at Costesti-Blidaru (figure 4.7). Several granaries have been discovered at Gradistea Muncelului, but all of them were located outside the enclosure (Glodariu *et al.* 1996, 100-101). Inside the fortified area at Cugir were discovered surface

and sunken houses of 3rd –2nd BC and 1st BC-1st centuries AD along with numerous storage pits with rich artefactual evidence of pottery, tools and jewellery (Moga and Ciugudean 1995, 87-8). Several surface houses were located at Ardeu and a bronze anvil indicates the presence of a jewellery workshop within the settlement. At the fortification from Cucuis (some 1.8 hectares) limited excavation has revealed faint traces of one barrack (timber construction) with Dacian pottery of 1st century BC- 1st century AD, iron nails and two iron ploughshares.

Although the association of the fortified sites with variable traces of open settlement is frequent, and determined their classification as a particular type of settlement in this study (see below), some of them have no known associated open settlement in the vicinity. Campuri-Surduc (la Manastire) is a promontory fort originally thought to have been destroyed in the mid 1st century BC after the death of Burebista, but reinterpreted as destroyed in Trajan's wars. It does not seem to have any settlement in the vicinity other than another smaller enclosure on the neighbouring Cetateaua Hill of unsure nature. Based on their known enclosure dimensions (37 by 22 m for La Manastire and 25 m diameter for Cetateaua) they are likely to represent individual enclosed/fortified settlements (homesteads). At Bretea Muresana (figure 4.10) there are no indications of settlement nearby, although the site itself is normally considered to be a 'fortified village' which could perhaps explain settlement nucleation outside its enclosure. However, the same was thought to be the case at Ardeu, but there at least one house was located outside the enclosure (see above). Similarly, Cucuis, Ardeu or, indeed, Cozia – Piatra Coziei, normally interpreted as of similar nature to Bretea Muresana, are all surrounded by other foci of Dacian occupation sometimes spread over a considerable area in the valley or on the surrounding hills (e.g. Cucuis). Cugir (figure 4.9) is another example of a fortified site without known settlement in the immediate vicinity, but some Dacian traces have been located on the top of a hill at some distance away to the south-east, perhaps indicating a solitary homestead.

It is more difficult to decide on the character of settlement around the fortified sites at Craiva, Costesti-Blidaru, probably Gradistea Muncelului-Varful lui Hulpe, and perhaps Piatra Rosie, where the remains indicate only tower-houses in the immediate vicinity. At Craiva the settlement extended outside the supposed enclosed area of the site on 11 man-made terraces supporting several tower-houses and sanctuaries. The terraces and tower-houses made use of *murus dacicus* in a local variety (see above), but no mention is made of humbler, timber-built domestic structures (Moga and Ciugudean 1995, 83-4 with bibliography). The finds consisted of pottery, including painted fragments, iron tools, jewellery, imported goods. Coins discovered throughout the settlement included 6 Republican denarii (88-70 BC), although earlier examples consisted of two Dacian coins, a silver example from the end of the second century BC and another silver imitation of a Phillip II tetradrachm found in the same area where a deposit of three swords, three spear heads and a buckle was discovered at an earlier date. They all support the interpretation of the site as a late-Dacian elite community, supposedly *Apoulon*. The analogy with Costesti-Blidaru comes to mind, although at Craiva the towers seem to cluster more tightly around the fortification and beyond the cluster of towers in the valley at Blidaru was the widespread settlement from Costesti. Finally, at Piatra Rosie no traces of settlement potentially associated with the citadel are known other than a few towers incorporated within the larger enclosure.

1.5. Fortified sites with additional settlement

Most of the fortified sites in the area had settlements located more or less within the immediate vicinity (at Ardeu, Banita, Capalna, Cucuis, Costesti, Deva, *Sarmizegetusa Regia* –figure 1.10, Varful lui Hulpe) (see figure 4.17). According to the reports these settlements vary a great deal. At Ardeu – Cetateaua the only traces of occupation on the slope of the hill below the supposed area of the enclosure are provided by the discovery in a rescue excavation of a Dacian surface house provided with two storage pits and a hearth. (Gheorghiu 2001, 17). Even fewer indications are recorded in the literature on the settlements at the bottom of the hills where the hillforts at Banita and at Capalna were located. Two artificial terraces with archaeological finds are mentioned at Banita, though it is estimated that the settlement was largely destroyed by the modern railway (Glodariu 1983, 82) while at Capalna settlement traces of supposedly isolated constructions were also identified in the valley along the Sebes river (Gheorghiu 2001, 25). Outside the fortification at Gradistea Muncelului - Varful lui Hulpe extensive ancient terracing with traces of occupation has been identified, two of which seem to have been occupied by tower-houses, but the lack of systematic research on the site impedes other estimations.

By contrast, evidence of extensive settlement in the vicinity at Deva, Costesti, Cucuis, and *Sarmizegetusa Regia* was recovered. They were spread over a larger area (Deva, Costesti, Cucuis) or more compact in nature (*Sarmizegetusa Regia*). Also, at *Sarmizegetusa Regia* and Costesti they seem to be quite extensive and elaborate in terms of existing amenities. At Costesti (Gheorghiu 2001, 65) a large number of significant discoveries has been recorded in multiple locations along and on both sides of the Gradistea/Orastie river (although mainly on its right side). They extend from the foot of both the hills bearing the ruins of the two hillforts (Cetatuie and Blidaru) and downstream towards Ludestii de Sus, in the village- under the modern buildings and their gardens, or in arable fields. The archaeological material consists mainly of Dacian ceramics and burnt layers, whether from hearths or burnt timber buildings, but other materials included bricks, roof tiles of Hellenistic type, ceramic water pipes, daub, storage pots, and burnt cereals. Interestingly, in one location fragments of a large ceramic *tessera* floor have been discovered (Gheorghiu 2001, 189). Most of the discoveries came from surface surveying and chance discoveries of different date over the past centuries, and the several coins reported (2 scyphate coins of Hunedoara type, one Greek drachms of Dyrrachium and one imitation) were not related to specific archaeological contexts. However, in a few places small-scale excavation revealed remains of surface timber houses of rectangular shape. One such house has been unearthed at Laz, some 300m away from the Gradiste/Orastie river, on a raised platform 16m in diameter, dated to the late 1st century AD, with fine pottery (including one imitating a bronze model), iron artefacts and carbonised wheat and millet. Similar remains are presumed on a second nearby platform 24-26m in diameter. Another Dacian house was discovered close to Valea Stanisoarei in an area with extensive Dacian occupation traces, and other discoveries were made in the village, near the train station, under the school or under several private houses, and at 'Gruiul Negru' some 200-250m east of the church, consisting of groups of timber houses. The remains of a

Dacian pottery kiln were discovered near Valea Stanisoarei, and closer to the source of that stream the presence of 7 iron ingots associated with the usual Dacian pottery and remains of burnt wood and clay indicated the probable presence of an iron workshop (Gheorghiu 2001, 188). To these discoveries we could also add the remains of the largest cluster of tower houses located in the immediate vicinity of the two hillforts (see above). In a simplified interpretation it looks like the hillforts were the centres of the Costesti landscape, surrounded in the immediate vicinity by several tower-houses, some of them with their own traces of ancillary structures, and at greater distance away (mainly lower downstream and on the opposite side of the river) by a wide zone of scattered occupation.

In many respects a similar inhabited landscape revealed by a 'cluster' of discoveries seems to have been located at and around the modern town of Deva (without traces of tower-houses). Little survived from the Dacian hillfort on the Cetatii hill (figure 4.10), but more substantial archaeological traces come from the occupation outside in the vicinity. Traces of settlement have been discovered on lower terraces of the hill and at its foot, including a pottery kiln dated in the 2nd-1st century BC (Marghitan 1970(b) in Lockyear, 2004). Traces of settlement consisting of ceramic fragments were noted also at Horgos and in the town, to the south-west of Cetatii Hill, and most extensively near the Ceangai cemetery and on the eastern lower terraces of the Bejan Hill. Higher on that hill the andesite quarry (figure 4.15) has provided large quantities of stone used, as recent petrologic analysis had proven, in the monumental constructions at *Sarmizegetusa Regia* (Marza 1997 in Lockyear 2004). The remains of the settlement itself included Dacian pottery and animal bones, one millstone and even 2 Greek silver coins of Dyrrachium. One pottery kiln was also found, preserved to a height of 0.8m, with Dacian material dated to the 1st century BC. The importance of the area within late pre-Roman times is further confirmed by the discovery in the vicinity of several coin hoards (figure 4.19). One from Bejan forest, found in 1913, had 'several thousands' of Greek drachms of Dyrrachium and Apollonia and Roman Republican denarii. The hoard from Colt hill had a similar composition; a third hoard discovered between the hills of Pai and Sarghei contained exclusively Republican denarii; another hoard, discovered between the hills of Mal and Colt in 1848 had also accumulated Republican denarii, along with some local imitations. A hoard accumulating Greek and Roman Republican silver (including 2 dated 85-75 BC), one of Illyrican coins and a third (of 400-500 pieces but largely lost) of coins of Dyrrachium, and a number of Roman denarii (118-82 BC) are also mentioned among discoveries from this area, but without further details (Gheorghiu 2001, 35-6).

Discoveries of Dacian nature have been made in multiple locations around the fortified site at Cucuis-Golu hill, once again over a large area. They consist of several artificial terraces with Dacian ceramic fragments (at 'Bocsitura') or traces of timber structures in association with pottery (at 'Gruiet' and 'Poiana Stanii') or only scatters of pottery fragments (Berianul hill, Dealul Suciului, Pietrele Caprei). Sometimes the remains are accompanied by iron tools (large tongs at Muchea Cetatii, an iron hatchet at 'Padesul de Sus', and an iron axe at 'Glajerie', both with longitudinal sockets) (Gheorghiu 2001, 33).

The most important settlement of all associated with a hillfort has been located outside the hillfort at *Sarmizegetusa Regia* (figure 1.10). The 'civilian' occupation covered over 100 artificial terraces of

variable size and shape dug mostly into the southern slope of the hill (only a few terraces have been discovered on the northern side, towards its upper part and near the enclosure wall of the hillfort). Very few have been the subject of more detailed research. The terraces often appear in clusters scattered through the woods rather than a continuous spread (Lockyear 2004). This gives the site the same scattered-layout appearance characteristic of other sites, such as Deva or Costesti, previously interpreted as semi-compact rather than compact settlement like *Sarmizegetusa Regia*. The settlement was divided into western and the eastern areas (according to their location in relation to the hillfort), although much of the eastern area was occupied by sanctuaries and related amenities. Most of the terraces seem to accommodate buildings of domestic character, often one house and one ancillary building used normally for storage (granaries) per terrace (Gheorghiu 2001, 75). The houses themselves were also built as surface structures (which is the norm in the mountains) and varied in plan and size. Most of the buildings resemble the circular structures from Fetele Albe, Meleia or Rudele (see above and figure 4.1). An example of a one-roomed house (4.30 by 2.75 metres) of 1st century AD on the Terasa Mica had dimensions and a style very similar to the sunken-floored houses, and was provided with a hearth and 3 grain storage pits, one of which was located under the floor inside the house and the other two outside a short distance away. There were also examples of rectangular houses built in a similar technique to the circular houses, with one or multiple (2-3) rooms. The storage of food and other items (tools, etc) was largely provided by 'granaries'. Two of them (one in the 'western quarter' and the other on the IX-th terrace in the *area sacra*) contained significant quantities of wheat, millet and pulses, and were perhaps big enough to indicate their use by a larger community (Gheorghiu 2001, 170-1). It is unclear whether they supplied the personnel within the religious centre or another (larger) community. Two other smaller granaries were found just above the *area sacra* (on terraces VII A and VII B). This massive concentration of stored grain in the area could perhaps indicate some institutional control/administration of the food supply, even though individual granaries were also available.

Finds are in general rich, particularly in those buildings which have ended by fire, and included iron tools and fittings, a large variety of pottery, including Dacian painted ware decorated with geometric, floral and animal representations, coins and other various artefacts. Inside one building was found a 'medical kit' consisting of five small vessels, bronze tweezers, an iron knife and a plaque of 'volcanic ash' in a wooden box with an iron handle and bronze straps. In a different building was found a large conical storage vessel (1.25m diameter and 0.7m in height). Its lip was stamped four times with the words 'DECEBALVS PER SCORILO', providing a strong link between Gradistea Muncelului and the last Dacian king (Lockyear 2004). Several of these houses proved to have hosted workshops (several metallurgical workshops, including one for minting imitations of Republican denarii). Other workshops for pottery and glass production or carpentry are supposed to have existed on the basis of the presence of tools and end products. In the eastern settlement several terraces in the immediate vicinity of the hillfort hosted a large *area sacra* with several sanctuaries. Nearby an open paved area is supposed to have served for public meetings (agora? – Gheorghiu, 2001 76-79). One stone paved road (possibly roofed/portico?) leading from sanctuaries to the hillfort was partially extant and stone stairs have been found (Glodariu *et al.* 1996, 86). Evidence for water management

(supply and drainage) consisted of installations for catching several natural springs located lower on that hill and distributing the water through ceramic pipes laid on clay or even andesite slabs. At Tau two springs, directed through pipes to a wooden decanter/purifier with a capacity of at least 3,000 litres and provided with a lead filtering pipe, seem to have supplied water for various constructions within the settlement. Another spring within the religious area, with its installation severely damaged, supplied some of the sanctuaries. A big reservoir (cistern) of a date close to the Dacian wars has been discovered to the south of the fortification. Bordering the roads, especially within the *area sacra* and leading towards various amenities within the *area*, limestone drains have been discovered. These various indications of large-scale water management give some indication of the sophisticated level of technological development which had been attained.

2. Location of settlements

In the light of previous analyses, a striking feature of the settlement pattern in terms of settlement location is that very few of them are to be found at lower altitudes (figure 4.18). Gheorghiu (2001, 88-9) notes:

> "Among the topographic locations of the middle Mures valley, the floodplains were systematically avoided by the Dacians when choosing a place to found a settlement. The situation is normal because there was the maximum danger of flooding. There were cases, a few of them it is true, when the boundary zone between the floodplains and lower terraces of the valley was preferred, probably out of the necessity to be close to the rich agricultural fields and to the river Mures, since this represented an important artery of transport for goods. Such are the settlements from Turdas, Vintu de Jos, Vurpar, Blandiana and Saracsau." (author's translation)

This view is reminiscent of an early theory on the settlement pattern of the British Iron Age, dating from a period prior to the introduction of systematic modern surveying, especially aerial photography. According to Fox (1933, 82) the lower zones of the Iron Age Britain were hopelessly damp "where estuary or harbour was fringed with forest, the mudflats and beaches were deserted and no trackways led inland" and that these "bad lands were crossed only when unavoidable, and by the narrowest gaps". Since Fox's time, however, a series of new sites/enclosures have been revealed in these lowlands, including some with a morphology closely related to the probable use of areas more exposed to flooding as pastures and for animal breeding (e.g. funnel-entrance enclosures).

When comparing the location of the settlements identified so far with modern land use in the mid-Mures valley (figure 4.18), only some 28-45 of the 146 possible Dacian settlements could have been located in areas currently affected by ploughing (17 of them were located in uncertain locations and/or within the area of modern settlements). It is, therefore, likely that the state of preservation of the sites would have strongly biased their identification. Indeed, if Dacian sites were not overlain by a fairly thick later deposit (whether human or natural) it is likely that the archaeological contexts

would have been severely damaged and even completely destroyed by the modern activity (see discussion in chapter 1). Preservation and survey methodology can be held responsible for the bias affecting traditionally accepted differences in the Iron Age settlement pattern between lowlands and upland areas in Transylvania, as in the Upper Tisa valley (http://minerva.york.ac.uk/catalogue/proj_data4/UpperTisza_ba_2003/html/home.htm; 1, 1.2.5.2) and elsewhere in Continental Europe (see above). At least one of the sites discovered through aerial photography, the hillfort at Cigmau (figure 4.5), challenges many of the traditional opinions concerning settlement location, as for instance the location of hillforts in the uplands or the lack of settlement on the right bank of the Mures in that particular sector (Gheorghiu, 2001).

The present study has tried to address the problem by considering every artefact discovery that included ceramics as a potential settlement and, therefore, including them in the list of settlements. However, this operation has still left at least two lowland areas with ideal climatic and topographic conditions for settlement and agriculture without any apparent settlement (see figure 4.18). The first covers largely the middle section of the Strei valley and all its lower left side towards Deva where only one possible settlement is attested in Calan area. The second covers the southern side of Mures between the Orastie and Pianu rivers, where no settlement traces have been recorded other than Orastie-Pemilor Hill (576) hill and Vintu de Jos (407), although some settlement could be related to the possible extraction of gold at Pianu de Sus (see below) at the edge of the lowland. In both these regions (especially in the latter) jewellery and coin discoveries have been recorded, scattered or in hoards, which indicate at least some elite control over the area, although only 12 hoards were found outside a buffer zone of 2 kilometres around any settlement (figure 4.19).

The analysis of the distance between the settlements reveals a further discrepancy of settlement density between the Orastie Mountains and the rest of the territory (figure 4.17). In the Orastie Mountains numerous settlements cluster at distances of less than 1 kilometre from each other, while outside this area the settlements are scattered normally at 3-5 and sometimes even more kilometres away. Of course, the map distances are increasingly misleading in representing relative distances on the ground in areas of very fragmented relief as in the mountains, but even bearing this in mind, one cannot stop noticing the unusual density of habitat without precedent in any other Dacian areas whether within or outside the study area. If the situation is real and not artificially created by the bias of the current methods of survey, a possible explanation could be offered by the very late chronology of the sites, including *Sarmizegetusa Regia*, and would hint at political and religious factors for their emergence.

The spatial distribution of settlement, as much as it is currently known is, therefore, hardly normal. Moreover, despite the importance of the Mures as a communication and trade highway with the plains from the west at all times during history, only 32 of the settlements are located within a buffer zone of 5 kilometres from the Mures. Indeed very few fortified sites are located so close to the Mures (Campuri-Surduc La Manastire and perhaps Cetateaua, Bretea Muresana, Cozia-Piatra Coziei, Deva and Cigmau), and with one exception (Cigmau) they are all located in the Mures Corridor area. Deva was perhaps the single most important site (hillfort/citadel with extensive surrounding open

settlement) in the immediate vicinity of the main river. Otherwise, water (natural springs, streams and minor rivers) was available everywhere within a fair distance and it did not act as a stress factor in relation to the distribution of settlement into the wider landscape.

The preferred location for fortified sites within prehistory was normally on hills or high promontories where natural topography allows minimum effort in building defences. This trend is not particularly related to late prehistory, but was manifest throughout prehistoric time (Hanson and Oltean, 2000). The preference for lower or higher altitudes varies from one period to another, but all periods seem to show a special care for the maximum use of the strategic and defensive potential offered by the terrain. While late Neolithic settlements generally prefer the lower river terraces, the later Bronze Age or Iron Age defended settlements manifest an increased preference for higher and, therefore, more inaccessible positions. Tribes of the Wietenberg culture in the Bronze age used hills with steep slopes, preferably on all sides, or high terraces or plateaux margins which were naturally defended on at least one side (Rotea 1993, 36). Early Iron Age hillforts/fortified settlements are also placed in dominant positions (at about 300-500m above sea level, at some 100-150m higher than the large flat fields below), but the size and complexity of enclosures to protect large areas had already necessitated significant effort (Teleac, Subcetate and Dej - Vasiliev *et al.*1991, 19).

Dacian hillforts develop this concept even further, with their location on inaccessible hills deep in the mountains. The hillforts bordering the edge of the lowlands are located at altitudes of under 500m, (Deva 371m, Cucuis 441m, Cugir 480m). Another group of sites are located deeper into the mountains, but still at under 800m (Costesti-Cetatuie 540m; Capalna 610m; Cozia 686m; Costesti-Blidaru 705m; Ardeu 711m), but there are sites going above this altitude (Luncani-Piatra Rosie 823m, Banita 904m) reaching 1000m (Gradistea Muncelului-Dealul Gradistii 1000m and Craiva-Piatra Craivii 1083m.) Location sometimes took precedence over the availability of water supply within the immediate vicinity, and in a number of cases water cisterns/reservoirs were constructed in the vicinity. At both Gradistea Muncelului-Dealul Gradistii and Costesti-Blidaru the cisterns were located outside the enclosures, in the latter case at some distance to the east, near the towers built along the Chisetoarei Stream (site 604) (Gheorghiu 2001,185). The well within the inner enclosure at Luncani-Piatra Rosie is thought to be of medieval date, although just outside it near the gate, and still within the larger enclosure, a sacred pond is thought to have existed in the Dacian period (Strobel 1998), which could perhaps have served as water supply.

The builders went as far as flattening the top of the hill if this was not naturally suitable for settlement (Glodariu 1983, 59-60; Zanoci 1998, 15- 26), by cutting topsoil and even solid rock from the hill tops and enlarging levelled areas through terracing works. Terracing is a frequent occurrence within the upland Dacian landscape (figure 4.2), especially in the Orastie mountains (Fata Cetei, Fetele Albe si *Sarmizegetusa Regia* being the most obvious examples) but also in other locations within the study area, some being indicated at Ardeu-Cetateaua, Craiva-Piatra Craivii and Cozia-Piatra Coziei. Wherever naturally flat terrain is rare they are a necessity, and in most cases constitute the main indicator of the settlement (along with scarce presence of Dacian pottery and charcoal) and, indeed, of its extent. Unfortunately the heavily forested area is one of the reasons why no systematic

work has been done so far to ensure their proper location, recording and mapping. Future GPS survey projects (at least) could provide extremely valuable information for better evaluation of the density and character of settlement in the area.

On the Gradiste hill at Gradistea Muncelului the *murus Dacicus* enclosure walls of the hillfort were built following the 1000m contour line, on a 3m wide levelled terrace cut into the bedrock. Inside the terrain was flattened over a small area only at its highest point, in order perhaps to accommodate a wooden watchtower in a similar fashion to that at Capalna, and on a further 3 terraces traces of timber constructions have been found. Outside, the entire civilian settlement was built on over 100 man-made terraces, those in the sacred area being supported by *murus Dacicus* walls of up to 12-14 m in height. Most of the terraces hosted one homestead (house and ancillary building), but some of them, especially those supporting sanctuaries, were much larger, with widths of 20-30m, even 50m and lengths of up to 200m. Other cases of terraces supported by *murus Dacicus* were identified in a number of other sites, in the open settlement from Fetele Albe-Sesul cu Branza, outside the possible enclosure at Craiva-Piatra Craivii and perhaps outside of the hillfort from Gradistea Muncelului-Varful lui Hulpe, but mostly inside the fortifications (Costesti-Cetatuie, Capalna, Banita). At Capalna the enclosure walls themselves supported the upper terraces. At Craiva-Piatra Craivii most of the11 terraces were supported not by *murus Dacicus*, but by similar-scaled walls made of large quarry stones. With the exception of Fetele Albe, the use of stone walls supporting the terraces seems to occur when these terraces had to support heavier structures (stone sanctuaries, tower-houses, etc – however, some of the buildings constructed on the *murus Dacicus* terraces at Fetele Albe were identified as sanctuaries).

The largest majority of terraces were, however, less elaborate in terms of dimensions and building effort. Few of them have been excavated and, therefore, the building technique is far from being clarified, although so far they seem to have been constructed by digging into the slope and tipping the resultant earth down-slope (Lockyear 2004). All of the known examples are proved (or assumed) to have served for constructions of various scales and functions. None seems to have been used for cultivation, although further studies may bring more light to this aspect. For the common terraces, without a supporting stone wall, the alternative ways used to prevent their further erosion and the disposal of the excavated stones - considered by Foxhall (1996) as pragmatic aims for agricultural terrace building - is unclear. Their rudimentary technique meant perhaps that it would have taken less time and effort for their construction, but it is likely that the work was still done by male labour of the individual households to be constructed on them. Also, as suggested by Foxhall, some of the charcoal discovered almost invariably on the terraces may have been produced by burning trees and bushes which had been removed and using the charcoal for sale. However, the terraces where *murus Dacicus* was used suppose a much larger effort and available labour force, along with trained specialists in construction work.

Perhaps the concern for finding the best possible locations for the settlements is the reason behind the high occurrence of sites with traces of habitation of other dates (multi-period, tell sites). 29 of the sites discussed in this chapter have traces of previous and/or later occupation within earlier prehistory

and medieval or modern times, 14 in the uplands and 15 in the lowlands. One example of a multi-period site discovered through aerial photography is located to the west of the modern town at Simeria (Figure 4.11). 2-3 pits indicate sunken houses and 4-6 others of smaller dimensions probably represented storage pits. However, the most striking feature -the partial curvilinear enclosure following the natural edge of the river terrace with one entrance- and its relationship with the other features is more difficult to interpret. It consists of ditches some 3 metres in width (doubled to the south of the entrance where the natural slope of the terrace is less steep). In the interior the narrower ditches probably of a pallisaded enclosure are still visible which turns outwards at the entrance to connect with the ditch in front of it. The finds discovered during a ground visit in 2002 included prehistoric pottery also of Dacian date, along with some Roman and later sherds, but the site plan does not facilitate the identification of different phases of occupation. A change in photographic conditions (vegetation, climate) and the application of other methods of survey geophysical and systematic fieldwalking) could provide further clarification of its character and chronological evolution. The phenomenon occurs especially in the case of the hillforts in the mountains, where site location was severely restricted by topography. At Craiva the occupation on the hilltop is attested for late Neolithic-early Bronze age (Cotofeni), late Bronze Age (Wietenberg) and Middle Age, at Cugir for Bronze Age and early Iron Age (Hallstatt), at Deva for late Neolithic-early Bronze Age (most extensively during medieval and early modern times), at Cucuis for early Bronze Age (Cotofeni), Hallstatt and Middle Ages, while at Ardeu-Cetateaua all the prehistoric main periods are illustrated by finds and occupation continues in post-Roman and medieval times. The trend is considered by Trohani (1994) as general for the Dacian area and has a much larger geographical spread.

3. ECONOMY:

3.1. Agriculture

Animal husbandry is another domain where archaeological investigation is at a very early stage. As detailed in Chapter 2, domesticated animals (cattle, horses, mules, sheep, pigs, goats) are present in artistic representations and several scenes attest that oxen and horses were used for traction (Macrea 1969, 297; Lepper and Frere, 1988; MacKendrick 1975, 99 and plate 4.26). Linguistic evidence also attests dairy production. The study of bone remains from outside the study area indicates a large predominance of cattle at most of the investigated sites (10), followed closely by pig (at 4 sites) and sheep/goat (at 1 site) (Gudea and Gudea 1999). Bone evidence from sites within the study area (Ardeu-Cetatuie and Hunedoara cemetery -figure 4.13) is mentioned, but the results of their detailed study have not yet been published. The study of the settlement pattern has not provided until now much convincing data related to the way animal farming was undertaken. The buildings of the high-altitude settlement from Meleia have first been interpreted as equivalent to the modern "stane"-seasonal animal farms, consisting of an animal enclosure and a small building providing accommodation for the shepherds and a store for produce. The interpretation at the time was based solely on modern analogy and has been challenged later (Glodariu *et al.* 1996, 161) based on the study of the related finds coming from the site, which attest a far more sophisticated economy and

possibly social status of the occupants. The authors maintain, however, the seasonal character of those buildings without evidence for daub wall insulation from this or other sites in the Orastie Mountains or elsewhere (but see below). Unfortunately, features which would provide the most convincing argument to plea for animal farming, such as the animal enclosures, are consistently lacking from all the sites, although some tools like scissors for trimming wool, or scythes ('coasa') and rakes ('grebla') (e.g. Capalna) for hay making were possibly used in the farming process.

Agriculture is recognised to make the highest contribution to the economy of Dacian settlements, even for settlements in the upper segment of the settlement hierarchy (e.g. the enclosed settlement from Arpasu de Sus outside the study area). However, as observed in previous chapters of this study, information on the territory outside the settlements and on the way cultivation fields were distributed in the landscape is largely absent. As shown in Chapter 2, there is evidence for the presence of a number of plants in the late Iron Age used for food or other purpose. Within the study area wheat, rye, millet, barley, lentil, pea, mustard, poppy and rape seeds, garlic, spinach and corncockle have been identified, along with other plants used for feeding humans and animals (see above chapter 2). Cabbage might also have been present, based on linguistic evidence. Presence of fruits is also proved archaeologically (apple seeds), or by literary sources (vine cultivation at least until the early 1st century BC when it was banned by Burebista -Strabo, *Geog. VII 3 5 ;VII 3 11*; also elderberry, blackberry , listed by Pedanios Dioskorides for curative properties along with camomile, valerian and thyme - see Vekony 2000, 80-3; Nandris 1981, 234-5). *Camelina sativa* (gold-of-pleasure) seeds were apparently burnt for lighting (Nandris 1981, 234-5). The normal assumption is that the cereals and vegetables (pulses and cabbage) were cultivated species. The assumption in the case of cereals is supported by the representations of fields harvested by the army during the 2nd Dacian war on the Trajan's Column (see above chapter 2). It is unclear whether the herbs and spices for human consumption or the fruits (apple, elderberry and blackberry) were cultivated or just harvested from their natural habitat. If vine was (still) present, it was probably cultivated.

The presence of cereal cultivation is evident from some limited archaeological evidence. Finds of agricultural tools give some indication of the practice of agriculture. At Capalna in "Obreje", in the valley a short distance from the hillfort (132) a deposit of 2 ploughshares and 7 sickles made of iron has been discovered (Moga and Ciugudean 1995, 67) and other sickles were found inside the hillfort. Another deposit of tools was discovered at Gradistea Muncelului-Valea Larga, including 6 hoes, an adze, a chisel, but this one can be related also with other activities, such as stone/woodworking or terracing. Another deposit was found on Strambu hill, south of Meleia (1 sledge hammer, one pick, 2 ploughshares, 2 hoes, 2 sickles and a scythe, 1 boring tool, 1 chisel, 1 saw and a fork). The function of these deposits is unclear. The normal interpretation of those discovered away from settlements is intentional deposition due to threat during the Dacian wars (as in the latter example), although another possibility might be ritual deposition. Further ploughshares were found, one at Alba Iulia (as a random discovery), one in the enclosed settlement at Cucuis (Gheorghiu 2001, 166) and another (possibly 2) at Piatra Craivii (Lockyear 2004), and in general the noted examples come from upland settlement contexts, whose surroundings were unsuitable for arable cultivation.

Grain storage pits were noted at Ardeu (102- outside the fortification), Cugir (218), Sebes-Lancram (341) and Sebes-Podul Pripocului (328), Seusa (13), Orastie-Dealul Pemilor (576) and Vintu de Jos (409 - 65 features indicate possible storage pits, although a number of them were probably used within earlier phases of occupation from the Bronze Age). The pits are of bucket or funnel shape with variable widths and depths. Other means of grain storage were present in form of granaries (largely at *Sarmizegetusa Regia* and in the vicinity) with pots of big dimensions ('chiup') with conical bodies and narrow rims. This type of vessel is to be found on any Dacian site and they were perhaps buried into the ground up to the level of the rim, as they were found in one of the towers within Costesti-Blidaru hillfort. The ground level of the tower-houses and bastions was used as storage space within hillforts, while in the ordinary circular timber houses the storage areas were mostly in the outer rooms. Most of the identified timber granaries/deposits have a rectangular plan (examples at *Sarmizegetusa Regia*, Meleia, Fetele Albe). A few circular single-roomed buildings without evidence of hearths inside were also interpreted as primarily used for storage (e.g. Meleia). Outside the hillfort from *Sarmizegetusa Regia*, on terrace IX just above the sacred area (figure 4.8) and in the immediate vicinity (terraces VII A and B), timber granaries of large dimensions have been identified which were extremely rich in burnt provisions (wheat, millet and peas) deposited in large storage vessels (Gheorghiu 2001, 171).

The distribution of evidence for storage facilities shows that in the lowlands only 4 sites were equipped for such a purpose (pits present at Sebes-Lancram and Podul Pripocului, also Seusa and Vintu de Jos, the latter with quite extensive storage potential). Far greater storage capacity is available, though, in the hillforts and upland settlement, in the form of granaries, pits and also storage vessels. Also, the detection through the present study of the two large lowland areas with good climatic conditions for settlement and cultivation without any apparent settlement on the middle Strei Valley and, most significantly, in the Mures valley (see above) is unexpected. Lack of settlement evidence does not so far support their alternative use for winter grazing, which would have been necessary if the upland pastures were used during summer. If, however, further discoveries validate the existing gap, this could indicate a significant environmental change at a local scale between antiquity and modern era. Until then, the northeastern half of the study area seems far more intensively used for agricultural purpose than the southwestern half.

Many discoveries of millstones (a 2-piece type, fairly similar to the Roman *meta-catillus*) at Cetea, Lopadea Veche Radulesti, Deva (one from an unclear complex and one within the settlement from Bejan hill) and Meleia, or millstone fragments (Ursici, Cozia-Piatra Coziei, and Gradistea Muncelului between Valea Rea and Valea Vartoapelor) are indicative of the extensive use of cereals in diet. This lends further support to similar conclusion by Nandris (1981) based on the study of flotation samples from various hillfort sites, which indicate a significant preference for wheat varieties. Literary sources mention vegetarianism as one of the reforms introduced into the Dacian life-style by the religious reform of Dekaineos (Strabo V 1 6; VII 3 11-13 –see above chapter 3) and support Nandris' conclusions. But since his study is related exclusively to hillfort contexts, it is not clear whether this is a general characteristic of the diet of Dacian society, or that it characterises only the upper social segment. In some hillforts sites, there is evidence to indicate the presence of animals

used for meat consumption (e.g Ardeu-Cetateaua see http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=1871; also, outside the study area, see Gudea and Gudea 1999), which could indicate that the Orastie Mountains area was possibly the most affected by the religious reform (although some animal bones were discovered at Costesti in funerary ritual context – http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=925 visited 11.05.2004).

The well-established interpretation of the agricultural process was that the population of the upland settlements (or those at the edge of the upland) cultivated the main river valleys (Gheorghiu 2001). But these settlements were located at significant distances from the areas they were supposedly cultivating, at least 10 km away (see above). The physical distance makes daily access to the fields difficult (impossible?) and it would pre-suppose the existence of seasonal accommodation in the lowlands for the spring-summer, which has not been identified so far. But the use of, arguably, seasonal buildings (see above) and the principle of seasonality have been proposed so far only in relation to animal husbandry. The idea that both animal husbandry and cereal cultivation was undertaken on a seasonal basis would have significant repercussions for the way we interpret the settlement pattern and Dacian society as a whole. It would mean that a large mass of the population spent at least 4 months each year on the move, one part into the lowlands to cultivate the fields and the other high into the mountains with the animals for summer grazing, while for the remaining 8 months they populated the settlements located somewhere at a high-mid altitude and kept themselves busy with other activities. Although probably true in relation to transhumant animal farming practice, such a scenario could represent an impractical managerial approach towards the economy in its entirety, unless supported by peaceful times and a very elaborate road and communication network, along with evidence for very large settlements in the upper-mid-altitude belt. But none of these factors seem present and, therefore, the seasonal character of settlement at least for the lowland areas involved in cereal cultivation, if not impossible, seems unlikely.

Further aspects related to cereal cultivation which still await an answer are the location of the threshing facilities and the method of transportation of the produce into the upland settlements. One possibility was that the harvested cereals were transported using 4-wheeled wagons (literary and artistically documented), but so far no indication of threshing activities (e.g. tools) have been found in the upland settlements. This suggests that threshing might have happened in the lowlands, near(er) to the cultivated fields. In this case the storage pottery, which has a wide distribution in both lowland and upland contexts, or other alternative packaging which has not survived, might have served as appropriate containers for transportation.

3.2. Resource exploitation: extraction and the location of settlements in relation to ores (figure 4.20)

Within pre-Roman Dacia, as well as in earlier and later periods, there is extensive evidence of human exploitation of the rich natural resources, primarily metal and stone, available in the study area. The identification of the sources is more difficult, since any later activity has tended to destroy the traces of earlier quarrying or mining (Glodariu and Iaroslavschi 1979, 111) and only the periods of the

largest extent of activity (as for instance the ancient Roman or modern Austrian periods) tend to be identifiable. The identification of such sites for pre-Roman times is, therefore, largely based on processing/refuse or artefactual evidence (tools) from the sites themselves or from associated settlements, along with limited thin-section stone analysis data (Lockyear 2004). Future chemical or geological analysis would shed more light on the identification of sources and the geographical areas supplied by them.

As far as it is currently known, the sources for the stone architecture of the Orastie Mountains were located some distance away from the sites in the hills around Deva –figure 4.15 (andesite) and at Santamaria de Piatra in the Magura (Calanului) hill –figure 4.16 (limestone) which involved surprisingly long distance for transport. The limestone near Calan was used even at Capalna, where the ashlar blocks were smaller, perhaps as a response to transport difficulty (Gheorghiu 2001, 124). Another limestone quarry was located at Craiva (25) in the vicinity of the hillfort at Piatra Craivii providing a much closer source. Other quarries possibly used in this period of time are at Uroi -figure 5.30 (andesite) and Telna (limestone). The limestone coming from Santamaria de Piatra and Craiva was worked at the quarry site and then transported away (Glodariu and Iaroslavschi 1979, 144). Large salt deposits were also available in the area (Ocna Mures), but traces of its exploitation might have disappeared.

The use of trees and wood is frequently represented in scenes on the Trajan's Column (see above Chapter 2). Wood was used extensively in constructions of four-posted structures (interpreted as watchtowers), upper storeys of tower-houses, houses and ancillary buildings, sanctuaries or palisades. Preserved remains of wood in waterlogged deposits are extremely rare. The preserved in-situ wooden flooring of the water cistern along with the barrel and wooden pipe-supports from the water decanter installation at "Tau" from *Sarmizegetusa Regia* indicate the use of timbers of local coniferous species ('zada'and fir) (Gheorghiu 2001, 155-6). According to recent environmental analysis from "Tau" (http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=1962 visited 11.05.2004), a different ancient coniferous tree ('larita') populated the hill sometime immediately after the abandonment of the site, and is likely to have populated the local environment also in Dacian times, but the source for 'zada' was probably not far away. The cistern excavated at Costesti-Muchea Chisetoarei made extensive use of oak timbers, like one of the 2 water-collection basins from Costesti-Cetatuie (Glodariu 1983, 37). The use of coniferous species at *Sarmizegetusa Regia* as opposed to non-coniferous species at Costesti mirrors the levels of natural vegetation in the location of each of these sites (Sarmizegetusa is in the coniferous belt and Costesti in the oak belt) and, therefore, probably reflects the exploitation of locally available species.

A wide variety of tools related to woodworking have been found within the study area in deposits, stray finds or excavations. Axes of several types have been found in large numbers at *Sarmizegetusa Regia*, Luncani, Fetele Albe, Costesti-Cetatuie, Campuri-Surduc, Craiva and Capalna. 2 types of hatchets –double axes ('barde') are represented in discoveries from Capalna, Costesti-Cetatuie, Craiva, Cucuis, Luncani and Luncani-Piatra Rosie, *Sarmizegetusa Regia* and Fetele Albe. Other discoveries include: 2 types of adzes ('tesle' -Capalna, Costesti-Cetatuie, Luncani-Piatra Rosie,

Sarmizegetusa Regia, Craiva), 3 types of saws ('fierastraie'-*Sarmizegetusa Regia*, Costesti-Cetatuie, Luncani-Piatra Rosie), iron compasses (Sarmizegetusa and Cetea), 3-4 types of woodworking chisels ('dalte' - Sarmizegetusa, Capalna, Craiva, Cucuis, Costesti-Cetatuie, Luncani-Piatra Rosie, Pustiosu hill, Strambu hill, *Sarmizegetusa Regia*, Valea Larga, and possibly at Costesti-Blidaru, Rudele (uncertain purpose). Two or possibly three imported spokeshaves which came from Herennius of Aquileia were found, along with local produced, smaller examples, at *Sarmizegetusa Regia*. The list of tools finally includes drills (at Costesti-Blidaru, Costesti-Cetatuie, Craiva, Luncani-Piatra Rosie, Sarmizegetusa, Strambu), planes ('rindele') from Luncani-Piatra Rosie and Sarmizegetusa), one file from Sarmizegetusa with bigger teeth than those used in iron working and scrapers from Costesti-Cetatuie and Sarmizegetusa.

The exploitation and especially the production of iron have benefited from more attention (Glodariu and Iaroslavschi 1979). The surviving evidence indicates significant use of the resources from the Orastie Mountains around Gradiste and beyond, but later (Roman or modern) exploitation of the extremely rich main ores of the region (Ghelari-Teliuc area in the Poiana Rusca Mountains) may have wiped out any trace of previous use. In the Orastie Mountains, Batrana Hill was indicated as the source of the iron ores discovered in the 19th century at Sarmizegetusa in the eastern settlement, within a large workshop with four iron-smelting kilns (reducere). The refuse from ore reduction found at Dosul Vartoapelor-Sub Cununi was supposedly connected to the exploitation of the local resources. At Tampu, where available resources were also present, slag was accompanied by large iron ingots (aprox. 40 kg in weight; 0.35-0.4m in diameter –indicating circular kilns with this inner diameter) and traces of firing, lending more weight to local exploitation and primary processing of iron. Other iron sources available in the area and possibly exploited were at Strambu Hill near Rudele, on Pietrosu valley, Mlacilor Hill and Negru Hill and, further away, at Drumul Dreptului near the Cioclovina fortification (Gheorghiu 2001, 183-5). Iron ore reduction activity was intensively carried out within a large workshop in the civilian settlement at *Sarmizegetusa Regia* with 4 out of the 8 kilns of circular (built in clay) and rectangular (stone built) shape from the site used for this kind of activity. The circular kilns were probably the ones used for iron ore reduction, while the rectangular ones were used for bronze metallurgy (Gheorghiu 2001, 195). The other kilns were used for bronze processing and production (Gheorghiu 2001, 184-5). Other traces of ore reduction were identified at Federi (435) as a reduction kiln near hills Dealul Fetei and Dealul Robului (Popa 1987, 34) and at Balomiru, on the Cocozanilor stream (417), with remains of a furnace for iron smelting and slag associated with Dacian pottery (Popa 1987, 33). On Blidaru Hill at Ohaba Ponor (460) heaps of iron slag were identified, probably associated with the activity of local kilns. The iron slag discovered within the settlement at Orastioara de Jos-La Feregari (592) (Gheorghiu 2001, 56), without being associated with any other traces of ore/reduction, is perhaps reminiscent of the secondary working of ingots. Similar situations could be present at Sanpetru (496) (Popa 1987, 36) and within the open settlement at Costesti (Gheorghiu 2001, 67; 184).

The exploitation within the study area of precious metals, gold and silver, and also of copper and tin or lead for producing bronze remains strikingly ill-attested. It certainly took place, given the amount of artefactual evidence and the considerable availability in the landscape of these natural resources

(see chapter 2), not to mention the fabulous treasures described by literary sources, but later activity at the relevant sites has probably damaged earlier traces. Because it represents a special topic in its own right, the present study has deliberately excluded the Apuseni Mountains, where it is probable that such activity was carried out in pre-Roman times. Given the speed of organisation of the extraction process by the Romans immediately after the conquest, they would have taken under control primarily existing exploitations rather than identifying sources for themselves (Glodariu and Iaroslavschi 1979, 110-11). Within the study area surface exploitation of gold-bearing sand was in operation at Pianu de Sus in the Roman period (Moga and Ciugudean 1995, 145-6) and may have been exploited also in the pre-conquest period. There is evidence of human activity in the area since the Neolithic and Bronze ages (including a gold spiral pendant dated to the latter), along with reports of a tumulus grave with pottery and a stone sharpener broadly dated to the 'Iron Age' located in a vineyard in the vicinity. The most convincing argument for late pre-Roman extensive activity in the area of the gold exploitation is the discovery of a hoard containing 26 Apollonia drachms, 23 of Dyrrachium and one of Thassos, during gold mining works in 1852. Another rich Dacian hoard (323) dated to the 1st century BC, now at Kunsthistorisches Museum in Vienna, was discovered in 1821 between the villages of Salistea-Cioara and Pianu de Sus and contained 64 silver objects. It included a fragment of a *karnax*, 4 simple bracelets, 5 disc- and tube-shaped appliqués, a 0.43m chain with nail-shaped pendants, a metal ring, 6 simple shield-shaped brooches dated to La Tene III, 3 spirals, 2 torques, and a button. A fragmentary plaque was "primitively" decorated 'au repoussé' representing 2 human characters with warrior attributes. The archaeological gazetteer also contains other Dacian stray discoveries in the vicinity, both under Salistea-Cioara and Pianu de Jos, indicating together not just occupation but also the accumulation of significant wealth in the region, probably related to the exploitation of gold resources. Another more uncertain site for gold-bearing sand extraction could have existed at Costesti (Glodariu and Iaroslavschi 1979, 143).

3.3. Manufacture (especially metalworking and pottery production) (figure 4.20) is far better documented within the study area, based on archaeological evidence. Because of poor survival of artefacts, nothing has survived from leather and textile production. Also, glass production has so far been documented by discoveries of an iron blow tube and solidified glass paste balls at *Sarmizegetusa Regia* (Glodariu *et al.* 1997, 193). Woodworking is occasionally documented through artefacts in waterlogged contexts, like *Sarmizegetusa Regia* and Costesti (see above). Several surviving pieces were found, such as a wooden barrel, insulation laths for water pipes (curved to contain ceramic pipes and similar ones used as pipe covers) along with other laths lining the inner sides of water cisterns. A 'medical kit' discovered in the settlement at *Sarmizegetusa Regia* was probably stored in a small wooden box (Glodariu *et al.* 1996, 98) and a large variety of artefacts, including tools, would have been made of wood (Gheorghiu 2001, 193-4). Also, the amount to which the wood was present in architecture (as posts, beams, laths, shingles) and the quantity and variety of tools (locally produced and imported), nails and fittings would indicate with certain probability the social need for and presence of skilled craftsmen. No certain workshop has been identified archaeologically. Architecturally, they would not necessarily have developed specific building plans

and the only surviving artefactual evidence would have come from specific tools, but such tools could also have existed in a regular household inventory. Perhaps someone more professionally involved in woodworking would have cared to acquire the tools of Aquileian make discovered in an otherwise common building at *Sarmizegetusa Regia*.

Studies of Dacian ironworking (e.g. Glodariu and Iaroslavschi 1979) identified a whole range of production sites, from primary ore reduction sites near extraction points (see above) to workshops dealing with secondary working of the iron ingots and the production of artefacts. At least one workshop had a combined function, dealing with the whole production process from ore reduction to end products for the market. This is the large workshop from the eastern settlement at *Sarmizegetusa Regia*, which had 4 reduction kilns, exploitating ores from Batrana Hill, many ironworking tools, and various unfinished products. Secondary working of iron ingots was carried out in other workshops at *Sarmizegetusa Regia* (on terrace VIII above the sanctuaries) and at Caprareata, in the Godeanu valley. Some of these workshops and certainly others across the area (in places where specific tools were found) would have also carried out repairs.

Workshops are regularly identified on the basis of finds (tools, refuse, unfinished products, kilns), since the buildings themselves were otherwise no different than other houses within the settlements (Glodariu 1983). At Banita and Craiva, for example, numerous discoveries of specific tools indicate the probable existence of local workshops. The tools were numerous, varied and adapted to different operations involved in the production process: 2 types of anvils (Craiva, *Sarmizegetusa Regia* - terrace VIII, Caprareata and a house in the open settlement); sledge hammers (Caprareata, Craiva); 5 types of hammers (*Sarmizegetusa Regia*, Meleia, Craiva, Capalna, Banita, Rudele, Piatra Rosie); 10 types of tongs (-*Sarmizegetusa Regia* -terrace VIII and Caprareata- Meleia, Capalna, Luncani, Costesti-Cetatuie, Cucuis); files (Costesti-Cetatuie, - terrace VIII, Caprareata); iron sockets for the end part of bellows which were more exposed to heat (*Sarmizegetusa Regia* on terrace VIII and Caprareata) and iron sticks used to clean the bellows pipe (Luncani and *Sarmizegetusa Regia* -terrace VIII, Caprareata); saws with triangular section (Costesti-Cetatuie and *Sarmizegetusa Regia* on terrace VIII and Caprareata); 2 types of chisels (Cozia, Craiva, Fetele Albe, *Sarmizegetusa*); 3 types of drifts (Meleia, *Sarmizegetusa Regia*, Costesti-Cetatuie); and 4 types of piercers (Costesti-Cetatuie and Sarmizegetusa) (Gheorghiu 2001, 186-9).

As documented by metal analysis on artefacts from the princely grave at Cugir (Glodariu and Iaroslavschi 1979, 113 n. 19) (figure 4.9) many bronze, silver or gold artefacts were also produced locally. The large metallurgical workshop from *Sarmizegetusa Regia* mentioned above was not involved only in ironworking, as 4 of its 8 kilns were used for bronze reduction and production of artefacts. The discovery of crucibles (some with traces of melted metal), numerous specific tools, moulds, unfinished or misshaped artefacts, or items to be used for repairs, also indicate bronze production at Banita, Capalna, Costesti-Cetatuie, Craiva (including evidence for silver working), Luncani-Piatra Rosie, and Ardeu (Popa 1987, 34; Gheorghiu 2001, 17; 194-5).

The production of coins in Dacia (initially imitations of Greek models, especially of tetradrachms, later of Roman denarii) was extremely active and was stopped only by the Roman conquest,

providing a further indication of the politico-social sophistication of Dacian society (figure 4.20). The only known example of a monetary workshop was excavated at *Sarmizegetusa Regia* just outside the southern wall of the Dacian phase, overlapped by a subsequent Roman reduction workshop and by the wall of the enlarged enclosure of Roman date. According to the 4 coin dies found there, the Dacian workshop used to mint imitations of Roman Republican (C. Cassius, 126 BC and C. Hosidius Geta 68 BC) and early imperial (Tiberius) denarii. Another coin minting die was found at Ludestii de Jos imitating a 1st century BC denarius with the legend C.MAR.CF. (Gheorghiu 2001, 231). Particular to Dacian coinage is the gold 'koson'coin, with an eagle on its obverse and the legend ΚΟΣΩΝ which, although still largely a mystery, is considered to be of local production. The quantities discovered, mainly as hoards and a few singular pieces in the Strei valley and *Sarmizegetusa Regia* indicate the possibility that they constituted a royal accumulation of metal (Strei being interpreted as the ancient *Sargetia* river used by Decebalus to hide his treasure). As the discoveries indicate that silver was generally more widespread or prefered, royal monopoly on gold is a possible explanation of the extremely rare occurrence of gold in Dacian jewelry.

Pottery production is represented in several sites around the study area by discoveries of pottery kilns. Two of them were discovered at Deva, one within the area of the modern town in the vicinity of the hillfort and the other within the settlement from Bejan hill. They are both clay-built structures, circular-oval in shape of 1.10 and 0.80-1 metres in diameter, and the first of the 2 examples had a fire chamber divided by a median wall. The firing chamber was built above a clay grate with holes of approximately 0.10 metres in diameter to allow air circulation within the kiln. Another such kiln was discovered at Fetele Albe-Sesul cu Branza, on a terrace near the spring. The workshop was supplied with water from the spring through clay pipes. Remains of a pottery kiln badly damaged by the modern road were discovered within the large open settlement at Costesti. However, even though kilns are rare discoveries so far (no doubt reflecting inadequate levels of research rather than the use of more primitive methods of firing, given the quality of the pottery), pottery production was presumably taking place at several other sites where tools used for polishing vessels were discovered among the artefacts, as in Banita, Capalna, Craiva, Sebes-Lancram, Luncani-Piatra Rosie, Meleia or Sarmizegetusa. Moreover, at the latter site misshaped pottery fragments (wasters) have been discovered which normally occur during firing and are not sold (Gheorghiu 2001, 67; 171-3; Meleia-Glodariu *et al.* 1996, 89). In all a large variety of ceramic forms was evident, handmade and wheel-thrown, coarse and fine pottery, usually black/grey in colour. The fine pottery included also painted ware as a very rare occurrence, especially at high-status sites and largely associated with areas of special spiritual significance (Florea 1998, 250-1). The painting was made on white slipwares, using most often red paint with high traces of iron oxides in its composition. The elaborate motifs were first scratched on the surface of the pot prior to painting and a compass was used for precision for circular motifs. Within our study area, painted pottery was discovered at Capalna, Cozia-Piatra Coziei (526), Craiva-Piatra Craivii (208), *Sarmizegetusa Regia* (529) Meleia (536), Fetele Albe (534), Fata Cetei (533), Ardeu (102) and probably Cetea (144). The painted pottery in the Orastie Mountains region develops as a particular style, both as ornamentation and as ceramic types, by using figured decoration (plant and animal motifs) and by a preference for decorating large vessels,

mostly 'chiup'-type, but very few kantharoi and bowls, and virtually no high-footed plates ('fructiera') (Florea, 1998, 176).

4. Networking and communications

As noted above, despite the importance of the river Mures as the main trade route, only 32 of the settlements and few fortified sites are located within a buffer zone of 5 kilometres from it (figure 4.18). Deva was perhaps the single most important combined site of hillfort/citadel with extensive surrounding open settlement in the immediate vicinity of the main river. Other central places may be identified at sites such as *Sarmizegetusa Regia*, Costesti, Fetele Albe and possibly Craiva which combine elite centres with large complex settlements and a large range of activities, including manufacture, production and religious centres. They are not evenly distributed within the territory and are certainly located some considerable distance from the main river, which contradicts the view that important settlements were located on the main trade routes (e.g. Glodariu 1983). Access in and out the study area was possible not only by following the Mures valley, but also through the Iron Gates of Transylvania and Jiu valley into Tara Hategului, through the Secas-Sebes valleys along the Olt river corridor, or through the Aries valley towards the north and north-west, but only Capalna and Banita were located on these secondary land routes.

The apparent pattern of the economic processes (agriculture, exploitation and processing of resources) also seems to have involved a great deal of transport between the production sites and processing/storage places (see above). This situation certainly increased the need for a good transport and communication network for both shorter (for iron ores and wood) and longer distances (for cereals and building stone). However, proper roads are absent from the pre-Roman landscape. The only roads of possible Dacian date within the sites investigated are at *Sarmizegetusa Regia* and Luncani-Piatra Rosie. The roads described by Apolzan (1987, 52-55) and Glodariu (Glodariu *et al.* 1997 12-15) within the Orastie Mountains are no more than access routes rather than proper roads, and are based on the analogy with the traditional modern economic-social system of the area. The modern settlement pattern and network in the uplands, however, is likely to have different basis, relating largely to specific historic conditions (e.g. avoidance of the demographic, administrative and ethnic stress present in the lowlands; economic dependence on forests and upland pastures, etc) which cannot automatically be transposed back in time to the late Iron Age.

Within the study area coin discoveries without explicit context have been reported in 34 locations. It is difficult to make a precise analysis of monetary circulation in the region, since all the pre-conquest original Roman denarii are normally given a Dacian context without consideration of the possible survival of older Roman coinage within the post-conquest colonised social groups. However, coin distribution seems to indicate two distinct areas of use, one in the Orastie Mountains and the other to the north in the Craiva-Capalna region. Other smaller groups are found in the Deva-Cozia region, a couple of locations in the Hateg area, and the Cigmau-Geoagiu region (although the discoveries from Geoagiu are very likely ritual depositions). The presence of coinage in the area around Alba-Iulia-Craiva-Sebes is perhaps a reflection of extensive agricultural produce from the area, while in the

Orastie Mountains economic wealth was determined by industrial activity, along with politico-administrative and spiritual leadership. The distribution of hoards is more evenly distributed over the territory, although 32 are located within the eastern half of the study area along the Mures, in Tara Hategului, Poiana Rusca and the Orastie Mountains. If the presence in this list of the Orastie Mountains is unsurprising, the huge quantities of coins hoarded in and around Deva, totalling several thousands pieces, constitutes an important argument in support of its importance in the landscape as a central place.

The presence of imported goods and technologies is particularly related to elite sites (although the current focus on research on elite settlements certainly creates a bias in this respect) and consists of bronze, glass and even ceramic vessels, also silver and iron objects. In the period prior to the wars of conquest their origin was the Roman world, which had replaced the previous Hellenistic source of luxury goods. Despite clear literary indication of wine consumption in ritual/elite context (see above chapter 3) the occurrence of amphorae (for wine or perhaps oil) within the study area is extremely rare, being noted with certainty only at Costesti and Cetea (Glodariu 1976, 11), in strong contrast to the large quantities of such discoveries in the Geto-Dacian territories to the east and south of the Carpathian Mountains. The distribution of other imported pottery shows a somewhat similar paucity (present at Costesti, Gradistea Muncelului, Craiva and Cetea) and this would seem to confirm the problems of transportation of such fragile materials so far away from the Danube line over the mountains. Glodariu (1976, 12) suggests the use of intermediary stations, such as Poiana and Cetateni, where the wine/oil was transferred from amphorae into casks of wood or leather. But the presence of quantities of imported pottery at Pecica on the lower Mures (Glodariu 1976, 19) confirms the use of this river for transportation, and probably this was the route of access for the few such imports within the study area. Even more striking is the fact that imported glass objects, just as, or even more fragile, are well-attested within the study area, with 92 pieces in this area alone out of a total of 192 for the whole Dacia: Gradistea Muncelului - 43; Costesti - 24, Luncani-Piatra Rosie 14; and Capalna -11 pieces (Glodariu 1976, 39-40). These examples tend to reduce, although not eliminate, the factor of difficulty of transport into the uplands, and perhaps different explanations for the absence of amphorae should be sought. Finally, the discoveries of parts of double-plated balances at Cozia-Piatra Coziei (in bronze) and Craiva –Piatra Craivii (one in iron and one in bronze) or of lead and stone weights from single-plated balances at Sarmizegetusa is probably indicative of the trade functions of these sites. The measurement units for weight (as demonstrated by the weights discovered) and probably also for length were adopted from the Romans (Gheorghiu 2001, 243-5). In general the presence of foreign luxury items can be largely explained by trade, although future studies should take into account the possibility of prestige goods circuits to have included Dacian elite.

5. Spirituality /Religion (figure 4.21)

Literary sources noted significant particularities in Dacian religion and attitude towards life and death, (facing birth events with sadness and death with great joy –see above chapter 3), indicating a

great emphasis on the after-life. This was accepted as the immortal condition promised to the initiated by their greatest deified prophet, Zamolxis (or Zalmoxis) (Herodotus *IV, 95-96*; Strabo, *VII, 3, 5*) and was believed to have largely nourished their high motivation in battle. Dacian religion and sacred architecture have been the focus of extensive research (Crisan 1983; Eliade 1991; Glodariu 1983; and the latest overview in English by Lockyear 2004). The present study will not, therefore, reproduce those aspects of study here, but focus on issues relating to the settlement pattern and hierarchy, on identification of other central places with religious significance, and on discussing newer data related to funerary manifestations.

5.1. Funerary practices (figure 4.21)

There is not much known about late Iron Age funerary practices, especially for the period prior to the Roman conquest when funerary evidence seems totally absent and it is believed that the religious reforms may have changed the method of disposal of the dead and the rituals involved in the process (one extensive study on general Dacian funerary practices made by Sarbu, 1993). Cemeteries seem to reappear only immediately after the Roman conquest (e.g. Obreja). The only examples of grave discoveries until recently were the 4 tumulus graves dated to the 1st century BC discovered outside the fortification at Cugir (figure 4.9). The one excavated example (Tumulus no. 2) proved to be an extremely rich elite warrior grave where the deceased, wearing his full iron armour (helmet; chain mail; long sword and short sword of Dacian type; and spear) and silver and gold jewelry, was burnt in situ in his 3-horsed chariot. Other pieces included many iron and bronze fittings from the chariot, a bronze situla and a ceramic 'fructiera'- (tall-based Dacian plate) (Moga and Ciugudean 1995, 88). Similar funerary habits are present also at Costesti-Cetatuie where, in addition, recent reports note the discovery of a ritual pit located immediately to the south of the tumulus. The inventory of finds, dated to the second half of the 1st century AD, consisted of pottery fragments (2 jars, 2 'fructiere' and another "mid-sized" vessel) along with animal bones (including a dog jaw bone), an iron nail ('tinta'), a bronze appliqué and a rectangular small silver plaque (http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=925 visited 11.05.2004).

The most recent and spectacular discovery comes from Hunedoara where at 'Gradina Castelului', near Sampetru Hill –figure 4.13 (http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=1972 visited 11.05.2004) where occasional discoveries indicated a possible Dacian settlement, 16 inhumation graves of babies and children (0-7 years old) have recently been discovered. The deceased were apparently disposed in natural holes in the rock surface of the hill covered by shallow topsoil without any particular care for certain geographical orientation. No surviving remains indicate any particular care for surface signposting, but this was probable (by means of stone collections or small mounds) since the inhumations do not overlap (although in 2-3 cases the grave pits contained more than one body). The deceased were disposed on their backs or on either their left or right side. Some of the skeletons had missing parts (skull, limbs) although the excavators suppose that this might have occurred much later through animal infestation on the site, which is blamed also for the misplacements of other finds. The grave inventory varies a great deal, both in type and quantity.

Finds include beads, pendants, an earring, rings, a necklace, a bracelet, one iron needle and a possible engraving bronze tool. A small barrel-shaped iron object preserved traces of the cloth which probably wrapped the body. The ceramic finds were very scarce which, considering the wealth in personal ornaments, might indicate cult or religious rather than economic reasons. The first cluster of graves (the 6 southernmost) was poorer in content. The middle cluster of 3 graves (especially M7 and M15) was the richest in artefacts (20 pieces). A third cluster of another 6 graves was also fairly rich in artefact deposition, which in their case also included brooches. The most interesting complex is grave M7, not only because it was the richest (12 artefacts), but also because of the nature of the finds. The deceased, probably a baby, was buried together with a spear head and an arrowhead, a curved-bladed knife, 2 rings ('verigi'), a bead, 2 decorated bone artefacts, 2 broken 'fructiere' and, even more surprisingly, a denarius minted by Trajan of AD 98-99! The presence of weapons in the grave could indicate social connections to the warrior elite, although the other children do not seem to be related to an elite context. The whole cemetery offers surprising (for instance weapon deposition in the grave of a baby) and detailed insights into a previously unknown aspect of the Dacian civilisation at a very late moment prior to the Roman conquest (the excavation team supposes the second half of the 1st century AD, extending to 106, although artefactual evidence indicates possible dating further into the first half of the 2nd century AD). A similar case of child inhumation of potentially similar date was noted at Seusa (information M. Ciuta and I. Haynes), under the remains of a Roman villa.

5.2. Religious places (figure 4.21)

Temples of circular or rectangular plan are always found in the vicinity of high-status places, all of them hillforts/citadels with one exception (Fetele Albe). The largest known complex of sanctuaries is at *Sarmizegetusa Regia* (figure 4.8). The sacred area consists of terraces X and XI to the east of the hillfort, supporting the remains of ten or eleven 'sanctuaries' (some of them earlier and replaced by other sanctuaries) along with staircases, a paved road leading to the hillfort, the solar disc or altar and stone-built water supply/drainage channels. Unfortunately the construction of the terraces themselves is a late architectural addition, so that the temples and other dwellings and the assiociated topographic change could have affected any earlier structures which so far have not been investigated (Lockyear 2004). The preference towards a rectangular or circular plan does not always seem to be related to chronological evolution, but the earlier sanctuaries tend to be erected in limestone, while for the late ones the preference shifts towards andesite. Other hillforts associated with sanctuaries are Costesti-Cetatuie and Blidaru, Luncani-Piatra Rosie (in the Orastie Mountains) but also Craiva and probably Capalna. Fetele Albe-Sesul cu Branza is so far the only settlement not associated with a known hillfort which had 2 sanctuaries, one circular built on a limestone base early in phase 2 of terrace II and the other on terrace III (circular, with limestone columns). Also, based on discoveries of andesite architectural fragments such a sanctuary/-ies probably existed in the vicinity (Gheorghiu 2001, 71-2). Elsewhere in the study area, Craiva with 3 sanctuaries would have also represented an important religious centre, and at least one sanctuary would have functioned at Capalna.

The norm would seem to be that the presence of elite would have determined the location of sanctuaries nearby. This is very probably true in the case of Costesti, Craiva, Luncani-Piatra Rosie or Capalna. However, on the basis of archaeological evidence, *Sarmizegetusa Regia* seems a later development than Costesti-Cetatuie, for example. Another particularity of the site is the concentration of intense metallurgical activity, particularly in the area of the settlement to the east of the hillfort, with one big workshop on the terrace VIII in the immediate vicinity of the temples. Within the same area huge accumulations of food supplies were discovered in burnt granaries – indeed, the biggest granaries found on the site were located there. These associations could indicate the involvement and possibly control of metallurgy and taxation/administration by religious leaders, which (although both not uncommon in early state societies of the Mediterranean– for example see Knapp 1990 for Bronze age Cyprus) have remained so far unexplored. The religious involvement in food storage could perhaps be indicated also by the prevalence of large storage vessels (rather than kantaroi, for example) within the painted pottery specific to the Orastie Mountains (see above), of which a large quantity comes from a terrace just below the religious precinct of *Sarmizegetusa Regia*. Therefore, it is possible that *Sarmizegetusa Regia* was a religious core (perhaps *Kogaionon*, the sacred mountain known to have existed, but not located precisely) before reaching political importance, an event possibly related to Dekaineos' ascension to power after the assassination of Burebistas.

However, Dacian spirituality would have had a much larger variety of expression than that of adoration in temples. One such alternative central place was probably at the natural hot springs of Geoagiu-Bai (*Germisara*). Traces of the use of site in the pre-Roman time are almost non-existent, apart from the discovery of 14 gold coins in the area. However, it was presumably used before the arrival of the Romans since it is the only such site with a Dacian name and since the local deities (the *Nymphes*) probably indicate an earlier feminine supernatural presence. Furthermore, its location in between the hillforts at Ardeu and Cigmau would make its identification by the Dacians highly probable. According to Strobel (1998, 207-16), based on numerous deposits found there, a sacred pond was located just outside the small enclosure (see above) of the Luncani-Piatra Rosie hillfort, near a building where the famous bronze 'shield'-clippeus ornamented with religious motifs (Florea and Suciu 1995) was found. Ritual hanging of trophies in the trees might also indicate the probable existence of sacred forests, while some of the many deposits of coinage, tools or jewelry, so widespread within the study area, could originally have had a different reason than deliberate hiding for protection during violent episodes (normally taken as the conquest wars) which is their general interpretation. One example could be the deposit found at the foot of the hill of Piatra Craivii, containing 3 fragmented swords, 3 spear heads and an iron fitting previously interpreted as a belt buckle. A silver local imitation of Philip II tetradrachm found in the same place at a later date could have also belonged to the same context. Within non-elite contexts, the inventory of one pit (no. 4) within the settlement at Sebes-Lancram revealed potential ritual significance (Popa and Totoianu 2000, 85-6). Finally, it was observed that houses and tower-houses are oriented with the door facing mainly south-east (Balos 2000), sometimes with deviations towards south or east, which is a trend manifested in wider areas within prehistory.

6. Social structure

As shown in chapter3 of this study, the written sources describe a warrior patriarchal society under the authority of a military leader, and a general assembly of warriors and a defined social hierarchy. The upper class(es) (*pileati*?; *tarabostes*) seem to be differentiated within society by external rank markers such as a tall hat (*pileus*) and/or symbolic-ritual tattooing or body painting for both men and women, with hereditary symbols transmitted up to the 4th generation (see Pliny the Elder, *Nat. Hist. VII 11 (10) 50; XXII 1 2*). The lower classes (*comati* -the long-haired?) were free men, with only limited evidence of slavery, though the region itself was one of the main sources for slaves for the classical world (Strabo, *Geogr. VII, 3, 12*).

Social stratification is visible within the settlement pattern through the emergence of hillforts on the one hand, and of stone architecture on the other, as compared to the usual, timber-built, sunken or surface structures. The traditional interpretation of the fortified sites is as the local equivalent of the tribal centres from the Celtic world, the analogy with Gaul being mostly used (e.g. Glodariu 1983, 72). Within the latest phase of evolution of Dacian society, Ferenczi (1988) believes that a union of tribes would have had several such fortified sites which would have still remained strategically important, and that this situation was perpetuated into the Dacian state. The basis for this interpretation is literary. Ptolemy (*Geogr. III, 8 1-4*) gives a list of 43 names of *civitates* in Dacia, out of which arguably 33 were of Dacian origin. A number of these names (*Patridava, Carfidava, Petrodasa* (*Petrodava*?), *Sandava, Vtidava, Marcodava, Ziridava, Singidava, Comidava, Rhamidava, Zusidava, Paloda, Argidava, Netindava*) seem to be of Dacian origin, with the added suffix of 'dava' (meaning settlement, village). The use of the suffix 'dava' in this fashion is, therefore, seen as a possible analogy with the Celtic fashion of naming settlements after regions or tribes. Others, like *Napuca, Zurobara, Dierna, Acmonia, Druphegis, Arcinna, Docirana, Lizisis, Patruissa, Zarmisegethusa regia* (= *Zermizirga*), although also of Dacian origin, lack the suffix. A further list of names of Dacian origin *Rhucconiu(m) Parclissum, Triphullum, Apulum, Tiriscum, Tiassum, Tibiscum, Amutrium, Sornunu(m?)* seem to have been Latinised, while a final group *Ulpianum, Saline, Pretoria Augusta, Augustia (Angustia?), Pyrum, Aque, Pinum* were probably Latin. Whether the account by Ptolemaios represents the reality before or immediately after the Roman conquest is not entirely clear. However, with the exception of *Sarmizegetusa Regia* and possibly *Apulum* as the hillfort/citadels at Gradistea Muncelului-Dealul Gradistii and Craiva-Piatra Craivii respectively, none of the archaeologically identified sites has been convincingly related to the names of Dacian *civitates* and the territories of the tribes named by the same source are also unclear. Indeed, the general archaeological picture is somewhat different (see above) than that for Celtic oppida. Hillforts are invariably related to the social elite, and this is largely supported by the finds coming from such contexts, with luxury items including fine pottery (even painted pottery), imported goods and coinage. But their function has been less explored. From an economic point of view, Glodariu (1983, 121-130) observes that only at *Sarmizegetusa Regia* does craftsmanship manage to surpass the central role of agriculture. Invariably, their topographic location is interpreted as an indicaton of a

strategic function, doubling their economic-agricultural one (for e.g. Arpasu de Sus, just outside the study area - Macrea and Glodariu, 1976), although in Dacia, as in Britain for example, it is likely that their location had more to do with social psychology and the pursuit of architectural monumentality than has been recognised previously (see Hamilton and Manley 2001). On this note, it has been suggested that "given this seeming lack of amenity for people on the hillfort, it may be that these were not places for living but were places for display. The symbolic nature of the interior arrangement, the huge grain storage capabilities, and the massive enclosing earthworks all suggest that the hillfort was designed to be a monumentalised display of day-to-day activities and the overriding importance of the agricultural cycle" (Williams 2003, 241).

The presence on site of *murus Dacicus* seems, from what has been presented here, a valid indicator for social status of a settlement (Lockyear 2004). It was used at all the hillforts around the capital and at the capital itself (Costesti -at Cetatuie and Blidaru; Gradistea Muncelului -on Gradiste Hill and on Varful lui Hulpe; and at Luncani-Piatra Rosie), but also outside at Banita, Craiva Piatra Craivii, Capalna, and probably Deva. The only other use (for tower-houses and supporting terraces within the open settlement at Fetele Albe) is exclusively located within the Orastie Mountains. The appearance of *murus Dacicus* therefore, indicates the high status of the very late (state) phase of the Dacian society and perhaps can be related to a political architectural program.

The size and shape of the defended sites is variable and reflects not only the size of the group involved but also its social structure. Neolithic and Bronze Age settlements tended to be rather small, covering only 2500-3500 sqm in Wietenberg settlements for example (Rotea 1993, 34). This contrasts sharply with the situation in the Early Iron Age (Hallstatt), which is generally characterised by extremely large sites. The examples known in Transylvania were some of the largest fortified settlements in Europe at that time (30 ha. enclosed at Ciceu-Corabia for instance -see Vasiliev 1995, 149; Vasiliev *et al.* 1991, 19) and could be related to an increase in population. The situation changed again in Late Iron Age (La Tene), when the Dacian fortifications are smaller, covering areas between 1 ha and 7 ha. (Glodariu 1983, 67; Zanoci 1998, 30-32). The fortified settlement from Arpasu de Sus, for example, covers only c. 0.37 hectares, and within the study area the hillforts from Costesti-Blidaru, Capalna (both covering 0.5 hectares –see above) are of comparable size. Rather than indicating a decrease in population, this could relate to a change in the social structure and the development of aristocratic/royal sites. Apparently this contrasts with the general tendency traditionally observed elsewhere in the central and western European *Barbaricum* (used in the present study in its geographical sense, rather than with cultural connotations) of the same date (Wells 2001), where the emergence of *oppida* produced significant increase in the areas and, indeed, the size of the community living within the enclosure. The beginnings, located in the Hallstatt period, were similar and, indeed, Transylvania had some of the largest examples of enclosed settlements, a clear indication of social aggregation. For some reason the later evolution saw the return of small-sized enclosures. Therefore, the key to understanding the social complexity of the period might be to answer who inhabited the enclosures and why?

In the traditional system of recording and publishing data, it is particularly difficult to find the right answer. Associated finds and amenities (workshops, sanctuaries, public spaces, etc) indicate that some of the identified high status Dacian settlements had complex functions, although it is debatable whether or not this had gone as far as to reach a proto-urban function (which is often supported by the Romanian literature). A primary argument against this idea is the fundamental lack of aggregation of the settlements, indicating a similar social trend. As shown above, most settlements seem to have had a scattered structure, whether in small groups or in individual units. Even in settlements previously considered as of compact structure (e.g. *Sarmizegetusa Regia*), the layout of the residential areas, consisting of terraces for single households, hints at social tendencies to individualism. Although *per se* this could represent only a pragmatic architectural solution to topographic awkwardness, its repetition within the general settlement pattern suggests that it was more likely a reflection of social attitude.

An important trend probably of late date within Dacian society is the emergence of towers. Without necessarily totally excluding a strategic function for them, they are more likely to represent an expression of social transformation and trends within late Iron Age society. They can be interpreted as an architectural expression of social emulation within the Dacian elite, an extension of the elite houses in the areas outside enclosures. If the tower-houses within citadels are to be interpreted as chieftain/king residences, the satellite tower-houses might be the houses of his courtiers (*hetairoi*?). The geographic distribution of the tower-house phenomenon (see Figure 4.17) is also significant in indicating centres of power. Tower-houses were located within the hillforts at Costesti-Cetatuie and Blidaru Capalna and possibly Luncani-Piatra Rosie and Craiva-Piatra Craivii, but such satellite structures were noted only at Costesti-Cetatuie and Blidaru (the most notable examples with 19 tower-houses in total), Craiva-Piatra Craivii (11) and a few near *Sarmizegetusa Regia* (3) and Varful lui Hulpe (2), although several more are distributed in 4 other locations around *Sarmizegetusa Regia* –Varful lui Hulpe, forming a far looser satellite belt than those from Costesti. More importantly, with the exception only of Craiva, they are clustered within the Sarmizegetusa-Costesti area and do not show an even distribution of power across the territory. The distribution of painted ware (Florea, 1998) confirms the importance of the sites from Gradistea Muncelului-Gradiste hill, Costesti-Cetatuie Craiva-Piatra Craivii and Capalna. But its occurrence in other locations (mostly within Gradistea Muncelului area –Fetele Albe-Sesul cu Branza, Fata Cetei, Meleia but also elsewhere – e.g. Piatra Coziei or Cetea) recommends it as a better indicator of socio-economic, possibly religious-related, but not of political status. Therefore, a similar interpretation with the intra-tribal centralisation characteristic of Celtic areas is highly unlikely for the study area in the same format.

The complexity and size of some open settlements around hillforts have already been interpreted as indicators of their importance as central places, with economic if not always politico-administrative functions. It is likely that at least some of the identified possible central places would have carried out certain administrative functions. After all, literary sources indicate that Decebalus instituted a clear division between the warrior elite and the economic elite (see chapter 3). This is, however, not immediately apparent. The examples of balance parts found at *Sarmizegetusa Regia*, Piatra Coziei and Craiva-Piatra Coziei (see above) do not seem to have been used for measurements of large

quantities and, therefore, even if a certain involvement in the taxation process is possible, it is more probable that they were used in trade activities (as was their previous interpretation). The social elite did not necessarily hold a monopoly on craftsmanship as a whole, although their residences seem to have acted in some cases as focal points for industries, especially metallurgy and pottery (Figure 4.20). At both Deva and Costesti, pottery kilns were located within the open settlement around the hillforts, along with evidence of metallurgy (iron, but also bronze, silver and gold). At *Sarmizegetusa Regia* there is a possibly a link between religion, industrial metallurgy and possibly production of painted pottery. However, traces of metallurgy have been identified in other areas even outside the Orastie Mountains (for example several points in Tara Hategului have provided evidence of iron working) which have no apparent relationship with any elite or religious site.

The presence and wealth of the social elite within the study area is proved also by numerous discoveries of coins and jewelry, many of them grouped in hoards of various sizes (Figure 4.19). Some were extremely rich, grouping a few hundreds or, indeed, thousands of pieces. As expected, they tend to be located outside the settlement areas, although, with a few exceptions, they are located in the immediate vicinity of settlements. Their geographical distribution shows a higher number of hoards in the western half of the study area, in the region Orastie Mountains-Deva, and beyond than in the eastern region (Cugir-Capalna-Craiva) where stray finds of coins or jewelry are prevalent. Also, within the former region, more hoards were discovered at distances significantly greater than 5km radius from the hillforts, while within the latter such finds are located mostly just outside this 5km buffer zone.

Settlements at the lower end of the social hierarchy are far less well known because of lack of research. Their prevalent individual character in terms of the size of the social group that inhabited them is largely assumed here on basis of the recent re-consideration of evidence from other geographical areas normally used for comparison, but until large-scale programs of survey take place, there will be no definitive answer to this problem. Furthermore, any assumptions about the importance of particular sites need to be flexible. For example, an open settlement like that to the east of Vintu de Jos has all the indicators of a purely agricultural village. Nevertheless, its size, but especially its location on the bank of the Mures, makes it potentially interesting as a central place for trade and communications. Another possible central place is at Cetea, based on the type of artefacts discovered at the site, including imported amphorae. Finally, a site for all appearances simply an individual farmstead, like Saracsau, can hide under its floor 4 large and 4 small brooches, 1 fibula pin, 3 necklaces, 4 arm rings, and 6 rings all in silver, which gives some indication of its economic power.

The study of social structure at an intra-settlement level is still at its very beginnings and, based on the current level of research, little can be said with certainty. It appears that the individuality of the basic family (parents and children) is expressed at this level too in both upland and lowland settlement. The houses seem unlikely to have hosted much larger groups (not more than 2-3 generations together), based on the division of space and evidence of hearths within the excavated examples (see Figure 4.1). The architectural differences within upland and lowland houses are

significant, but clustering of buildings into small groups is obvious both in upland and lowland areas. Some provision of public open areas, if existent, is clearly defined in very few cases (*Sarmizegetusa Regia*, possibly Fetele Albe and outside the study area Arpasu de Sus) and in two of these (*Sarmizegetusa Regia* and Fetele Albe) they seem to be associated with sanctuaries. The duality of tower-house structures present in the hillfort at Costesti-Cetatuie should be further analysed by future research into their chronological relationship. Their social significance differs depending on whether they were totally contemporary, or if one of them constituted a later addition. The chronological challenge of a possible duality should then be extended further, in analysing the relationship between the 2 citadels from Costesti (Cetatuie and Blidaru) which are located unusually (and perhaps unnecessarily) close. Until then, a subsequent duality of the elite group living there or even a duality of power should be considered probable. Their surrounding 'belt' of tower-houses occupying the immediate vicinity of the citadels and keeping the rest of the settlement at a reasonable distance should also be seen as an indicator of the social structure rather than a defence strategy. In many respects, Costesti shows a politico-administrative potential significantly higher than *Sarmizegetusa Regia* where religious significance seems to have prevailed.

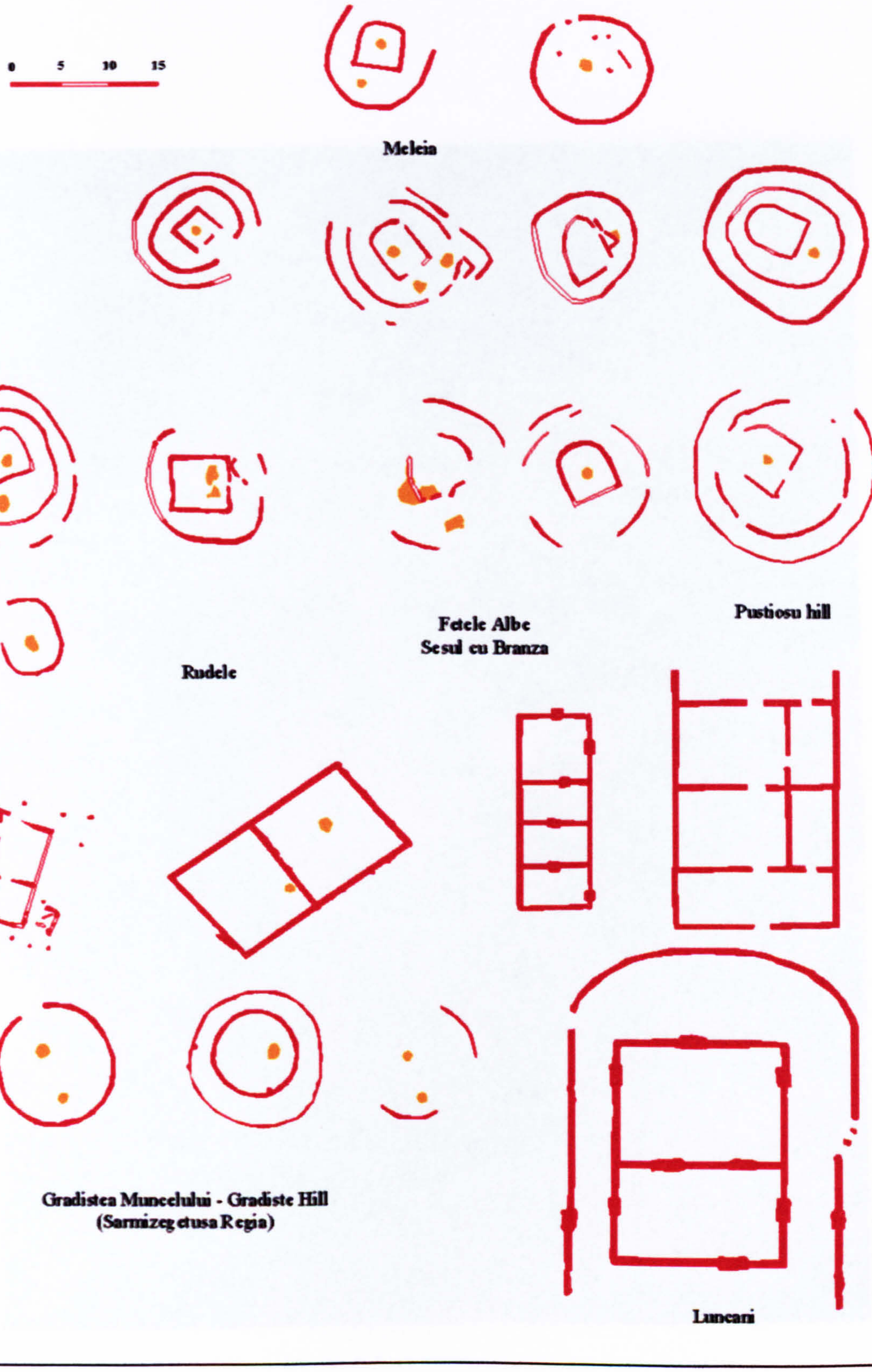
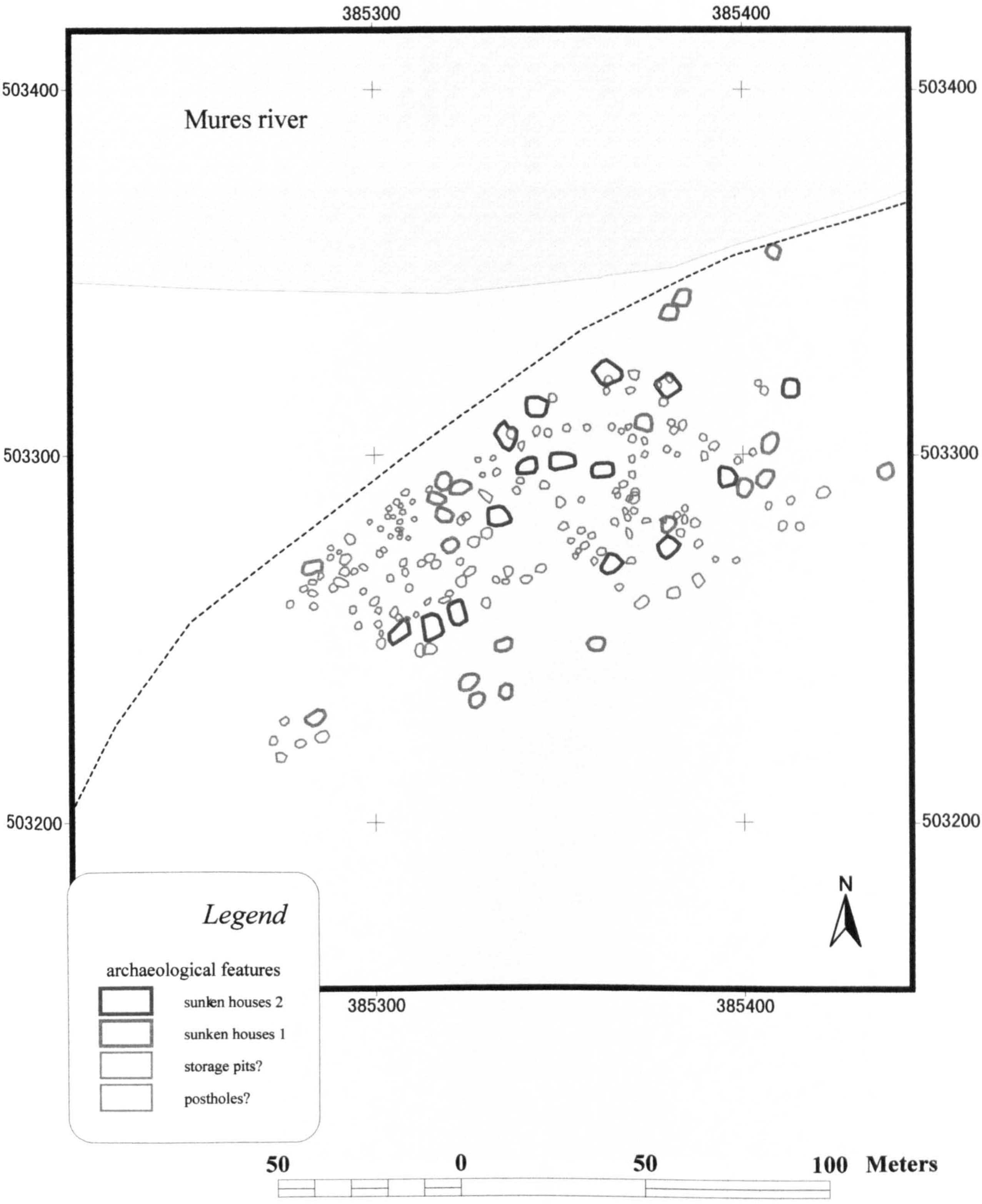


Figure 4.1: Dacian house plans in upland settlements

Figure 4.2: Man-made terraces in the Gradistea Muncelului area probably late Iron Age in date. (WSH)

Figure 4.3: Aerial photo of the village of sunken houses and pits at Vintu de Jos SPGM visible as positive cropmarks in the summer 2000; traces of *villa* buildings as negative cropmarks in the background (WSH)

Figure 4.4: Multi-period prehistoric village east of Vintu de Jos



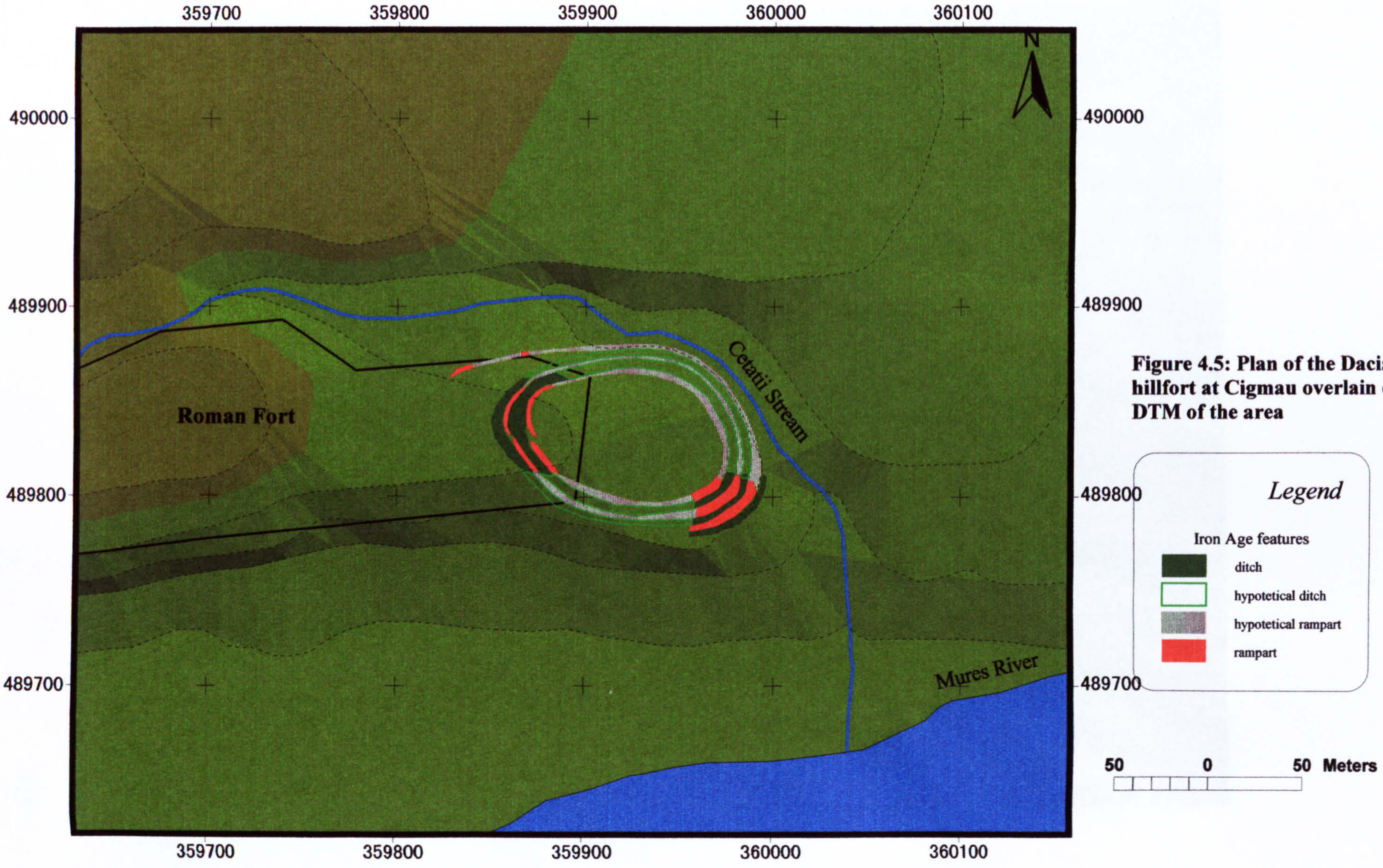


Figure 4.5: Plan of the Dacian hillfort at Cigmau overlain on a DTM of the area

Figure 4.6: Aerial photo of the hillfort at Costesti-Cetatuie (WSH)

Figure 4.7:Aerial photo of the hillfort at Costesti-Blidaru (WSH)

Figure 4.8: Aerial photo of the *area sacra* at *Sarmizegetusa Regia* (WSH)

Figure 4.9: Aerial photo of the hillfort and tumuli at Cugir (WSH)

Figure 4.10: Aerial photo showing the remains of the fortified site at Bretea Muresana destroyed by modern quarrying. Surviving rampart is still extant (left), under tree coverage (WSH)

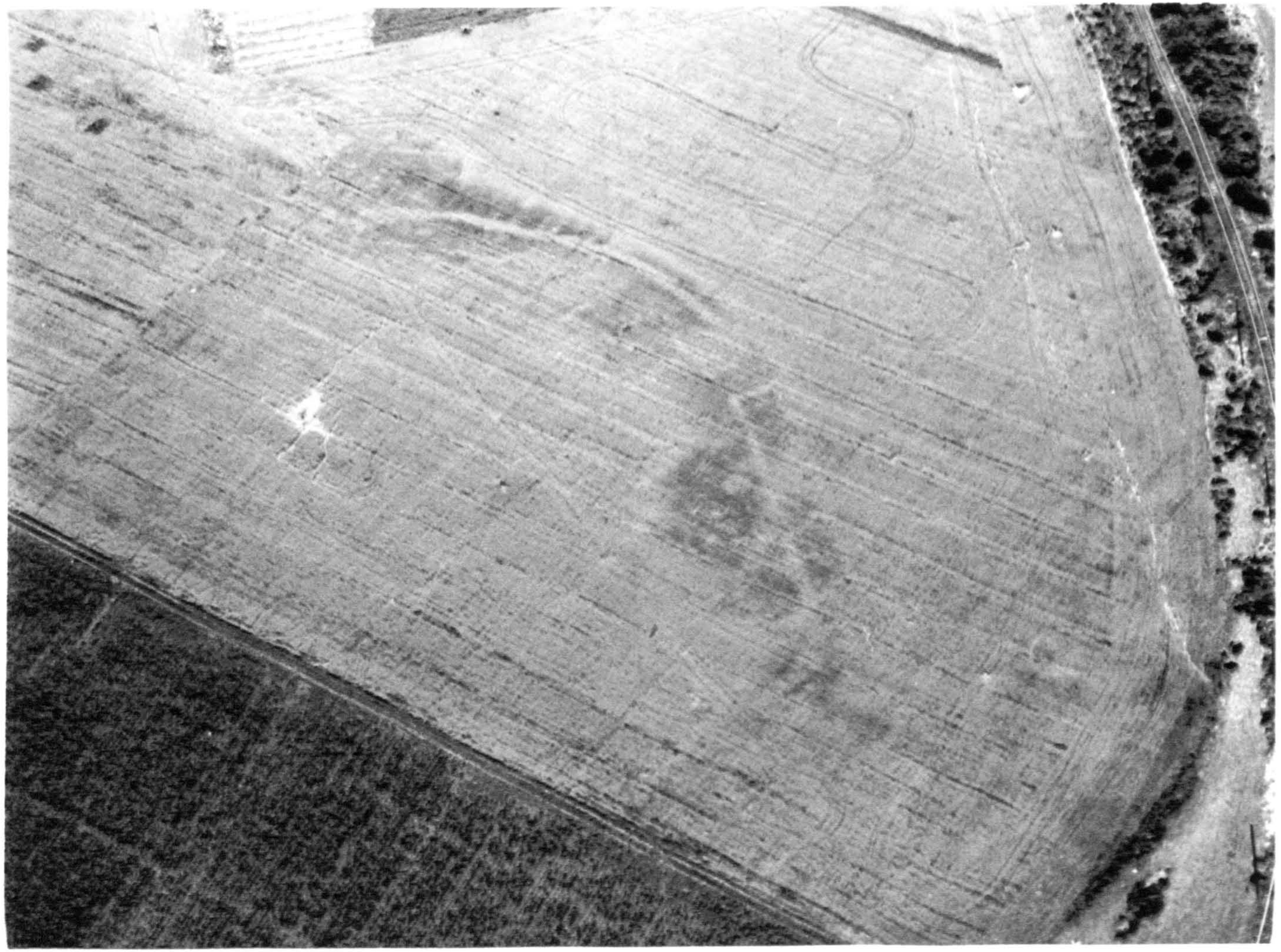


Figure 4.11: Aerial photo of the multi-period settlement at Simeria (WSH)

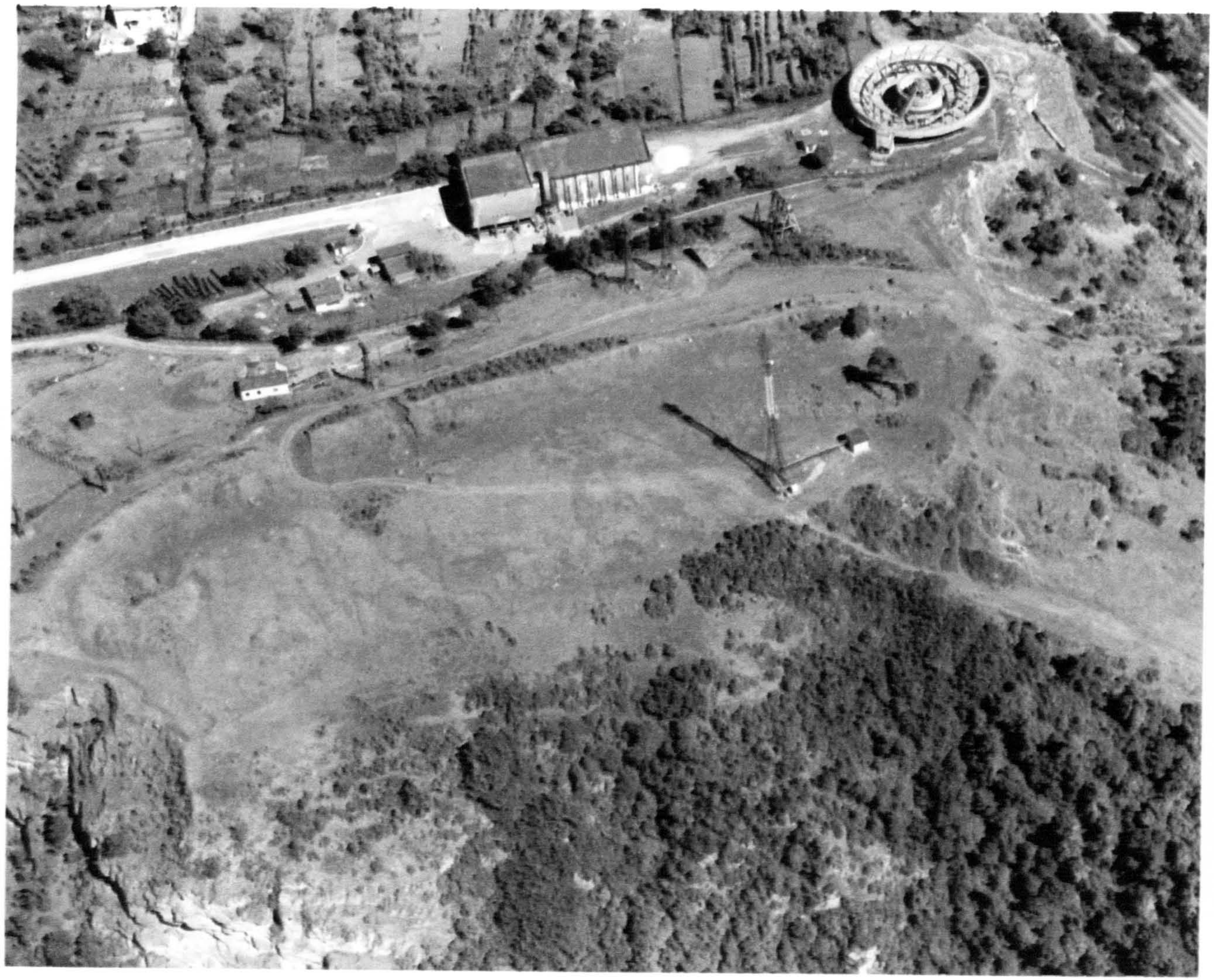


Figure 4.12: Aerial photo of the hillfort on the Sampetru hill –Hunedoara; the large enclosure dates in the Hallstatt period but a smaller circular enclosure is visible towards its edge (left), perhaps related to the Dacian occupation of the site attested by artefact discovery(WSH)

Figure 4.13: Aerial photo of the late Dacian infant cemetery excavation at Hunedoara-nearby the medieval castle (IO)

Figure 4.14: Aerial photo of the citadel hill at Deva (WSH)

Figure 4.15: Quarry on Bejan hill nearby Deva (IO)

Figure 4.16: Magura Calanului quarry (IO)

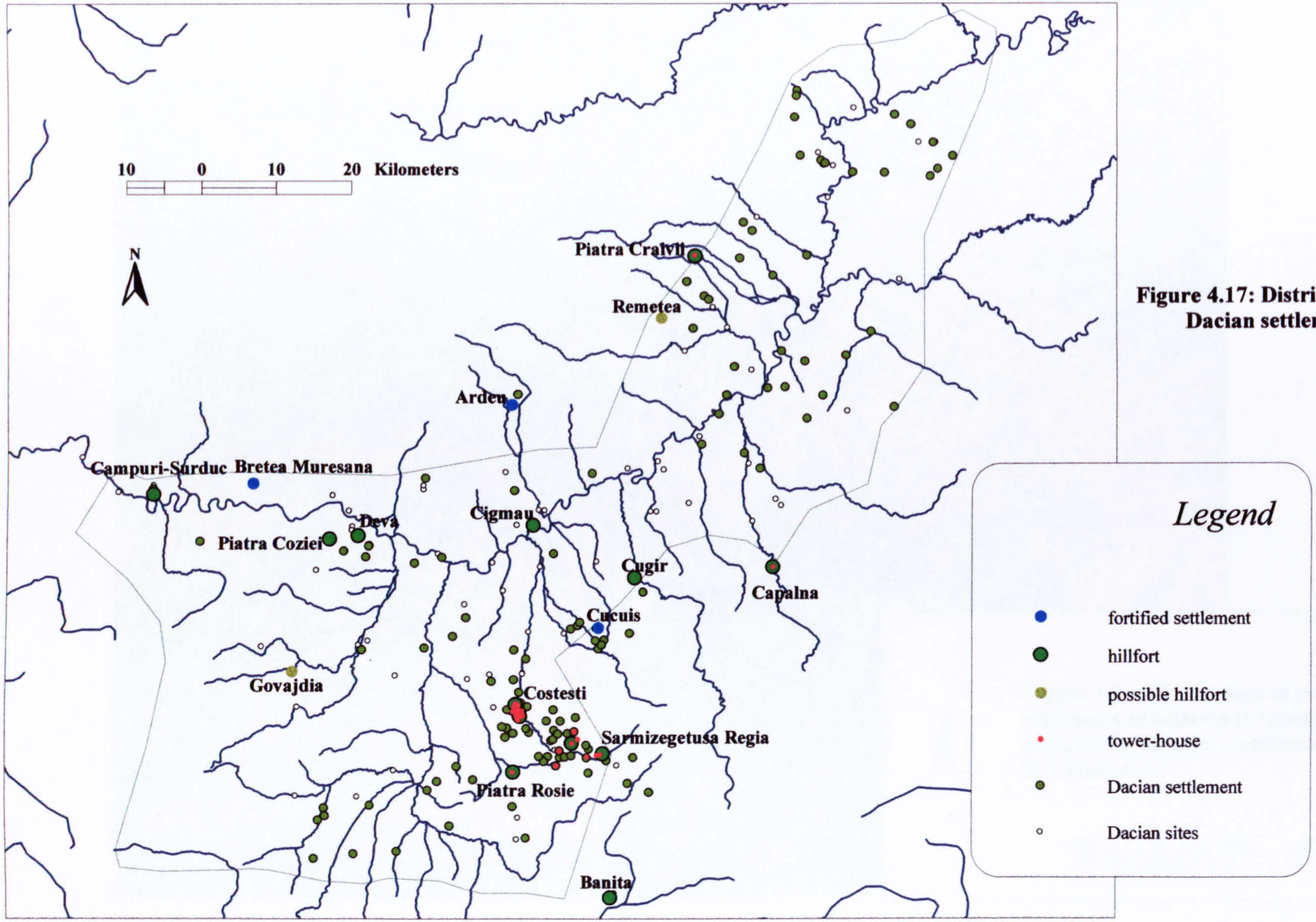


Figure 4.17: Distribution of Dacian settlement

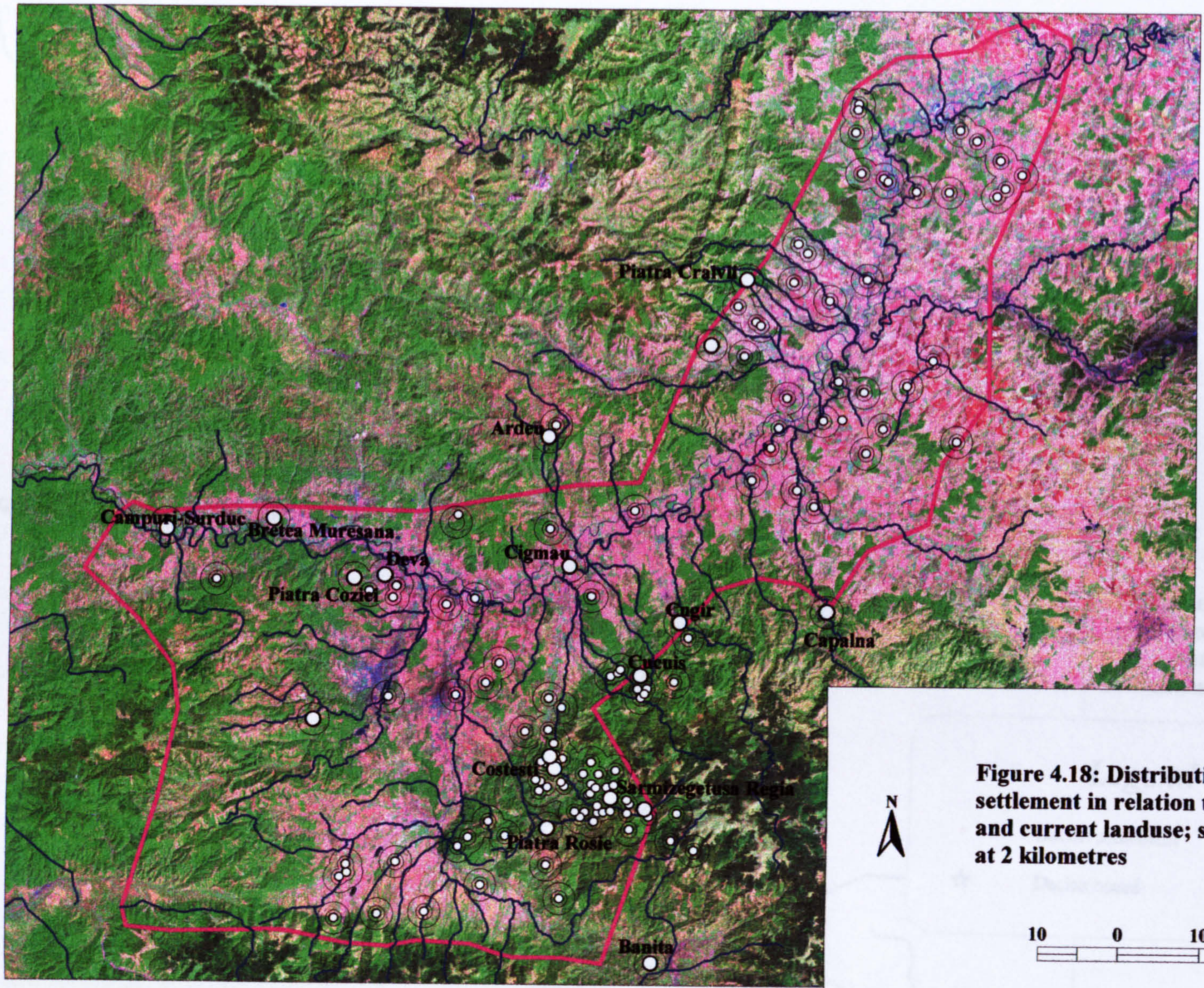


Figure 4.18: Distribution of pre-Roman settlement in relation to topography and current landuse; settlement buffers at 2 kilometres

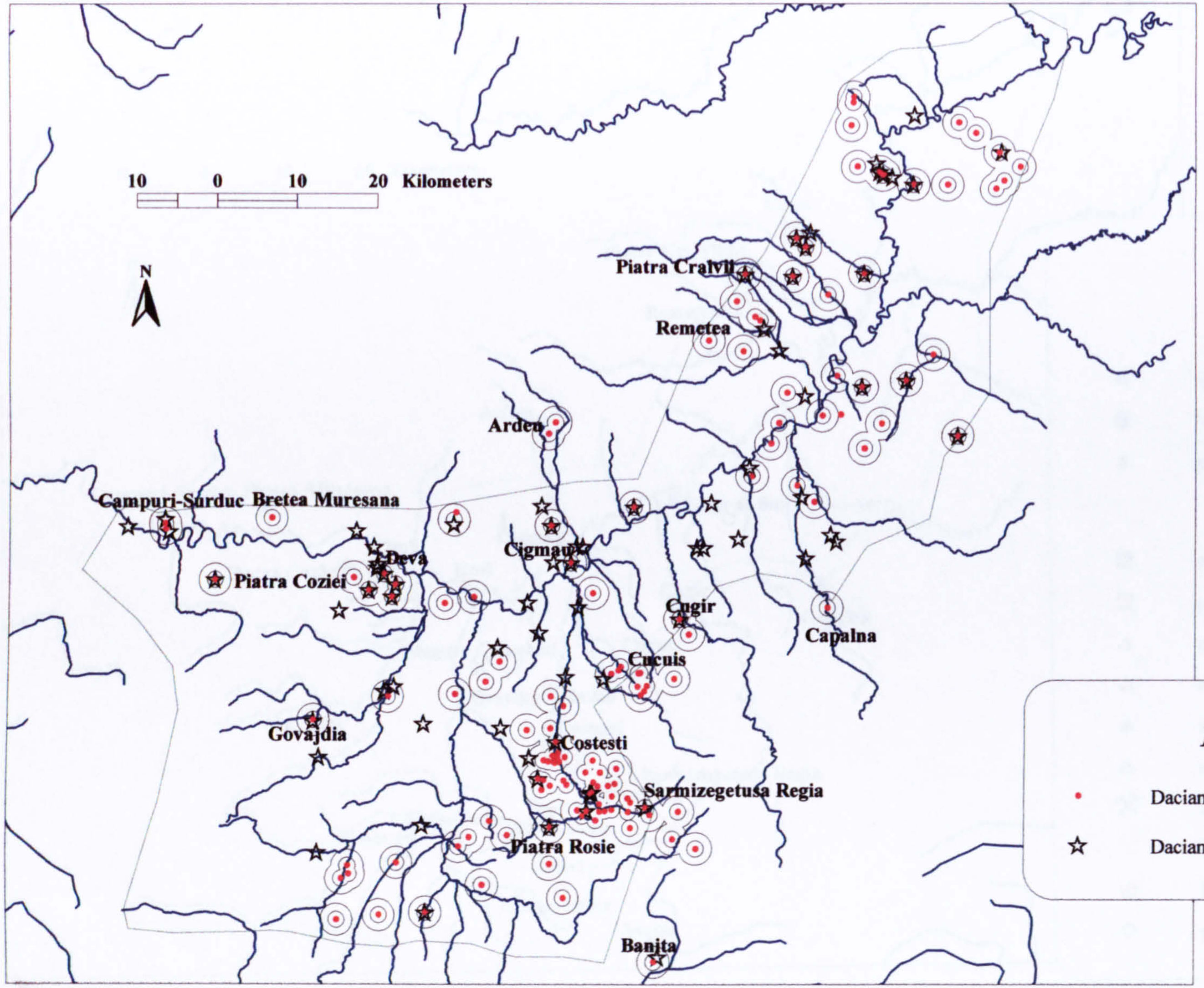


Figure 4.19: Distribution of Dacian hoards in relation to settlement locations; settlement buffers at 2 kilometres

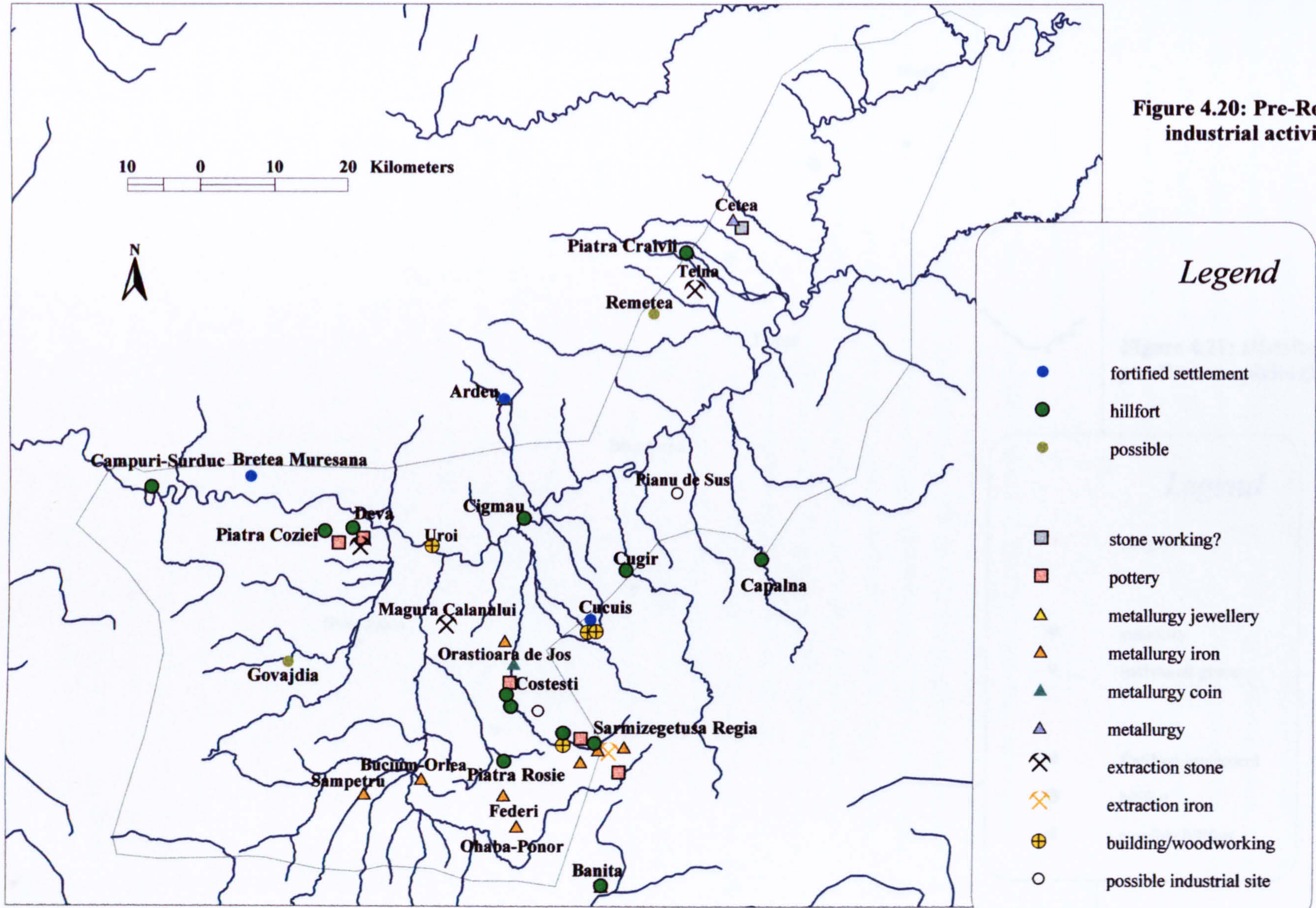


Figure 4.20: Pre-Roman industrial activity

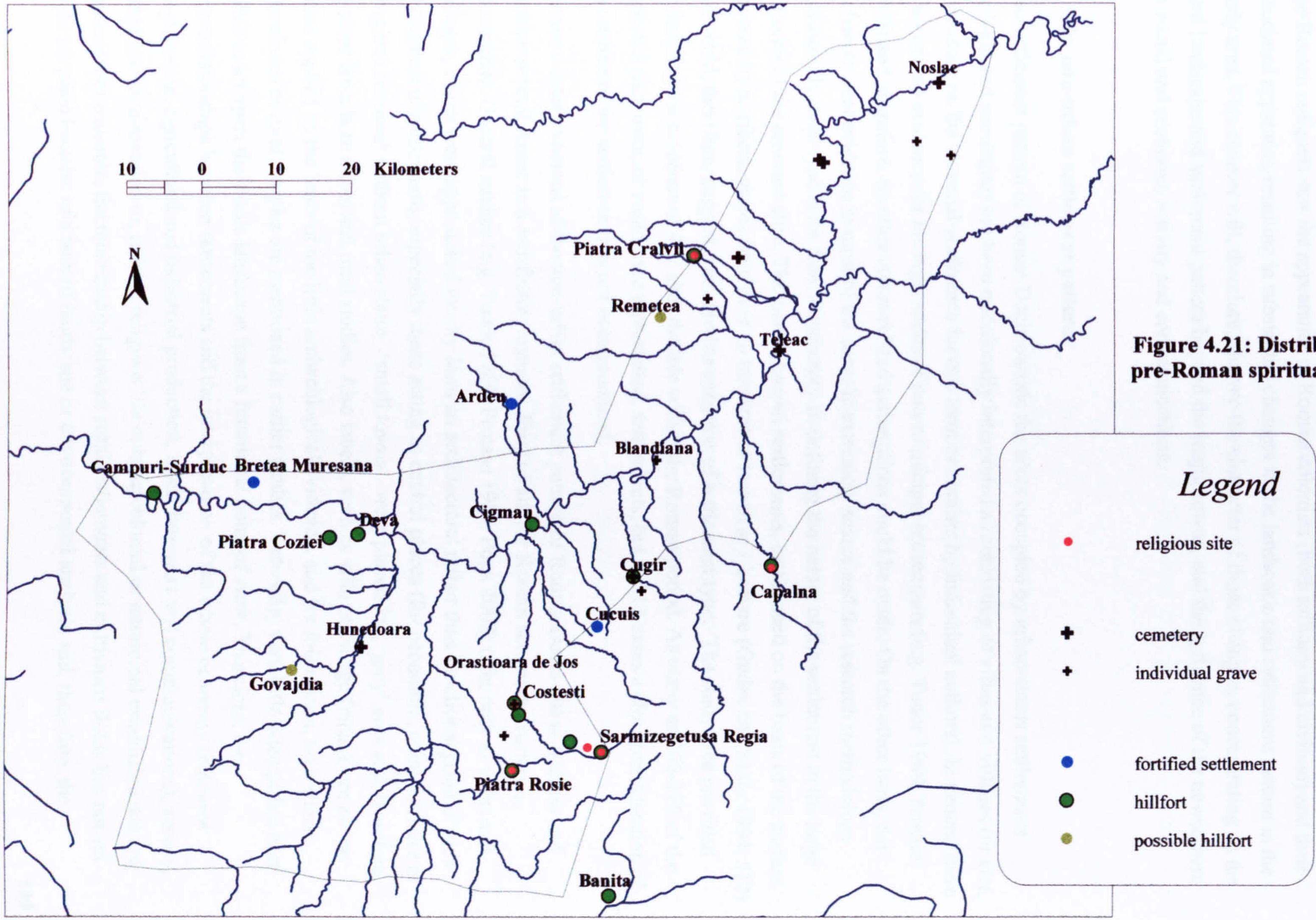


Figure 4.21: Distribution of pre-Roman spiritual activity

Chapter 5: The Roman landscape

The Roman conquest saw the appearance of Roman colonists (both military and civilian) and their associated apparatus, resulting in substantial changes to the landscape and settlement pattern in the study area. This chapter will, therefore, analyse the character of those changes, concentrating on the rural landscape and settlement pattern beyond the major towns, and the influence of the newcomers on social and economic activity and communications.

1. The non-urban settlement pattern

The settlement pattern of Roman Dacia outside the areas occupied by urban-status settlements (*colonia* and *municipia*) has been traditionally interpreted as consisting of villas and villages (or *vici*, depending on the personal preference for one term or another by individual authors). In general there is no written evidence for the legal status of non-municipal settlements (e.g. Tudor 1969; Protase 1968) and, therefore, no other status-related assumptions could be made. On the other hand, the archaeological evidence in most of the cases is extremely scarce and the research methodology traditionally employed is far from satisfactory in defining the nature of the settlement in the large majority of the reported sites. The size of known settlements, established on the basis of the surface covered by artefacts, varies from over 10 hectares to less than 1 hectare (Gudea and Motu 1994, 512) and could, therefore, suggest considerable variation of settlement type. The study area provided archaeological evidence of 402 sites datable within the Roman period. As many as 266-270 of the reported sites were, or could have represented, settlements, but in 213 cases a clear identification of the nature of the settlement has not been produced.

Previous interpretations of the non-urban settlement pattern of Roman Dacia fail to address and resolve several issues in a satisfactory manner. First of all, the Roman settlement pattern is incomplete. General studies (e.g. Tudor 1969; Protase 1968, Popa 2002) refer only to villas and villages, which were approached mostly from an architectural rather than functional point of view. Categories of settlements, especially those acting as central places (for economic, administrative or religious services) without urban status -'small towns'- were placed in a 'grey' area and, therefore, omitted from both urban and rural studies. Also labels, such as villa or village (*vicus*), are all too often applied on the basis of too little archaeological evidence, and for this reason, no stationes, mansiones or rural temples are mentioned in earlier studies. Secondly, very little attempt has been made to interpret the whole landscape from a functional point of view. Therefore, the interrelationships between settlements and the interpretation of the whole economy (resource exploitation, agricultural and industrial production, trade, transport and communications), society, administration-taxation or, indeed, religious life outside colonial or municipal establishments are unclear. For example, the relationship between rural settlements and cultivated fields has not yet been revealed because of a lack of landscape or environmental analysis and, therefore, the

agricultural economy of these sites is an assumption based largely on their location in regions with known agricultural potential, and sometimes on finds evidence. Also, land divisions and the division of the landscape within the administrative territories of the towns are unknown. Finally, within previous interpretations, the dominance of the Roman element is evident, as almost invariably these are represented by Roman architectural models based on the use of stone walls, bricks and tiles. 214 sites seem to have used features such as stone walls, bricks, tiles, mortar, wall plaster -sometimes with painted decoration- or, indeed, elaborate pavements. However, very few sites have been recognised as settlements belonging to the native Dacian population and even fewer (e.g. Cetea, Noslac, Cicau) have provided evidence for continuity of occupation from the pre-Roman to the Roman period.

1.1 Individual settlement: villas and homesteads

Much debated in archaeological literature, use of the name 'villa' was strongly influenced in the beginning by the phenomenon of Italian luxury villas and ancient literary descriptions and prompted scholarly interest, especially in relation to the lavish artistic expressions of luxury life within villa architecture (see discussion in Smith 1997, 5-10). However, such a model would have hardly done justice to the large majority of Roman buildings in the rural landscapes within the provinces, especially those in the non-Mediterranean Europe; nor could it cover the functional complexity of the villa phenomenon, especially in relation to its economic activities. But the identification of economic functionality or that of occupational character (whether temporary, seasonal or permanent) is usually a result of more in-depth post-excavation analysis, while construction technique or site plan, normally identified by archaeological survey, is nowadays the most common mode of identification and research into rural archaeological features. For this reason, presumptive interpretation as a villa still relies on architectural data. The rural setting is one of the essential defining features, along with stone architecture (at least in part -Wightman 1970, 139) but, as Smith argues (1997, 10-11), more recent evidence of romanised layout of farm buildings in timber (e.g. Druten in Holland) or Roman 'urban comfort' (e.g. bath buildings among round or rectangular timber structures at Harting-Garden Hill or Barnsley Park IV) can also give support to villa/proto-villa site interpretations. Therefore, the term 'villa' has ended up by being generalised in the context of Roman provincial archaeology to include farms of Roman date, with signs of Roman influence, either in their use of building materials, or their architectural design. These might include features that are usually classified as 'urban comfort' (such as baths, hypocaust installations and elaborate flooring and wall painting). In accordance with their functions, essentially of accommodation and economic (agricultural and industrial) production, they are supposed to include multiple buildings falling into two main categories, the *pars urbana,* (including the house and baths -whether within the same building or as a different complex), and the *pars rustica* (containing ancillary buildings largely related to economic activities), all of them located within an enclosure.

The total number of villas within the study area, as indeed, throughout Dacia is uncertain. Less than 30 appear on the published heritage lists

(http://www.ministerulculturii.ro/patrimoniu/patrimoniu_index.html -visited 14.04.2004) though this is clearly an underestimate. For example, in the mid-Mures valley some 9 villas are listed by the heritage authorities, but the present analysis suggests a higher figures. In some 20 cases the evidence has been considered sufficiently strong to indicate with reasonable confidence the presence of villas, but as many as 108 such sites could have existed in Tara Hategului and the mid-Mures valley on the basis of more fragmentary remains currently attested. Very few examples have been excavated to any great extent, but unfortunately not all of them revealed the entire site layout to support the typological identification of the settlement. The *pars urbana* has constituted largely the main focus for excavation. Indeed, for some examples the existence of ancillary buildings and an enclosure are yet to be confirmed. In other cases, even if such elements were identified on the ground surface, their location was not included in the site plans, so it remains difficult to establish what the site might have looked like. This situation is not unique in Roman provincial archaeology. Similar problems are encountered in Britain or other European provinces in relation to older excavations (Smith 1997, 20), but in those areas, more recent excavations had since been undertaken in villas than is the case in Romania, which has helped to improve outdated interpretations.

However, care must be taken not to over-estimate their number by the identification methodology employed. When this methodology relies on fieldwalking, the identification has tended to be based on the presence of stone walls, bricks, roof tiles, and sometimes the discovery of hypocaust materials, *tesserae* or painted wall plaster. Unfortunately, these features are proof only of the use of romanised building materials and techniques, and perhaps of a concern for providing some elements of urban comfort. But since such features are not restricted to villas, (e.g. evidence of such features in the small town at Cristesti -see Husar and Man 1998, 58), this evidence alone, without other indications of the size and layout of the site, does not preclude the possible identification of the site as a *vicus*, mansio, temple, or even funerary construction. Previous interpretations were more relaxed in identifying villas in any solitary complex on agricultural land with evidence of Roman building material. This is probably a safe assumption when no site plans or more detailed research are available and for this reason most of them were probably villas, based simply on the assumption that in a normally developed Roman provincial settlement pattern the density of villas is likely to be higher than that of *vici*. In one case to the north of Alba Iulia (Figure 5.2) the site was thought by some to be a villa, but its plan consists of only one small building of square/rectangular shape, unlikely to be a villa since no other (ancillary) buildings, or even a multi-roomed house could be identified. Nonetheless, over 20 sites have been identified as certain or very likely villas (figure 5.26), and the evidence is considered in more detail below.

Hobita (Hobenilor hill –figure 5.24), overlooking *Sarmizegetusa* from only some 1.3 kilometres distance away to the south of the town is one of the very few villas of Dacia where the layout of the enclosure and of the buildings within is known. The yard, defined by stone enclosure wall, is irregular, its shape dictated by the local topography (although rectilinear, not organic), and encloses an area of 0.58 hectares (Floca 1953, 744-5). The wall, built in stone and mortar, was well preserved (up to a height of 0.8 metres built on top of a foundation 0.7 metres deep and 0.9 metres wide) despite the fact that the mortar linking the upper courses of stone has disintegrated (mention in the

published report of only topsoil found in between the stones of the upper courses contrasting with the use of mortar in the lower courses can surely only be interpreted in this way, and not that dry stone was used on top of a mortared wall). No indication of the entrance has been found, but it was supposed to have been located on the western or northern side as being the most accessible (Floca 1953, 745).

Within the enclosure the excavators found three buildings in stone and four in timber. Two of the stone buildings, a square-ish construction of 7.90 by 9.50 metres (7x7.70 inside) built along the eastern enclosure wall (I) and a multi-roomed construction of 25.3 by 15 metres (II), have been identified as of residential use; the third -and largest stone building of 20.20 by 38.40 metres (III) along with the timber buildings *a*, *b* (5 by 4.50 and 4 by 3.50 metres respectively, located inside construction III along the northern and north-eastern walls), *c* and *d* (according to the plan about 15 by 3 and 12 by 2.5 metres along the northern and north-eastern enclosure walls) were interpreted as ancillary buildings. Construction I could have had an upper storey (tower) and was covered by Roman-fashion tiled roof which was also used for the constructions II, a, b, c and d. It was paved with *opus signinum* and the inner side of the walls displayed decorated plaster and despite the lack of structural evidence of timber, its use to some extent is indicated by discovery of long iron nails. Construction II, identified as the villa house, had several rooms grouped in a slightly imperfect rectangular block, with large rooms at both eastern and western ends divided by a middle row of smaller rooms. The largest space (8) on the western side of 12.60 by 8.90 (9.60) metres and the long narrow room (corridor?) (7) to the north of it, along with the southernmost of the median small rooms (5) were unpaved and were interpreted as probably having clay floors (but 0.4 metres lower than the level of the other rooms!); they were therefore interpreted as having a utilitarian purposes and not covered by the roof (Floca 1953, 750), though this is unlikely in the light of the current interpretations of the architecture of villa houses (Smith, 1997). Room 3 and the L-shaped space between rooms 3 and 5 (4 -interpreted as a 'corridor') were paved with a layer of stones on clay and another one of bricks on top of it, while room 1, running along the entire eastern part of the house (14 by 5.70 metres), was paved only with bricks. The latter space was interpreted originally as an 'inner courtyard' (Floca 1953, 747), but its brick pavement indicates that the space was surely protected by a roof. The only traces of a hypocaust (some 0.5 metres lower than the stepping level in the surrounding rooms) come from the cramped 'room' 2 (only 1.90 by 1 metre!), where the hypocaust in association with one fragment of clay pipe was considered as a basis for its identification as a bath. Entrances in rooms 2 and 3 were marked by marble slabs (Floca 1953, 750). Only a few of the finds are mentioned in the report, such as *terra sigillata* pottery, iron artefacts and two clay lamps, along with fragments of decorated wall plaster (other details are missing). Construction III occupies a central place within the enclosure and is defined by its stone foundation walls (18.40 by 36.60 metres) with 2 timber-walled inner cells (a-5 by 4.50; b-4 by 3.50 metres) attached to its northern and eastern outer walls. Because of the dimensions of the building, it has been interpreted as a courtyard, with only its timber structures covered with a tiled roof. The timber buildings on the inside (*a* and *b*) and the other two attached to the northern (*d* –10 by 2 metres) and north-eastern (*c* –12 by 2 metres) enclosure walls of the villa were interpreted as annexes based on their different construction material

in association with the finds produced by excavation (iron long nails, lock fragments, 2 keys and a small quantity of pottery in timber buildings *a* and *b*; large quantities of pottery including a fragment from an amphora, a lamp, millstone fragments, ash in a thick layer and a coin dated to the reign of Antoninus Pius in timber building *c*; and finally a ploughshare near building *d*.

Santamaria-Orlea located some 17-18 kilometres to the east-northeast of the colonial settlement at *Ulpia Traiana Sarmizegetusa* is considered among the largest villa establishments in Dacia. The enclosure layout according to antiquarian accounts was of about 220 by 150 metres and included at least 5 buildings, visible at that date as raised platforms/banks of square-rectangular shape, along with another small circular stone enclosure interpreted as a possible tower (more likely a small religious or funeray *tolos*) to the east, outside the enclosure (Martian 1910, 341, nr. 535). In 1970, fieldwalking over the area already affected by modern agriculture produced Roman pottery and construction materials, along with a silver *denarius* of Septimius Severus of AD 201-10.

In 1971 a small area within a 150 by 15-40 metre zone untouched by modern ploughing was excavated (Popa 1972), revealing the remains of 2 of the buildings within the villa complex. One of them was of 22 by 15.8 metres on an east-west orientation, with multiple rooms and with sufficient indications to identify it as the villa house. It overlapped earlier traces of occupation from the early Bronze Age and Iron Age (Hallstatt), the latter being explicable given the immediate vicinity of the large enclosed settlement from Subcetate with a similar date of occupation. Only the eastern row of 3 rooms was excavated in more detail. Another construction some 40 metres west of the villa house, also built in stone and covered with a tiled roof, had very similar dimensions (23 by 15 metres) but no traces of interior division of space were found. Finally, a further possible building with traces visible on the ground surface, but which has not been researched and with unknown function, was located 120 metres to the east of the villa house.

The villa house was built in *opus incertum* as usual (outer walls of 0.75-0.8 metres and the inner walls of 0.5-0.6 metres) and covered with a roof made of tiles, some of which would have been fixed with iron nails (one example of such tile was found during excavation). The rooms (from north to south 3.7 by 3.7, 4.35 by 3.7 and 5.4 by 3.7 metres) communicated through 0.9 metres wide entrances and were apparently paved with loosely patterned bricks (with S-shaped finger-made lines before firing). The southern room was equipped in the second phase of occupation with a T-shaped hypocaust installation with 3 rows of brick *pilae* at the southern end. A central 'corridor' running north-south from the entrance leading towards the southern area was apparently covered with "concrete-*opus signinum* slabs" supported on 2 stone foundation walls built parallel to the eastern and the western walls of the room. The whole building had perhaps another row of rooms along its western side with a probable width of 4.8 metres, which allowed a large hall-like central space of some 14 by 10-11 metres. Another possible structure/room of small dimensions might have been attached to the north-eastern corner of the building and the presumptive interpretation was that it might have served as a *praefurnium* for the hypocaust, but without any argument put forward for such interpretation.

The house had 2 distinct phases of occupation, identified only on the basis of vertical stratigraphy. According to the excavation report a 3rd phase was dated after the villa has partially gone out of use (Popa 1972 441), although the presence of a layer of mortar between the 2nd and the 3rd phases could also imply partial demolition and complex refurbishment, not necessarily a break in occupation. In this case the 3rd phase could represent only a sub-phase of the 2nd phase of the villa. Indeed, this seems more likely since the collapsed roof covers this 3rd phase as well. The earlier demolition material could have derived from the demolition of the inner walls (which is attested by the fact that a demolished wall foundation is also sealed by the compact tile layer from the collapse of the roof - see Popa 1972, 441). The material resulting from the final dilapidation of the walls was later subjected to robbery and reuse in the early medieval period (as attested by pottery fragments), which is probably why no other architectural pieces have been found in situ. The finds included numerous pottery fragments, a chain fragment, iron nails and fittings, glassware fragments, spindles (or loom weights) and interestingly, an arrowhead. The pottery also presented some interesting aspects. As expected, the large majority was Roman coarse ware for storage (including amphorae) with a few examples of fine ware (tableware –red or grey), but there several fragments of Dacian fine ware were also identified, including one of a plate ('fructiera'-Popa 1972, 444-6).

The villa at Cincis was excavated in 1961-62, but the subsequent publication (Floca and Valea 1965) dedicated most attention to the cemetery associated with the site rather than to the villa house itself. The house is a rectangular construction, 22.7 by 15.5 metres, built in *opus incertum* and covered with roof tiles, with the inner space divided into 5 rooms. As in previous examples, the outer walls were thicker than the partition walls (0.75, 0.65 and 0.5 metres respectively). The alignment of the building is north-west to south-east. The whole length of the house was divided into 3 spaces. The first of them, running along the whole south-eastern side of the house, was a room of some 14.5 by 4.85 metres divided from the rest of the house by the widest of the partition walls (0.65 metres). Each of the other 2 sections was divided further into 2 different rooms (middle: 10 by 7 and 4 by 7 metres; north-western end: 8 by 7.9 and 6 by 7.9 metres) by walls of 0.5 metres in width. Modern ploughing seemingly affected the preservation of the structure and the original floor level has been preserved only in few places, but the report gives no details of the type of floors, wall plaster or other relevant features of decoration. The finds included among others the ubiquitous "Roman provincial pottery fragments" (coarse?) and "a few iron objects (including large nails, a knife, half of a pair of scissors, a door hinge), the pin of a bronze fibula, a round tack, spindles, fragments of a volcanic tuff millstone, of a marble *mortarium,* and animal bones" (Floca and Valea 1965, 167-169). The villa and the nearby cemetery were associated with the intensive evidence of iron ore extraction and reduction activity that took place in the area during Roman times.

A villa is located within the area of the modern village of Strei, in the immediate vicinity of the 13th century orthodox church and was discovered during restoration works undertaken during the late 1960s (Figure 5.12). The published information identifies the site as a villa with certainty without giving any details of its plan or construction technique, but intimates that the church, which contains re-used Roman *spolia*, was constructed within the area previously enclosed by the villa. Late Roman/post-Roman (4th century AD) occupation on the site is documented by the discovery of a

settlement containing semi-sunken houses and large storage pits (report by Popa and Lazin in Popescu 1970, 515).

Manerau villa (figure 5.24) has been the subject of one of the earliest villa excavation projects in Dacia (1912) and, indeed, the first within the study area (Mitrofan 1973). Although the entire surface occupied by the site has not been precisely identified, the villa house and one ancillary building were excavated. The walls were constructed in *opus incertum* of variable width (outer walls of some 0.7 metres with a thicker north-eastern wall; inner walls of 0.4-0.6 metres) and the whole building was covered with roof tiles. With dimensions of 20.7(30.5) by 19(19.5) metres, the house is twice the size of other villa houses in the study area (e.g. Hobita, Santamaria-Orlea, Cincis, Deva) and among the largest in Dacia.

The published plan presents a very divided internal space split into two almost symmetric areas by a 5.1 by 16.4 metres central space running along the whole width of the building. At its north-western end, the room showed traces of brick paving, *tegulae mammatae* and squared-section clay pipes. In alignment with the wall from the neighbouring room (K) an area with large quantities of ash and burnt wood was identified, which also contained a millstone, small bronze objects and fragments of a wide marble vessel (tray?). The space was interpreted (Mitrofan 1973, 145) as a *praefurnium*, but it is more likely to represent a wooden screen or partition wall between the central room/corridor L and its paved and heated northern end. The north-eastern part of the house was divided in 6 smaller rooms. One of them (H) is likely to have represented a transitory room towards the others in that area of the house (Smith 1997, 210 fig. 60) perhaps connected with a *triclinium*, given the quantity of pottery (even painted - imitation of *terra sigillata*?) and the iron spoon discovered there. The middle room from the northern side of the house and the smaller one from the north-eastern corner were both heated by partial hypocaust installations constructed in similar fashion and most likely from the very beginning, since the suspended floor made of 8-shaped *tesserae* was supported directly on the socle of the north-eastern wall (Mitrofan 1973, 145). In the south-western half of the house the flooring of the rooms M, N and O was not mentioned. The fact that the *opus signinum* floors of the rooms P and Q on the south-western side were found at 0.3 metres higher than in the rest of the house (including that in the room K, also in *opus signinum*) indicates perhaps a raised floor level. Indeed, this is very probable for room M, where bricks similar with those used for the hypocausts on the other side of the house (one with an illegible post-firing graffito) could suggest the presence of similar facilities here.

A second building was discovered near the first one and was aligned roughly parallel with it at 14.5 metres to the east; in between the two building, the yard may have contained other (possibly timber) structures, probably ancillary buildings. Built in a similar manner, with *opus incertum* walls (outer - 0.7; inner –0.5-0.6 metres wide) and tiled roof, it consisted of a row of 3 rooms aligned north-east to south-west which has survived only in part (at least 38.35 by 8.95-8.6 metres). The best preserved was the middle room (B), which had a pebble floor and wall plaster (probably not decorated). This room probably contined a collapsed stone oven; found in its south-western corner were large quantities of ash and animal bones and horns, a broken hand-made pot (Dacian?), a very used bronze coin and a bronze brooch; based on these finds it was interpreted as a possible kitchen. The room to

the south of it (A) was expensively paved with hexagonal *tesserae*. The floor from the room to the north (C) has not been preserved, but the space contained a mixture of roof tiles and bricks and some of the latter could have been used for pavement. Given the evidence from this building, it is hard to consider it as an ancillary structure. The only dating evidence mentioned is for the 3rd century AD and comes from a second coin, a *denarius* of Elagabalus (discovered in an unspecified context). Also from unspecified contexts come the handle of a bronze mirror, a key, a puncher, one small iron knife, a bone hook and some glass beads.

Another villa was excavated at Deva (figure 5.24) in 1966-1967 (now under modern buildings) and its report (Marghitan 1998) provides very interesting details. It identified a villa house of similar dimensions to the examples from Hobita-Hobenilor hill, Santamaria Orlea or Cincis (although the dimensions specified in the text –21.5 by 19.5 do not match the published site plan), but the internal division of space seems very basic. Partition walls (of 0.4 metres in width, except for the southernmost, which was 0.7 like the outer walls) divided the length of the house into 4 areas of variable width, one of which was cut in half perpendicularly by another wall. The plan resembles that of the Tholey-Sotzweiler (I) villa house (Smith 1997, 283, figure 73), Deva being slightly larger in size. The house, carefully aligned north-south, was surrounded by a small rectangular enclosure with a perimeter of 208 metres enclosing 0.26 hectares, of which 980 square metres were occupied by buildings in similar proportions to, but on a slightly different alignment from, the house. A number of the buildings almost completely blocked the southern and eastern sides. Most of them seem to have been largely built against the enclosure wall (0.7 metres wide) defined by narrower walls of 0.4 metres and, although not considered in the original interpretation, this might indicate a gradual process of accretion. Further to the west and south-west parts of 2 other buildings have been identified. The house and the 2 outer buildings were covered with roof tiles; no such material has been discovered in or around any of the buildings along the enclosure walls where alternative materials (shingles?) might have been used.

The general impression of a small and cramped site is contradicted by the finds. Firstly, the largest central room and the long room to the south had a hypocaust, along with the western building outside the enclosure; the 2 rooms of the south-western building outside the enclosure had tessellated floors. Moreover, the large central room and the 2 small rooms of the villa house, along with the rooms of the building outside the enclosure to the west were decorated with elaborate polychrome wall plaster in shades of green, yellow, red and blue. A fragment of a plinth indicates the use of columns and an apse was created inside the southern room of the house. The large central room has been interpreted as a 'hall' (Marghitan 1998, 305). But the archaeological evidence also indicates that one of the small rooms to the north of it might have been a *triclinium* (based on fragments of fine tableware and glassware discovered there) and that the long heated room to the southern end of the house could have been a bathroom. The latter was possibly attached to the house at a later date, since the wall dividing this space from the 'hall' had the same width as the outer walls (alternatively, it may have been intended to bear an equivalent weight load to an outer wall, perhaps for a–vaulted roof).

The buildings along the enclosure walls have been interpreted as ancillary and they give interesting insight into the activities carried out there. One of them which covered the whole south-eastern half of the eastern enclosure wall was paved with *opus signinum* and interpreted as a millstone workshop based on the discovery of numerous millstones, some of them unfinished. The activity carried out in the building on the south-western side of the yard (which might have had an earlier phase when it occupied only part of that side leaving the south-western corner of the enclosure accessible) was probably different, if the finds discovered there -large quantities of cattle and pig bones, Roman pottery, a few single sided knives and one sharpener- were a result of activities involving the processing of animal carcases and not the use of that particular corner of the yard as dumping ground before the extension of the southern ancillary building. At least one of the rooms from the north-eastern corner was used for storage, since it contained large quantities of pottery, mostly Roman storage types along with some tableware (plates) fragments of Dacian coarse hand-made pottery. Most of the Dacian pottery was represented by storage jars, but there were also a few examples of 'Dacian mugs' -one of unusually large dimensions (Marghitan 1998, 319-20). Finally, a square construction along the northern wall was very narrow (above 5 square metres) but had a concrete pavement and was probably a tower overlooking the Mures valley. Both of the buildings outside the enclosure, particularly that from the west, seem to indicate that they fall into the category of *pars urbana.*

The beginnings of the site are evidently early, as indicated by the deliberate deposition of a *sestertius* of Hadrian (AD 124-5) in the partition wall between the 2 small rooms of the villa house, and was occupied extensively until much later, as demonstrated by a very worn Trajan *dupondius* discovered in the 'workshop' and a Severus Alexander *denarius* of AD 227 (Marghitan 1998, 312-13). The site provided several indications that it had passed through a number of construction phases, some of them recoginsed in the original analysis. At least two major phases were supposed on the grounds that the villa would have outgrown its own enclosure. Other details, previously overlooked, provide even greater certainty that a number of phases were involved (e.g. the possible later addition of baths, or the enlargement of the southern ancillary building). However, the hypothesis that the site had expanded is less appealing than the contrary assumption, that it was originally significantly larger, including the villa house and the 2 outer buildings, and later had to reduce in size and confine itself to the limits of the small enclosure which was added later and which then followed an independent evolution. This would explain, for example, the difference of alignment between the villa house and the enclosure and its attached structures (or perhaps even the later addition of the baths, if one of the outer buildings -the western?- would have originally served as a bath complex). Indeed, the partition of estates would have been a frequent occurrence in the Roman period, as in any other (Smith 1997, 16-18; for analysis of traditional inheritance customs in Romania, see Stahl 1986).

Extensive excavation in 1966-1967 of the villa site at Aiudul de Sus (Valea Groapelor –figure 5.1 and 5.24) revealed the villa house and located 2 ancillary buildings, along with a section of a possible alley paved with pebbles leading to the house (from the gate?). The house (17.4 by 21.1 metres) was in a poor state of conservation with only the wall foundations still surviving and large quantities of disturbed Roman material littering the ground surface (including a fragment of a limestone column

capital). It was built in *opus incertum*, with small portions of *opus mixtum*, and had evidence of a tiled roof and hypocaust flooring to some extent (evidence of *tegula mammata*) (Winkler *et al.* 1968, 59-67). The house plan is similar in many aspects to other villa houses presented here, but the original interpretation of its layout (10 rooms) needs to be revised (see further discussion in this chapter below and figure 5.1): the main entrance was facing south-east and the internal space was divided into 3 main sections running along the whole width, one of which was further subdivided into smaller rooms. The impression of 10 rooms is created by what were probably several construction phases, as indicated by differences in wall widths indicated in the published report along with the brief mention that both quarry stone and river cobbles were used within the walls (Moga and Ciugudean 1995, 27). It is, therefore, probable that at a later stage the structure of the house might have contained one possibly semi-enclosed entrance 'corridor' (*porticus*?) developed along the width of the house (with the exception of its southern end where the plan is unclear) and with a depth of 4.5 metres. This space was followed by a room of similar length, but slightly wider (approximately 5.5 metres). Finally, the third main section of the house presented a plan in which 2 pairs of small rooms were displayed on each side of a large central room (hall?). Room 6 disturbed a sunken house of early Iron Age (Hallstatt) date. Finds from the site mentioned in the excavation report included an unidentified fragment of large stone with a moulded frame on the edge, a brick with traces of pre-firing cursive inscription and clay pipes. The pottery was mainly wheel-thrown, in both its red and grey variants, including some fine wares. A large stone mortar and fragments of millstone give hints of grain processing and other tools, like ploughshares (including a complete example of Dacian type) and a sickle fragment, indicate agricultural activities. Other finds include iron nails of variable size, a fragment of a large iron chain, 2 chisels 2 keys, lock and door hinge fragments, but also 2 knife fragments and a spear butt. The ploughshare is not the only example of Dacian material on the site; at various points inside the villa house, in one of the ancillary buildings and elsewhere a Dacian storage pot and other fragments, including one from a plate ('fructiera'), were discovered. Unfortunately the dating of the site was placed within the broad context of the Roman occupation (2^{nd}-3^{rd} centuries AD) with no other details provided.

The site at Rapoltu Mare (92) is likely to represent another villa, indicated by Roman pottery scattered on the ground surface which prompted a trial small-scale excavation in 1999. The research produced a possible wall (stone?), along with Roman material (bricks and tiles, Roman pottery, including *terra sigillata*, cattle bones (*bos taurus*), a fragment of coloured glass and one of an iron pin. Medieval pottery was also present, indicating later occupation or robbery of Roman material (Balos and Tutuianu in http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=890; visited 30.04.2004).

The site at Rahau (361) was subjected to partial excavation in 1960, which revealed the remains of two separate buildings some 20 metres apart, both built in *opus incertum*, which have been identified as very probably a villa site. Two rooms on the south-western side of a first building were excavated. The outer wall continued on both sides of these rooms and at least another internal wall perpendicular to the southern room towards north-east hints that the building extended further in those directions. Both rooms were paved with bricks and one of them (the northern of the 2

discovered) had a hypocaust floor. These rooms also had painted wall plaster (red and white). The building overlapped earlier layers of Dacian and Neolithic (Cotofeni) occupations documented only by pottery. The second building also had multiple rooms (4 or 5 rooms excavated from the north-western end of the building), although the width of the walls ranged from 1 to 0.4 metres. In this area the finds included a bone pin, an iron key and Roman pottery, including *terra sigillata*. Nearby at 'Fundatura' the excavation discovered pottery dated to the 4th century AD, indicating a late occupation on the site (Moga and Ciugudean 1995, 148 nos.4 and 12; Popa 2002, 151, no.507/1; Mitrofan 1972, 147-8). Probably from this area comes a funerary monument (CIL III 971) of a veteran of the legion XI Claudia and his family, which led Mitrofan (Mitrofan 1972, 148) to suppose an early date of foundation for the villa.

The published excavation reports regarding the villa from Seusa (site 22; figure 5.5) contain only brief information about the Roman occupation of the site (Ciuta 1996- http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=347; 1997- http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=565; and 1999 – http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=876; visited 30.04.2004). It was recorded only in terms of its stratigraphy, without a published site plan, and its interpretation as a villa was proposed as the most probable. The site contains evidence of stone walls, tegulae, traces of burnt materials (from timber structures?), 'metallic objects' and Roman pottery, some of which were disturbed from their stratigraphic context by modern ploughing, along with later (post-Roman and medieval) materials. The data produced by geophysical survey on the site (Figure 5.5) seems to confirm the interpretation of it as a villa, with the house of essentially similar dimensions to other villa houses in the study area and a plan which falls in the usual category of 'block building' with internal division of space into at least one row of 2-3 small rooms at one end leaving space for a large room towards the other. The excavation indicates that at least one pit which cuts through the entire archaeological stratigraphy (some 2.5 metres in depth) was associated with the Roman occupation. The villa overlay and partially damaged the layers of earlier occupation of late Dacian and middle La Tene (Celtic?) date (see chapter 4) and which, in turn, overlay Neolithic (Starcevo-Cris) traces (see Ciuta 1997- http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=565; and 1999 – http://www.cimec.ro/scripts/arh/cronica/detaliu.asp?k=876; visited 30.04.2004). One of the pits discovered contained a child burial of Dacian fashion (information M. Ciuta and I. Haynes).

The Roman occupation in the area of the modern village of Ghirbom is dense, with at least 4 sites of Roman date, of which at least 2 (possibly 3) are very likely to represent villas. That in the immediate vicinity of the village (Intre Veli, 236) is estimated to be a villa extending over some 3-3.5 hectares which was subjected to excavation between 1974 and 1979. Part of the villa house was revealed in an area of 10.60 by 8.40 metres which was not damaged by modern ploughing. The building was oriented NNW-SSE and the excavation revealed one room 5 by 3.6m along with small areas of other rooms. A 1.5 metre area between the south wall of the room and a brick wall was heated by a hypocaust installation built on an *opus signinum* floor and 3 rows of *pilae*. The hypocaust continued along a narrow space (according to the site plan approximately 1 metre wide) in between stone walls thinner than the outer walls (some 0.4m as opposed to 0.8m?) to the east, which was interpreted by

the excavators as a "heated corridor" leading towards a presumed second heated room. Unfortunately, the area excavated is insufficient to clarify the problems raised by these interpretations of the use of internal space. The finds are described as 'poor' and, apart from the usual Roman pottery, iron nails, a stamped tile fragment (VII) and a 3.5 cm bronze brooch are mentioned; but, exceptionally on this site, fragments of glass indicated the presence of windows (Moga 1995). Window glass is a rare occurrence in Dacia, but its presence has been noted before from the villa at Apahida outside the study area (Mitrofan 1972, 131). Another probable villa site near Ghirbom is located at at Capul Sesului (238), discovered through a trial excavation in 1967 which attempted to locate a cemetery indicated by accidental discoveries in the area (located later few hundred meters away to the west –site 239). Only a brief report with no site plan has ever been published. The stone and mortar building seems to have been revealed to only a limited extent, but bricks (some with un-mentioned *officina* stamps), tiles and hypocaust traces are mentioned in relation to its architecture. On the nature of the finds, special mentions has been made only of a silver coin of Hadrian recovered in the area immediately adjacent to the building, to significant quantities of Roman pottery fragments, and to unspecified "iron objects" (report by Aldea *et al.* in Popescu 1970, 507; Moga and Ciugudean 1995, 98-100).

At Valea Lupului (511) limited rescue excavation (1981-2) revealed parts of a large site badly damaged by modern intervention. The stone walls survived until after the Second World War up to a height of 2 metres, but were deliberately damaged afterwards with the intention of converting the land to agriculture (information Dr. A Diaconescu). The excavations exposed the *opus incertum* foundations of an apsed room provided with a hypocaust and evidence of a tessellated floor (with figure of eight-shaped and rhomboidal *tesserae*). They also uncovered a 50 metre long part of the enclosure wall (0.9-1.0 metres wide, in *opus incertum* on a base of boulders bonded with clay) with a tower structure attached to it which replaced a burnt timber construction. The finds included large quantities of Roman pottery. There is another mention of a site with pottery and stone building traces, mortar, bricks, tiles and *tesserae* in the place called 'Valea Verde' (site 510), but it is unsure whether they describe the same site or another similar one. A small bronze statue (14cm) (genius) could come from the same area (Popa 1989, 55-56; Popa 2002, 209).

The remains from Blandiana (112) are very scarce and inconclusive. They indicate pre-Roman followed by Roman occupation (see chapter 4). However, the Dacian material was discovered accidentally and disturbed from its stratigraphic context, and the limited excavation (1974) revealed the remains of only one building. Mentioned among the finds, along with large quantities of pottery, bricks and tiles, were a clay lamp, a lead weight and a bronze plaque. What is completely missing is a confirmation of the character of the settlement and so far, at least for its Roman phase, nothing indicates a nucleated settlement (village). Across the river there are more substantial traces of extensive occupation indicating a larger settlement and there seems little chance that 2 large settlements would have emerged at such short distance from one another. Another possibility is that the site was a combination of villa and native village, on the model of Vintu de Jos (415 -see below)

Apart from one example of villa discovered through field walking and subsequent geophysical survey (Oarda 2 - see below), the newest additions to the list of *villa* sites in Dacia are examples at Oarda, Sibot and Vintu de Jos which will be discussed below in more detail. All three were revealed as crop marks during summer reconnaissance between 2000 and 2003, and were confirmed by subsequent field visits.

During the dry summer of 2000 aerial reconnaissance identified a previously unknown Roman villa some 1.5 km to the south of the modern village of Oarda (Figures 5.3-5.4) and 3.5 kilometres to the south of the colonial-ranked town of *Apulum*. It was revealed as a series of negative crop marks in a ripening cereal crop, probably barley (Hanson and Oltean 2003). Some of the fields in this area are more extensive than the pattern of strip fields that is the norm (see above chapter 1), so that a reasonable proportion of the remains of the building complex was more readily visible. The villa lies on raised ground overlooking the river Sebes on its western side, by its confluence with a small stream. A visit to the site in August 2001 revealed that the surface of the field was littered with building materials (stone, tiles, bricks and mortar fragments) and pottery fragments of Roman date and, therefore, confirmed its identification as a villa, although this also indicates that the remains lie immediately below the surface and are regularly being disturbed by plough action. The local archaeological record notes chance discoveries from pre-Roman times and much Roman material somewhere in that area, such as a column capitals, building materials and kilns (Moga and Ciugudean, 1995, 132).

The remains are quite extensive, spreading across an area of approximately 1 hectare (see figure 5.4) and provide one of the few examples of villa sites in Dacia where multiple buildings are known. There are a number of separate building ranges, some showing signs of subdivision, some connected to a wall. They appear to be grouped around three sides of what was probably a large central courtyard (C) of irregular, perhaps fan-shaped layout, but details of the individual buildings are not sufficient to offer interpretations of their function. The dimensions and internal arrangements of one of the structures (A) are reminiscent of one of the buildings of the villa from Chinteni (figure 5.24), near Cluj Napoca (Alicu 1998). At least 2 overlapping distinctive phases are recognisable in the southern area of the site, involving one of the buildings on the south overlapping a small, subdivided rectangular structure (B) (Hanson and Oltean 2003, 109-114). The latter is reminiscent of the basic villa plans seen in the area (9 by 13 metres, northwest-southeast orientation with large room –hall and end area subdivided into 2 smaller rooms by a middle wall).

The villa at Vintu de Jos (415), (figures 5.6-5.8) discovered during the reconnaissance season of 2000 and confirmed by site visit in the summer of 2002, shares its location with the Bronze age and Late Iron Age village of pit-and-sunken-houses described in the previous chapter, though without overlapping any of the sunken structures. Some 450 metres further to the east in a different field, aerial photographs taken in 2002 showed crop marks indicating building remains on a different layout and, as confirmed by a site visit in 2003 (Oltean 2004; Hanson and Oltean 2003, 115-16), they are probably modern; the only ancient features in that area are further pits of small and medium size, probably from the Bronze Age (see figure 5.7). The location of the villa lies at the western end of this

complex and is situated within 100 metres of the Mures, on the edge of its first terrace on the left bank only 4.3 kilometres away from *Apulum* to the north-east and 3.4 kilometres west of the previously described villa at Oarda.

The site (figure 5.8) covers at least 0.24 hectares and consists of one large rectangular construction built (at least partially) in stone of some 14 by 20 metres and parts of another 2 buildings, located closer to the edge of the terrace and overlapped by the modern field boundary. One of the latter is likely to be another 'tower'-like structure of 3.3 by at least 3.6 metres, while the other seems to be an internally divided building of at least 17 by 7.5 metres. At least one partition wall divides its length into 2 sections, one of 4, the other of 12 metres. Because of the fragmentary state of the crop mark evidence in this area, it is impossible to decide whether 17 metres is the length or the width of the house, hence whether the long or its short side of the house was facing south-east. Both variants are possible in terms of analogies with other examples from the area. The modern day topography might indicate a slight preference for the former, given the fact that the steep edge of the terrace is only 13-19 metres away, but, of course, almost certainly more recent erosion has occurred and very possibly the space available in the Roman time was greater.

However, the evidence provided by aerial photographs and analogies with other villa sites in the area is sufficient to indicate that the site included probably: (A) one house of fairly simple plan including at least one large room ('hall') and one small room, both with dimensions similar to most of the examples of villa houses presented in this chapter); (B) one 'tower' at the highest point on the edge of the terrace; and one large building with only outer walls built in stone, probably an ancillary building (C). All the described features were probably built in stone and covered with roof tiles, several large fragments of which were recorded during the site visit (figure 5.7). Some of the sunken structures could also be of Roman date, even contemporary with the villa. Excavation would be required to elucidate aspects of the site stratigraphy and chronological evolution, and especially the relationship with the sunken structure and the native occupation of the site.

Another possible villa revealed as crop marks on aerial photographs from the 2002 and 2003 reconnaissance seasons is located some 3.7 kilometres to the south-west of the previous example, at the edge of the modern small town of Vintu de Jos (411) (figures 5.9-10) near the bridge over the Mures and the site of the early modern bishop's palace. Further to the west is the confluence of the small Pianu river with the Mures. The scattered and fragmentary recovery of the site plan noted so far and the likely occupation of the area in later (perhaps even earlier) times does not allow its positive identification as an individual or aggregated settlement. If, however, the site does represent a villa, it was probably extended over at least 0.8 hectares and had multiple buildings. One rectangular (probably stone-built, some 11 by 18 metres) construction stands out. It faced south-east with its internal space sub-divided into 3 rooms, one large ('hall'?) to the south-east and two small rooms at the opposite end. Another square stone building (13 by 13 metres) 20 metres away to the south was probably associated, as suggested by both alignment and morphological details. Further to the north and closer to the edge of the river terrace at least 2-3 other stone buildings were identified with different alignments and morphology, suggesting the possibility of different date of construction. A

site visit recorded pottery of potentially Roman and medieval date. (figure 5.11). The location of the site, however, cannot exclude the possibility that it was, in fact, a roadside village, which seems to be the preferred interpretation of the county gazetteer (Moga and Ciugudean 1995, 209) based on the discovery of traces of a Roman road and various materials, including stamped bricks of legion XIII Gemina based at 10 kilometres away at *Apulum*, an inscription giving a list of names, perhaps of legionaries (CIL Ill, 8064=1629), and the head of a terracotta figurine along with other figurines, amulets, sculptures and votif altars (CIL III, 7798=6264, 14473, 7782, 1133). But without any mention of stone buildings or pottery to indicate settlement, the range of artefacts mentioned could perhaps indicate an associated cemetery or sacred area.

In the fields across the river from the modern village of Sibot (figures 5.13-14), again on the first terrace of the main river, lies another villa site identified from crop mark evidence from 2002 and 2003 and a subsequent visit in 2003 (figures 5.13-14). The site contains a set of stone buildings aligned with their long side to the south-east covering a total area of at least 0.19 hectares. A small rectangular building of 7 by 13 metres has 2 internal partition walls, one at 3.5 metres parallel with the north-eastern short wall and the other probably dividing the remaining space into 2 rooms each of some 8.5 by 3 metres. A large building of some 14 by 30 metres also had its length internally divided into 3 sections of 12, 8 and 8.5 metres. Probably 2 other buildings were located to the east connected by a wall (possibly part of an enclosure) on the same alignment which seem not to have been sub-divided and were perhaps ancillary in function.

A building revealed as faint negative crop mark in the summer of 2002 at Sebes (figures 5.15-5.16) near a probable Roman road is another possible example of a villa settlement. No other buildings were visible in the area which was greatly disturbed by multiple river movements. It is 20 by 12-13 metres, oriented north-west-south-east and sub-divided into 4, perhaps 5 rooms -2 square-ish at the southern end and 2 long –with possibly 3 rooms dividing the remaining space perpendicularly. Its dimensions, internal layout and perhaps its orientation, which is consistent with other villa sites, might commend the site as a house from a villa or a roadside village.

On Delinestilor (Sucioni) hill to the east of the villages of Sarmizegetusa and Hobita (within the territory of the latter) aerial reconnaissance in 2000, 2002 and 2003 recorded another (possibly 2) likely examples of villa settlements (Hanson and Oltean 2002, 114 and plate 43) which were also visited in 2001 and 2002. The area was reported to be rich in ruined buildings of Roman date and a kiln for the production of building materials was also discovered in the area (Popa 1989, 44). The first site (figures 5.17-18) overlooks the source of a small stream and the fields below across a wide area towards Hateg and Sarmizegetusa (figure 5.21). Only one building of 12.6 by 17 metres was identified, revealed as a parch-mark. As in the case of the building at Sebes, the dimensions, internal layout (reminiscent of the villa from Hobenilor hill nearby, with large rooms on both ends and a row of small rooms in the middle section) and orientation are similar to a number of villa sites throughout this chapter. The second possible site (figures 5.19-20) is located 600 metres to the north along the same stream, its walls partly extant, but grassed over. The remains of two stone buildings were identified, one of 19 by 12.5 metres without internal subdivisions oriented with its long side facing

south-east, while the other one of 19 by 35 metres was displaced perpendicularly some 25 metres to the south-west and shows indications of internal subdivisions. There were no traces of an enclosure, but this was likely to have been irregular in shape surrounding the plateau, perhaps in a manner similar to the excavated villa on Hobenilor hill. The thickness of the extant features could indicate a possible later date (early medieval), but the layout of the buildings and the accidental discovery on the site of the 2 parts of a large mill of Roman type by the locals (figure 5.21) could indicate a Roman date.

Further possible villa sites attested in the aerial photographic evidence were noted at Salasu de Sus (figure 5.22-23) and at Sarmizegetusa, only 500 metres from the north-western corner of the town enclosure (figure 5.54). Although this is not within the extramural area recorded on the 19th century land survey maps of Transylvania as compactly covered with Roman ruins, it still represents most probably a 'suburban' villa-house. Finally, another villa was recently discovered and surveyed (by fieldwalking and geophysical survey) to the south-east of the village at Oarda by K. Lockyear of the Apulum Hinterland Project team (information I. Haynes) (figure 5.5) Of the large number of sites which have produced Roman finds in the study area and which have been postulated as potentially villas, a further 95 could have done so, but the basis of the identfication is too limited to justify discussion in detail here.

In the following paragraphs I will try to re-analyse the level of evolution and sophistication indicated by the sites presented so far (reflecting that of their occupants), in the light of the more recent studies on provincial Roman villas elsewhere. There are several issues which need to be clarified in relation to villa sites from the study area and indeed, from Dacia. For example, most of the rooms were assumed by previous research to have had wall paintings, with mosaics and brick floors. This assumption was based in part on the poor evidence available, and largely in comparison with sites from other provinces of the empire. But as shown above, the poor condition of the remains and the limited excavation means that no stucco decoration and very few examples of wall painting are known in Dacia, in either urban and rural contexts, possibly the most extensive being present at Deva. If this pattern is maintained by future research, it could indicate that decorated wall plaster need not have been a normal occurrence. Moreover, despite previous publications, in fact no mosaic floor has yet been found in a villa (the few examples known come exclusively from urban contexts, from *Sarmizegetusa* and *Apulum*). At best villas are likely to have had tessellated floors (with figure of eight-shaped or hexagonal *tesserae*) related to the presence of heating systems beneath, brick floors or *opus signinum*. The surfaces covered with such floors could have often covered less than 50% of a villa house. The only example with more extensive use of such flooring is Manerau, with 7 (perhaps 8) of the 13 rooms covered with bricks, *tesserae* or *opus signinum*, and perhaps Deva. At Manerau, even the floors in 1 (possibly 2) of the 3 rooms excavated in an adjacent building -thought to be ancillary in function- had such a pavement (the third, thought to be a kitchen was paved with pebbles). Some cases of pebble flooring were attested either inside stone walled rooms as mentioned above at Manerau or, more often, as outdoor paved areas (Aiudul de Sus –Winkler *et al.* 1968) perhaps extended to cover the whole of the yards (e.g. Deva where the yard was paved with limestone slabs repaired in places –Marghitan 1998, 309-10). Significant surface areas could

probably still have been floored with clay, present inside the villa houses as well as in stone-built or timber ancillary buildings.

Hypocausts were present in most of the more extensively excavated villa sites (absent only at Cincis). Reading the published evidence, one could see that some of them were probably installed from the beginning (Manerau –see above). Many others though were added in a later phase (e.g. Santamaria Orlea where the hypocaust resulted in the floor level in that room being some 0.6 metres higher than the rest of the rooms, and part of the wall plaster of the earlier phase got caught under the new floor level above the hypocaust). With the possible exception of Aiudul de Sus villa, in none of the excavated examples is the way the hot air was lead into the hypocaust clear. In Dacia only in the case of Manerau was this detail particularly noted by the excavators. They interpreted the lack of such feature and of traces of firing as indicating that the hypocaust was not used for heating at all. Mitrofan (1972, 145) mentions that it could have been used to protect against water infiltration from the nearby stream. This explanation is, however, difficult to accept because the Roman constructors had much more efficient methods for water insulation, essentially consisting of thick layers of hard *opus signinum*, and it is hard to believe that a tessellated floor would have been used above a potentially flooded space. The only other example noted of an unfired hyposcaust comes from Britain (Whitton) where other reasons might explain it (see below).

In some of the examples (Manerau, Ghirbom, Santamaria Orlea) it is clear that the hypocaust covered only part of the room, in which cases supporting walls (normally thinner) of stone or brick were used. At Santamaria Orlea or Manerau, the area strictly defined by hypocaust *pilae* did not define the room limits. Therefore it created the need for more complicated substructures, including supplementary walls delimiting boxes of infilling material from empty spaces under floor where hot air would be allowed to circulate. Another example of this kind was found at Apahida outside the study area (Mitrofan 1972, 130-2). This might indicate a similar case at Aiud where the gap between the wall bordering the hypocaust area and the wall continuing the alignment of the other room on that side of the 'hall' was interpreted as a corridor (see Winkler *et al.* 1968). As for the tiny space at the Hobita-Hobenilor hill villa, it requires further re-examination along with the whole context of the villa house.

Further problems of villa analysis are related to the identification of access and movement flow inside the buildings. In some cases entrances were identified in sufficiently well-preserved walls, whether as gaps in the wall or marked by stone (even marble –at Hobita) slabs. But very rarely was the relationship between the 'entrance' level and the floor level made explicit, as indeed, the relationship between the level of the identified floors and the level of the socle of the outer and partition walls. Smith (1997) has attempted to interpret possible entrance and access schemes based on the assumption that it was likely that the number of passage rooms would have been kept to a minimum and that one central room could have ensured access to all the rooms around it. This assumption does not find support in the evidence from pre-Roman architecture, in neither circular nor rectilinear examples from the pre-conquest Dacia. On the contrary, it is obvious there that access was made usually from the south-east, through successive (2, 3) rooms (see chapter 4). Also, it is evident

in a number of villa cases that access inside the house was probably made from the south-east (Aiud, Manerau, Hobita-Hobeni hill within the study area; Apahida and Ciumafaia outside to the north).

Thermae have been identified in very few Dacian villas, and in those cases baths incorporated into the villa house are thought to be the norm (e.g. Apahida, Hobita, Chinteni III). Within the study area, the room provided with a hypocaust at Hobita-Hobenilor hill is thought to have represented a bath, but the details provided by the excavation are insufficient to support such an interpretation. Despite their absence in the published reports, baths might still have been present at Santamaria Orlea and very possibly at Deva. At the latter, the excavation revealed in the southernmost space of the villa house traces of hypocaust *pilae* material and significant quantities of ash, which could be related to *thermae*. Furthermore, the transformation of the eastern end of the room into an internal apse and the presence of a 0.8 metre wide gap in the outer wall at the western end between a 1 metre wide square base (pylon, column?) and the corner of the hall could have supplied perhaps the necessary gap for leading hot air (or perhaps water?) into the room from outside.

The occurrence of separate buildings dedicated to bathing is extremely rare throughout the province. In fact, the only certain example of the latter is at Chinteni outside the study area, where the baths were installed in a square-ish building to the east of the villa house whose previous function was uncertain. Later this whole building changed its function once more and became a house-and-*thermae* complex (smaller *thermae* were constructed on one side of the building copying the exact layout of the previous phase –Alicu 1994 and 1998). A baths complex is however very likely in the large villa complex at Oarda where the plan indicates multiple buildings, and among them a square-ish construction is reminiscent of the bath complex at Chinteni in its early phase.

If attention were given to indications of evolution phases (especially in relation to the introduction of hypocausts) and floor levels (especially in relation to that of so-called entrances and of the wall socle), it could produce even further re-interpretations of villa typology in Dacia and perhaps of the neighbouring provinces (see below). The evidence from Chinteni indicates clearly that the pattern of site evolution there involved transforming the baths complex into living quarters (perhaps to take benefit from the extensive heating installation which already existed there but which was totally missing from the villa house of the first and second phase of occupation). Also, from the example at Santamaria Orlea, it is clear that the late addition of a hypocaust produced a significant raising of the floor level. A possible similar effect might have taken place at Manerau in room M (if it did, indeed, have a hypocaust). The villa at Apahida was also provided with hypocausts of obviously different phases of construction (the one in the row of small rooms identified as baths being at a raised level). It is very possible that, like at Santamaria Orlea, the hypocaust from the bath area was a late addition and that, like at Chinteni, the combined function of the building as both accommodation and baths replaced a previous unique function as baths. This scenario opens the possibility that a whole category of villa houses in south-eastern Europe, interpreted by Smith (1997, 207-8) as "houses with multiple small rooms" without giving a reasonable explanation of the particularity of their plan, may have once been used as large baths before being converted into houses.

As stated by Smith (1997), villas in Dacia, as in other areas of south-eastern Europe, are rectangular block buildings with multiple small rooms, some of them provided with apses. But our understanding of the plans needs to be revised, since phases of construction or repair have been highlighted in only a very few examples. Different repairs or changes of plan within a building, or even changes of use of the buildings, are frequently recorded by more recent excavations in Dacia in civilian archaeological contexts. Therefore, villa sites are likely to have experienced similar changes. Accordingly, some of the 'small rooms' quite frequently mentioned might be nothing but an artificial impression created by adjacent walls belonging to different phases of construction. Published excavation reports rarely express any concern about identification of successive phases in site evolution. Such excavations have, therefore, produced incomplete site plans where chronological developments are now only to be guessed at.

At Santamaria Orlea the excavation revealed 2 different concrete floor levels and the hypocaust also constituted a later addition (in a second phase? – Popa 1972, 442-3). But apart from the identified phases, the published report gives indication of a wall that was deliberately demolished, although that the significance of this find has not been correctly acknowledged (see above). Another demolished (?) wall is present on the plan of Manerau and the parallel walls 0.8 metres apart on the south-eastern side indicate with fair certainty different widths of the house in different phases of its occupation. At the latter, an attempt has been made to interpret different phases of use and of access circuit inside (Smith 1997, fig. 60), but these cannot be entirely validated by the current level of research.

There are many cases where interpretation as so-called 'corridors' has been put forward for narrow spaces of variable length (sometimes even less than 1m in width e.g. Aiudul de Sus, Manerau, Hobita see figure 5.24) and which contribute to the great fragmentation of the internal space. But these could have been created either by elaborate floor foundation systems (especially related to hypocausts –see above), or as results of the movement of partition walls in different phases of occupation (e.g. Chinteni –see Alicu 1998); further research is likely to make them disappear from the plans. One possible indication of a difference in construction date for walls in villa complexes is given by their variable widths, especially of partition walls (figure 5.1). Most villa houses have walls of varied widths; normally the outer walls are wider (0.8-0.9 to 0.6 metres) and the inner walls thinner for practical reasons (the outer walls bearing most of the weight of the roof); this is a basic architectural requirement. However, for those examples where there are significant variations in width within each of these categories of walls, the width of the walls could perhaps reflect different dates of their construction, if other reasons (e.g. topography, geological background) do not apply.

As shown above, finds have been recovered from villas in only relatively small quantities (certainly less than the norm in urban or military contexts, which probably has made them less attractive as a focus for research). They are, however, quite interesting and can potentially provide information about the economic activities carried out at the site. Unfortunately the precise archaeological context, or even the room where they were found, is not always specified. Therefore, it is now difficult to identify the function of most of the rooms with any certainty; possible *triclinia* were documented at Deva and Manerau and a millstone workshop was probably located at Deva. In a

number of cases (e.g. Aiud, Manerau), rooms interpreted as possible corridors or halls were used for storage or domestic activities as millstones, storage pottery or even agricultural tools were present and a few other storage spaces were identified in ancillary buildings (e.g. Deva, Hobita-Hobeni hill).

The spaces previously identified as being used for storage are very scarce, especially in respect to grain storage (as opposed to vessel or tool storage, which are more easily identifiable). On the other hand, large buildings in stone without internal divisions (or in a few cases with timber 'box' rooms attached to the stone walls) are a frequent occurrence in excavated examples, although sometimes interpreted as 'internal yards'. The outline of large rectangular stone buildings like these are also visible in several examples of sites discovered through aerial photography (e.g. Vintu de Jos, Oarda, Sibot and possibly Hobita). Their dimensions and outline is similar to stone buildings used for storage in Dacia or elsewhere (e.g. the so-called 'aisled buildings' see Dark and Dark 1997, 44). Given the excavation methodology employed, it is possible that the Dacian examples were provided with internal features to help support the roof, which have escaped previous research.

Given the poor contextual recording of the finds, the chronology of the sites is based entirely on the meagre coin evidence. Within the study area, coins have been found inside the villa house or ancillary rooms at: Deva (3 –Trajan; Hadrian - AD 124-5; Severus Alexander - AD 227); Hobita – Hobeni hill (2 –Antoninus Pius - AD 139; and Elagabalus - AD 222); Santamaria Orlea (1- Septimius Severus AD 201-210) and Manerau (1 -Elagabal); 4 other coins were discovered in the villa cemetery at Cincis, but for only one of them is an identification attempted, indicating possible dating in the reign of Antoninus Pius. Both of the earliest examples come from the same site (Deva). The remaining are more evenly distributed chronologically and spatially and reflect the beginnings of coinage presence since Antoninus Pius, but more intensely in the early 3rd century AD. In general, the coins discovered in villa contexts in Dacia range from Trajan to Philip the Arab, but most of them are of Severan date (Mitrofan 1998, 171), suggesting that it took most of the 2nd century AD for villas to become properly established. One must not forget, though, that the hoard discovered at Rahau related to the villa has accumulations of both Republican and Imperial coin, and in another case, in the location of a probable villa at Salasu de Sus (Sasa) a hoard of early Republican denarii was discovered (Popa 1989, 53).

For the reasons listed above, any attempt to produce typologies of villas in Dacia and neighbouring areas should be considered as premature, and only further research will be able to prove the validity of these (or others) speculations. The purpose of the argument presented above is to raise awareness of the unreliability of the current data and perhaps to give hints of alternative interpretations rather than to produce definitive conclusions. The inappropriate and inadequate methods of data collection in the past have tended to impede the recognition of other site types, such as individual homesteads other than villas, which may be related to native farming. The few such sites which have been included under this category (see figure 5.26) are mainly sporadic sunken houses unrelated to clear indications of a larger native-type settlement (village) (e.g. Aiudul de Sus – site 165, near the villa site, Aiud –Cetatuie -152 or Noslac –277). Also, in this category I have included sites indicating workshop activity (iron metallurgy –e.g. Hunedoara site 83; ceramic production –e.g. Breazova 420,

Silvasu de Jos 495 and Silvasu de Sus 60, or Folt 28 –see figure 5.47) not associated with larger settlements, which may, therefore, be related to settlements of individual type (homesteads or villas).

1.2 Villages (figure 5.44)

During the period of the Roman occupation, the settlement pattern of the study area shows a significant shift towards nucleation. The terminology used for such settlements is extremely varied and has suffered a great deal of definition and re-definition in order to find the most appropriate labels for the even more varied archaeological evidence. According to Hanley (2000, 6) the list of terms used in relation to aggregated Roman provincial settlements include: "'village', 'small town', '*vicus*', 'larger rural settlement', 'lower order settlement', 'lowest- order market centre', 'non-villa settlement', 'native settlement', 'roadside settlement', 'local centre', 'local market centre', 'proto-urban centre', 'hamlet' and 'nucleated settlement'". He estimates though that "the most commonly used of these terms tend to be 'village', 'small town' and '*vicus*'". Following the approach employed in the previous chapter, the present study will leave behind the terminological issues as an ultimately sterile debate and use mainly the terms 'village' and 'small town' as providing together reasonable coverage for the class of 'nucleated' settlement.

In the study of rural settlements, most of the attention to date has focused on juridical and administrative aspects in defining the terminology for settlements of non-municipal status (for example the *vicus-pagus* issue or the *civitates* issue), (e.g. Tudor 1968, 319-328) and much less on the archaeological evidence. But despite these efforts, the boundaries of all the municipal territories are still unsure, though various attempts have been made to define them (Piso 1995; Ardevan 1998; Gudea and Motu 1994; Popa 2002) and the number of settlements is highly uncertain. Romanian archaeology has operated so far with mainly 2 types of villages of Roman date. On one hand, there are the examples built in the Roman fashion, of a structure resembling the *vici* described by Rorison in Gaul (2001). On the other, there are those built in a traditional manner, many still with largely sunken houses and in a few examples showing evolution towards surface timber constructions.

Inside the study area there are approximately 10 villages (aggregated settlements) of uncertain function, most likely agricultural, and a further 18 sites which may also fit into this category. The villages following a pre-Roman architectural model (which in some cases show an evolution towards Roman models) were easier to identify and represent the largest majority; the evidence for Roman-type villages without evident grounds to be considered as having some urban character (small towns) is very scarce. The reason is not their absence, but it is rather a consequence of the lack of appropriate research methodology. To define these sites, simple mention of artefacts (even if sometimes with more precise indication of the extent of the remains than 'small' or 'large', which is the norm) is not sufficient. As seen above, villa sites -which are also built using Roman materials- can extend over areas as large as 3 hectares. At the beginning of this chapter it was also mentioned that, out of 266-270 possible Roman settlements from the study area, some 214 show clear evidence for the use of Roman building materials and some 95 of them might generously taken into account as possible villas (see above). But for many of those and, indeed, for the remaining 119 there is at the

moment no possibility of estimating their character. This needs clearer site plans to give an indication of the structure of the settlement (whether with a single household unit or with several units). Such plans would also allow differentiation between domestic sites and cemeteries, religious sites (temples) or military installations, all of which could reveal themselves through similar classes of artefacts.

1.2.1. Villages with traditional architecture

The settlement at Obreja (281) has been the most extensively excavated (between 1961-1973), but for the moment it is difficult to appreciate the extent of the area investigated and its relationship to the entire site. Its size is understood to be approximately 6 hectares, partially overlaping earlier prehistoric occupation of the Neolithic and Bronze Age; however, any trace of Iron Age occupation (Hallstatt or La Tene) is missing. Interpreted as a Daco-Roman village (with a possible marginal presence of colonists), it is a settlement built on pre-Roman architectural concepts, with both sunken and surface houses and the practice of storage in pits still in operation. The excavated area revealed 30 sunken (and semi-sunken) and 8 surface (timber) houses, along with 80 pits and a bread oven, numerous pottery finds and agricultural and workshop tools. The pottery used in the sunken houses is mixed, Dacian and Roman, but in the surface examples it is exclusively Roman, revealing an evident evolution towards accommodation above ground level developed in parallel with the evolution towards an exclusively Roman material culture, not just in pottery use but also in tools or oven type. Overall, the Dacian pottery is present on the site only in a proportion of 10-15 %. The cemetery of the settlement was located in the vicinity (see below); based on the dating evidence (coins and brooches) coming mostly from the cemetery, the settlement seems to have been occupied from the middle of the 2nd century AD until the 4th, possibly until the invasion of the Huns (Moga and Ciugudean 1995, 132-33).

Excavations between 1963-1966 revealed a fairly similar village at Noslac (278) dated to the 2nd and 3rd centuries AD. It consists of 6 semi-sunken houses with 13 storage pits, 1 kiln/oven and 2 hearths. The settlement overlaps traces of occupation from the Bronze Age (Wietenberg) and early Iron Age (Hallstatt). But in this case, the architecture remains the same throughout the occupation and the proportion of Roman pottery is lower than at Obreja (only 55%). Other finds included several millstones and a ploughshare among other iron and bronze objects. Special mention needs to be made of the traces of slag, which attests some level of metallurgical production.

At Radesti (314), on the bank of the Mures, only the storage pits (reused as rubbish pits?) were discovered by excavations in 1884-1887 and later in 1973. The 27 pits excavated were 0.7-8 metres in depth with a width varying between 0.7 to 3 metres and had been deliberately fired. They contained a range of artefacts including mixed Dacian and Roman pottery, ash, animal bones, glass fragments, bronze and iron objects. Unfortunately no evidence of houses has been found and only the large number of pits could be interpreted as an indicator of a larger community. It is possible that the houses were light surface (timber?) structures, whose traces might have escaped notice or vanished

over time. But the red Roman ware included both coarse and fine examples, even *terra sigillata*. Its presence, along with evidence of glass artefacts indicates the economic level of the community.

If the Dacian village from Vintu de Jos (415 –figures 4.3-4.4) described in the previous chapter continued to be occupied within the Roman period, it probably represented another example of a settlement where traditional architecture continued to be used to some extent. The chance that it was, indeed, still in use is high, given the fact that the Roman villa did not overlap any of the sunken structures identified on aerial photographs (see also chapter 4).

Some sites have been identified exclusively through pottery (figures 5.44 and 6.2), as for example to the south of Razboieni and Ocna Mures, (Asinip –31, 170, Hoparta -250 Silvas -350, Spalnaca –369) and further south at Petrisat (302 and 303), but also near to Razboieni, at Lunca Muresului (268) Unirea (403) and Lopadea Veche (263). Others are located in the Mures valley (Telna –388, Sasciori –326; Ceru Bacainti-136; Folt-73; Bircea Mare-36), in the Orastie Mountains area (Beriu –44; Prihodiste-179), or in Tara Hategului (Ohaba de sub Piatra-459; Poieni-472; Farcadin-71, Bercu-418) (Figure 6.2). Given the frequent occurrence of Roman construction materials indicating settlements, it is possible that these sites do represent settlements similar to those presented above, especially in that for some 12 of the 18 Dacian pottery (traces) was also mentioned. One must not forget, however, that the ways sites reveal themselves differ significantly according to methodology and specific conditions, including the specific moment in time when the discovery occurred. For example, the site from Rapoltu Mare –La Vie, which was originally identified exclusively by pottery, is now believed to be a villa (see above).

The Dacian villages at Cicau-Saliste, Uioara de Jos and possibly Hunedoara -Sampetru Hill (where the details are less clear) (figure 4.12) embraced surface timber architecture in the Roman period. The large Daco-Roman village at Cicau-Saliste (148) examined between 1969-1973 overlies earlier occupation in the Bronze Age, early Iron Age and pre-Roman Dacian (3rd-1st centuries BC) periods and had two levels of occupation. In the first Roman phase, the houses were built in traditional (semi-sunken) fashion, but these were replaced by surface timber houses with dry stone bases and tiled roofs. The technique was not entirely new perhaps, since some of the houses in the upland settlements before the Roman conquest were also built in timber with stone being used at the base of the walls, but the examples from Cicau used Roman roof tiles. Roman pottery present on the site was represented by coarse and fine ware, including *terra sigillata*, original or local imitation. Other finds included stone and iron tools and a *sestertius* of Trajan. The latter, along with the 4th century pottery, indicate that the settlement was probably occupied throughout the Roman period and for a while thereafter. At Uioara de Jos (394) a very large settlement was located occupying an area estimated to be at least some 8 hectares (although its structure might have been of scattered or semi-compact nature) with Neolithic and Hallstatt pottery indicating previous occupation. The only research undertaken was through field walking in 1963, which identified Dacian pottery mixed with traces of stone wall and mortar (supposed to come from mortared bases of timber buildings -Popa 2002, 206), but this detail could indicate that this example should be included into the next category.

1.2.2. Villages built in the Roman fashion (figure 5.44)

At Aurel Vlaicu-Voivoda (site 89), in the immediate vicinity of the Mures, a typical roadside village seems to have been located whose occupation ended through fire. The site is known only from a brief report of fieldwalking and no site plan has been provided, but according to the description, it consisted of buildings grouped in 2 parallel rows along the Roman road with *interstitia* delimiting each property. Quite possibly, the houses were of the strip-house type. The bases of walls were constructed in stone (mortar is not mentioned) and brick and tile material was also present. Indeed, this is the only site with a description sufficiently detailed to indicate the certain existence of a village here (Popa 2002, 28-29).

A larger settlement could also have been located in the area of Sebes. The building identified during aerial reconnaissance and interpreted as a possible villa (see above) could have represented part of a larger settlement. In the vicinity extensive funerary activity has been discovered with cremations (with Dacian pottery present among largely Roman artefacts), inhumations (one stone sarcophagus containing an infant and a *denarius*), and disturbed materials containing bricks, tiles and a fragment of funerary inscription (Moga and Ciugudean 1995, 167). The pre-Roman village nearby continued to be settled in the Roman period, but given the analogy with Obreja it is unlikely that all these traces (especially the sarcophagus and the funerary inscription) are related to the Daco-Roman village. However, the county gazetteer locates a large settlement at Sebes somewhere to the east of the Secas river and not in this location (Moga and Ciugudean 1995, 168), but neither its precise location, extent or structure are known.

The Roman phase of occupation within the multi-period (including pre-Roman Dacian –see chapter 4) settlement at Cetea (La Pietri, site 147) could be either a village or an individual homestead. It is represented by "foundations of stone buildings and a cemetery" (Moga and Ciugudean 1995, 72) without other architectural details. The artefactual evidence comes mainly from the cemetery and includes coarse ware and *terra sigillata*, bronze and iron artefacts (keys, knives, nails, needles, vessels –bronze?), jewellery (brooches, bracelets, beads) and millstones. Another possible example is at Vint-bridge, if future research proves that the site does not represent a villa.

Even with site plans being available, it is often difficult to estimate when a group of farms (be they 'romanised' farms or not) makes a community; without site plans it is even harder. To the north-west of Hateg (441) there are reports of a Roman settlement with stone building bases and 'Roman materials' (including fragments of a sarcophagus and pottery) extending over an area of some 2 hectares. But again, the nature of the site is uncertain, despite the important cluster of discoveries within the area of the modern town. It is also possible that some of the several individual units/possible villas clustered at Paclisa near *Apulum* may have been tied together into some sort of semi-nucleated community. Similarly, at Hapria (246) 5 different locations with discoveries lie very close to each other, along a stream to the south-west of the modern village, at 'Vadul Balgradului' (pottery, roof tiles, stone walls), 'Fantana Lisului' (pottery, bricks and roof tiles), 'Gura Zapozii' (pottery, roof tiles, and clay pipes), "La Groape" (sarcophagus) and 'Gruiul Faurului' (bronze fibula) (Moga and Ciugudean 1995, 105).

Finally, another possible larger site (perhaps scattered) could have been located around Benic (183) where votive dedications (Jupiter and Liber Pater) a fragment of funerary *stela* (private yard) and material probably related to a second funerary context (at 'Fantana Satului', tiles, bricks, funerary lion and the lower part of a "stone grape press") have been discovered in several places (Moga and Ciugudean 1995, 53). Although recorded as separate discoveries, their number might indicate the possible location in the area of a settlement larger than a villa. Similarly, many other settlements of unidentified type with extensive finds distribution could have been villages: Bacia -Palatiste ('Palota' -6); Drambar (228); Geoagiu (140); Hoparta (250); Lunca Muresului ('Deasupra Viilor' -267); Pestisu Mare (41); Rahau ('Biserica Alba' -364); Soimus ('Telegi' -61).

1.3 'Small towns' (figure 5.44)

The boundary between these 'romanized' villages and most of the sites that fall under the category of 'small towns' is very faint. This interpretation has been applied mostly to sites which acted as central places in providing certain services of interest to smaller communities around, without being 'proper' towns. According to Hingley (1991, 76) "Size appears to have some significance; sites classed as small towns are usually at least ten hectares in size and can be as large as 50 or more hectares. Some villages, however, appear to be as large as the less extensive small towns. The division is presumably one between villages which had a primarily agricultural function and small towns which were involved, at least in part, in trade and industry." His view has been employed in the present study simply because the increasing number of the workforce involved in activities other than food production would increase the need for a market apparatus to supply the food from somewhere else. This is the reason why mining communities have been included in this category, along with centres of industrial production, trade, taxation, or others providing various services for areas larger than their own limits.

1.3.1 Specialised settlements (figure 5.44)

Within the study area there are 29 sites related to industrial activities. Settlements belonging to workers involved in gold, iron, stone or salt exploitation have been identified mainly by reference to quarries nearby, combined with occasional finds of specific tools and sometimes traces of buildings. Among other examples of such stone quarrying settlements are the ones for andesite at Uroi (attempted identification as *Petris* mentioned in the *Tabula Peutingeriana* –figure 5.30) and in the Deva-Cozia area; for limestone in the Calan area (Santamaria de Piatra -76, Valea Sangiorgiului -67, Streisangeorgiu –75), near *Sarmizegetusa* (Iordachel valley –figure 5.29), in the large area to the north of *Apulum* (Ighiu, Ighiel Remetea, Telna, Sard and Remetea); to east of *Apulum* (Ciugud); and scattered other places (Banita, Carjiti, Cabesti, Carpinis and Geoagiu); and at Bucova linked to marble quarrying (Wollmann 1996). A further possible example of a mining settlement might have been located at Cozia near Deva, where aerial photography has recorded a cluster of rectangular structures with low stone walls covered by grass (Figure 5.27) (Hanson and Oltean 2002, 113) which

may have been connected with another andesite quarry exploited by the Romans in the immediate vicinity (Tudor 1968, 126). Other settlements were connected to the exploitation of iron (Ruda, Teliucu Inferior, Alun, Ghelar, Hunedoara, possibly Almasul Mic), gold (Pianu de Sus –figure 5.28) or salt (Ocna Mures). Unfortunately, the settlements themselves have all been subject to very limited research, priority being given to the extraction sites (Wollmann 1996). At Uioara de Jos traces of surface (pit) extraction were identified without being related to a specific natural resource (Moga and Ciugudean 1995, 195).

Potters settlements are another class of specialised settlement present in Dacia, but are better represented outside the study area (e.g. Micasasa and Cristesti). Within the study area ceramic production (whether pottery or construction materials) is better represented in relation to villa and possible villa sites. Extensive pottery production is attested at *Micia* (see figure 5.44), but the function of this settlement is far more complex (see below).

Apart from the main towns (*Sarmizegetusa* and *Apulum*), the itinerary depicted by the *Tabula Peutingeriana* mentions the following settlements along the main route within the province: *Aquae, Petris, Germisara, Blandiana* (between *Sarmizegetusa* and *Apulum*) and *Brucla* (beyond *Apulum* towards Potaissa) (figures 5.44 and 5.48). The number of settlement names in the *Tabula Peutingeriana* and other itineraries is very small compared with the number and location of sites identified as rural settlements. The former might well represent only the larger settlements placed exclusively on the main roads, which could have been of interest for travel, communication, trade or other such activities, and perhaps they should be recognised as 'central places'. This would mean that their function was more complex, including some that are characteristic of urban or semi-urban sites. In the cases of *Aquae* (Calan-Bai) and *Germisara* (Cigmau) the functional complexity is evident. *Aquae* was also a spa (and probably a religious) centre (figure 5.52), while *Germisara* was a military *vicus* (figures 5.36-5.39) with associated spa (figure 5.53), quarry and extensive cemetery (for both *vicus* and healing centre). If *Petris* was indeed, located at Uroi (figure 5.30) -possibly extended on both sides of the river-, it would have been primarily an industrial centre (see above), which would have also been an important site for trade and the communication network. It is very likely to have had a harbour, important for river navigation and transportation of stone, and it would have provided the river crossing for the main road of the province.

Like *Petris*-Uroi, *Blandiana* and *Brucla*-Aiud were not confirmed by epigraphic evidence. Blandiana is supposedly located near the modern settlement with the same name (45) where excavations in 1888 and 1948 revealed traces of an important rural settlement. Discoveries included stone wall bases, bricks, tiles, sculptural pieces, a column capital, a fragment of votive inscription along with 'bronze objects', and large quantities of pottery fragments. Further settlement remains were discovered in the village area including a millstone, spearhead, bronze nail, 2 ceramic lamps, pottery and (unspecified) coins. Also graves and skeletons indicate the presence of a cemetery.

At Aiud, under the modern town and in the surrounding area, numerous remains have been discovered indicating a very large Roman settlement. Apart from Roman building materials (including stamped bricks of the *V Macedonica* legion from Potaissa) and pottery, finds included

many altars, sculptures, a fragment of a military diploma (AD 86), inscriptions (CIL III, 940-943), including a dedication to the governor P. Furius Saturninus and a dedication (altar?) to *Jupiter Optimus Maximus* (CIL III, 942-943), and numerous coins (various denominations and issues throughout the 2nd and the 3rd centuries AD and some examples of the 4th). The Roman settlement was surely located on the main road of the province which followed the Mures valley and its traces have been identified to the south-west, west and north-west of the modern town which probable overlies the main core of that settlement. Along that road, at least in the north-western section, multiple traces of funerary activity have been identified such as a brick sarcophagus, a funerary inventory (coins, jewellery, pottery) and cremation graves with urns. But surprisingly for a settlement with such a highly romanized character in terms of these finds, archaeological research in the area of the late medieval fortress revealed two surface houses built perhaps in timber on un-mortared stone foundations without evidence of use of tiles and which, apparently, used the traditional mode of storage in pits. The inventory (mainly pottery) was exclusively Roman and included also 2 bronze coins-one provincial (Dacia) and one *as* of Phillip the Arab (AD 246)- and an unidentified *denarius*.

1.3.2. Military *vici*

There are a lot of settlements supposedly connected with military sites. Unfortunately, in many cases this is merely an assumption where a fort is known, or where a fort is assumed on the basis of finding a stamped brick with the name of a military troop even in an otherwise civilian context. There have been a few excavations in military *vici* in Dacia, but within the study area they were undertaken mostly at *Micia*. The existence of an auxiliary fort in the Mures Valley between the modern villages of Vetel and Mintia has been known since the 18th century. It has been repeatedly damaged and continues to be so by modern development (ploughing and construction of a railway, a road and a large industrial site). Excavations in the fort and the surrounding area, particularly focused on the military barracks and the baths to the north-east, have taken place over a number of years since 1929 (Alicu 1998). To the north and north-east of the fort, on the riverbank, a group of unidentified buildings has been excavated, along with a baths and *palaestra* complex, a small amphitheatre (Figures 5.5.31 and 5.35 T and A) and a large building with cellar and hypocaust (interpreted at the time as a *basilica* –Teposu-Marinescu 1985, 126). Along the line of the modern road, several private houses have been recorded (though that nearest to the fort was also thought to have represented a public building – Marghitan 1970, 579-594). Among other discoveries are eleven pottery kilns further to the north-east (Floca *et al.*1970), two cemeteries, (one probably developed along the main road outside the settlement towards the east, the second located 1km to the south-west of the fort – Ciongradi 2004 b), a temple for the native gods of the Moorish garrison and another for Jupiter Erapolitanus (Rusu-Pescaru and Alicu 2000, 77 and 92-94).

But an impressive number of some 100 aerial photographs of *Micia* from the summers of 2000, 2002 and 2003 have revealed a significant amount of buried archaeological remains and provided the basis for a new and detailed plan and interpretation of the site (Oltean *et al.* forthcoming). The majority of the archaeological features visible on the photographs (figures 5.32-5.34) are stone buildings, which

now are attested on all sides of the fort, extending for approximately 1km from north-east to south-west across the limits of the settlement (figure 5.35). The main focus of intense activity remains to the north and east of the fort, which is also the most densely populated area. Recent systematic excavation of the military *vicus* at *Micia*, started in 2000, uncovered four structural phases, three of timber and one of stone. It is possible that possible further stone phases (three stone phases have been recoreded not far away in the same area of the settlement – see Marghitan 1970) have been removed by intensive agricultural activity. According to the new excavations, the earliest phase of construction appears to date from the Trajanic or Hadrianic period, confirming probably that the establishment of the *vicus* was contemporary with the foundation of the fort. The dating of the third timber phase to the Antonine period, based on the discovery of a coin hoard of 12 *denarii* of Antoninus Pius, suggests that changes in the early history of the site were quite rapid. The four structural phases mirrored each other quite closely, giving hope that the site plan produced through the interpretation of aerial photographs (which tends to record mostly the final stone phase of occupation -see above chapter 1) is a reasonable indicator of the likely nature and extent of the *vicus* also in its earlier phases. As revealed by excavations and by their plan (so-called strip-buildings facing the main roads with their narrow end to maximise street access), most of the buildings in the busy area of the *vicus* were of combined industrial/comercial and domestic use. In several places, circular structures could have represented kilns (figure 5.45). To the west of the fort, however, larger buildings with yards (one of them with the house within an enclosed yard in a villa-like fashion) indicate a primarily domestic function (figure 5.35). Finally, a number of small buildings in the area of the cemetery to the south of the fort could have been funerary enclosures or small mausolea.

The settlement around the auxiliary fort at Razboieni (?*Salinae*) (figure 5.40-5.43) of the *ala Batavorum miliaria* used to be represented by a huge amount of unstructured information. The site has been identified on the plateau called 'Cetate' (fortification) and in the immediate area under modern settlement and cultivated areas. During the past centuries a vast amount of Roman material has been collected through agriculture, development or even occasional excavations of early or more recent date (1847, 1859, 1960). They include many traces of stone constructions, bricks and tiles (some with the stamps of the *XIII Gemina* and the *V Macedonica* legions or of the local *ala Batavorum miliaria*) or pavement bricks, and lead and clay pipes. Inscriptions (CIL III 933; 7712; 1394; 7789), sculptures in marble and bronze honouring gods (Apollo, Pan, Epona, Hercules Magusanus), silver and bronze coins (from Antoninus Pius, to Caracalla) along with numerous small finds (weapons, jewellery, lamps or glassware) and large quantities of pottery depict a very important and romanized settlement. Materials indicating the cemetery have been discovered in a small rescue excavation on the 'Cetate' (which also produced houses of the late Neolithic and Scythian graves) and in other locations in the vicinity (Moga and Ciugudean 1995, 153-4).

Recent aerial reconnaissance in 2002 (Oltean and Hanson 2001, 129-31) and especially 2003 has now provided sufficient information to map an important part of the settlement (especially the stone buildings showing as negative crop marks mostly in fields under cereal cultivation –figures 5.40-42) and a number of structures within the fort. The buildings outside the fort are mainly aligned to the roads identified, which did not necessarily form a grid (figure 5.43). The area occupied by the

Roman settlement was shown to have been very extensive and extended considerably beyond the limits of the 'Cetate' plateau, where the fort and settlement was supposed to have been located. The crop mark evidence shows that this was heavily occupied in the area to the north of the fort, where the existing 'gaps' in the site plan (figure 5.43) were probably determined by modern buildings or non-responsive vegetation coverage. However, another nucleus of dense occupation has been identified in one cultivated field to the south of the modern village, towards the Mures River and its multiple palaeo-channels and (nowadays) marshes. This is located some 300 metres to the south of the probable southern limit of the fort, and consists of a number of buildings mainly grouped on each side of a road running north-south for some 300 metres, resembling the layout of the excavated part of the *vicus* from Tibiscum (Benea 1993). In the northern sector from the Cetate plateau, the civilian area extended some 200 metres to the north of the fort and for at least 750 metres from east to west (figure 5.43). Here too some of the buildings along with some minor roads (alleys) seem to have been aligned along the axis of a road running east-west (parallel with the fort), but other examples are following a totally different allignment dictated by a different street grid oriented west-north-west to east-south-east. The recovery of house plans at Razboieni is more fragmentary than at Cigmau and *Micia* due to the specific conditions of photography and cropmark formation, but most of the buildings seem to have been domestic or with combined functions.

As in the other cases, the site at Cigmau (figures 5.36-5.38) was identified on the basis of chance discoveries recorded over the last century, though its precise limit on the ground were unclear. The fort is located on a narrow spur on the right bank of the river Mures between Bobalna and Geoagiu, some 5 kilometres south of the Roman hot springs resort of Geoagiu-Bai with which it shared the Roman name of *Germisara* (cf. Rusu-Pescaru and Alicu 2000, 66). According to brick stamps and inscriptions, the fort has been occupied by the *Numerus Singularium Britannicorum*, and by vexillations of the *Legio XIII Gemina*. (Tudor 1969, 130-1). Excavations began at the fort in July 2000 under the direction of Dr. Adriana Pescaru and Mr. Eugen Pescaru (Museum of Dacian and Roman Civilizations, Deva), soon after aerial photographs taken in June and July 2000 (figure 5.36) revealed much of its plan (Hanson and Oltean 2003).

Unfortunately, the entire area of the *vicus* lies beneath the surrounding cultivated fields (figure 5.36) and is slowly being destroyed each year. Large quantities of archaeological material have been discovered in the fields east of the fort and to the west of the neighbouring modern village of Geoagiu. The quantity of remains still brought to the surface every year by ploughing is significant, as proven by the debris scattered on the cultivated fields or collected around them. These remains include not just the usual pottery fragments or bricks, tiles and stones used in construction, but also larger stones normally used for the pavements of public spaces or roads, and even possible architectural fragments.

Recent aerial reconnaissance has greatly enhanced our understanding of the *vicus* by revealing the walls of numerous stone buildings through a combination of parch marks in what appeared to be rough grazing and negative cropmarks in cereal crops, mainly barley (Oltean and Hanson 2001). The *vicus* settlement (figure 5.38) was laid out on a north-west/south-east alignment, with a

rudimentary street grid subdividing the main settlement area, as at *Micia*. This grid seems to be roughly aligned to 2 perpendicular roads, which seem to extend one further beyond the settlement, one to the north-east (probably the main road of the province) and the other to the north-west. The cluster of buildings began immediately beyond the eastern rampart of the fort, but the focus of the settlement lay on the flatter ground to the north east of the fort, extending at distances between 250-350 metres away from the probable area of the fort (figure 5.38). Some basic strip-buildings were revealed, particularly aligned with a road leading off to the east, which look very similar to other examples of *vicus* buildings from Dacia or elsewhere. Nearer to the fort, however, the buildings showed greater complexity. They include at least one large rectangular building of approximately 15x60 metres subdivided in the manner of a military barrack block (A); one corridor building within a walled enclosure (B); at least 4 examples of less elongated buildings subdivided into a number of rooms; and two similar buildings within small enclosures (C). Different building alignments are perhaps suggestive of at least two phases of construction or settlement planning.

The name of *Germisara* attested by the *Tabula Peutingeriana* and epigraphic material (IDR III/3 nos.213-257) seems to have been in use for both the fort/*vicus* complex and the Roman baths at Geoagiu-Bai (figure 5.52), (cf. Rusu-Pescaru and Alicu 2000, 66) probably because the latter were considered to belong to the *vicus*. A similar situation might have existed in the case of another famous hot springs complex at Baile Herculane some kilometres away from the fort and settlement at Mehadia (Benea and Lalescu 1998). *Germisara* seems therefore to have included a whole complex of sites (military *vicus*, cemetery, hot springs –figure 5.53, quarry –at mid-distance between the *vicus* and the spa), occupying a significant area from Cigmau to Geoagiu and Geoagiu-Bai.

Finally, the fort and military *vicus* at Orastioara de Sus located to the north of the modern village, towards Bucium, is currently the least well-known. Since no aerial photographic discoveries have been made, it demonstrates a striking contrast with *Micia*, Razboieni or indeed, Cigmau in the vicinity. Most information comes from antiquarian reports (including occasional amateur excavation) and epigraphic sources. Limited excavation was undertaken in 1957 only in a north-western tower of the fort. The *vicus* and cemetery are only briefly mentioned around the fort (with inscriptions, sculptures, funerary lions –see IDR = Russu *et al* 1984, 257), and Tudor (1969, 134-5) believes that the likely economic activities would have been animal farming and wood exploitation, although the only basis for this assumption seems to be the location within the landscape

Despite its limitations in terms of the visibility of archaeological features in non-responsive vegetation coverage, in built-up areas or of negative features, and in terms of appreciating site phasing (see chapter 1), aerial photographic evidence provides considerable insight into the nature of military *vicus* settlements in the study area and throughout Dacia. For the first time we have some indication of the nature and extent of the sites at Cigmau and Razboieni, while at *Micia*, despite the many years of excavation, the new aerial discoveries provide considerable additional detail of the extent of the settlement. Buildings are now attested on all sides of the fort at *Micia*, extending for approximately 1km from north-east to south-west across the limits of the settlement, though the main focus of intense activity remains to the north and east of the fort. Also, at Razboieni, the extent of

the *vicus* has been proved to be significantly larger than expected, both to the north and to the south from the fort. Although some of the present gaps in the site layout might have been a result of modern building development, both *Micia* and Razboieni could be categorised as a partially dispersed settlements (a term used to describe the *vicus* at Housesteads on Hadrian's Wall with its clusters of buildings interspersed with cultivation terraces - Snape 1989, 469). At Razboieni the layout in the northern part of the *vicus*, with two sets of grid alignments and a variable density of occupation (fig. 5.43 above), might suggest that the settlement first started to evolve as a ribbon-type development along the east-west road (very likely part of the main road system of the province), as in the southern sector of the *vicus* along the road to the river crossing, and later the empty spaces were gradually infilled (Burnham and Wacher 1990, 24-5; Rorison 2001, 33.) A ribbon-type arrangement without further evolution is apparent to the west of the fort at *Micia*, but to the east in the main focus of the site, and at Cigmau, the use of space is more highly structured. At Cigmau, the *vicus* is more focused and compact, but still extends for some 500m mainly around the north and east of the fort and away from it along the main road, in a fashion highly reminiscent of the military *vicus* at Old Carlisle in Cumbria, also recorded entirely from aerial photography (Jones and Mattingly 1990, 174). Its layout fits a combination of two types of *vicus* layout (tangential and circular) as defined by Sommer (1999, 81-3).

The layout of the *vici* indicates a considerable level of planning control and organisation, (either by the military or the *vicani* themselves -see discussion in Hanson forthcoming). This is apparent from details of street and building layout, evidence of initial planning of the size of the settlement as indicated by the position, when known, of the cemeteries (sufficiently far away to allow adequate space for the construction of the *vicus* -see Sommer 1989, 472; 1999, 86) or by evidence of stress upon the available space within the habitable area. Systems of minor roads are apparent, forming a loose grid pattern and emphasising the proto-urban character of the settlements. Such systems of roads are evident in the sites discussed above, especially at *Micia*. There, major roads oriented east-west (3-4) and north-south (2) were located at some 90m intervals (in a pattern paralleled in the civilian *vicus* at Mathay in Gaul -see Rorison 2001, 189-190), although on a slightly different angle to the fort alignment. Most of these internal roads appear to have stone drains on each side. Precise evidence of the location of the cemeteries is available only at *Micia*, where they are found at some distance to the south and east of the fort, but their approximate location at Cigmau and Razboieni indicates similar concerns for space. Small temples and shrines can be found towards the limits of the settlement (Rorison 2001, 44), sometimes associated with the cemeteries, as is evidenced at *Micia*, where two small rectangular buildings and one rectangular structure with an apse to the south-west of the fort may represent temples or *mausolea* (Fig. 5.35).

Micia and Cigmau (less so Razboieni) hint at considerable pressure on space in the *vicus* and the importance of proximity to the fort itself. At neither of them is any sign of restrictions on buildings encroaching right up to the defences of the forts apparent. Though the natural topography constrains the extent to which this is possible at Cigmau, there are buildings immediately outside the east gate on the plateau occupied primarily by the fort, although these could have included the shared facilities of the baths. Similarly, at *Micia* buildings, among them the baths complex, occupied the limited

space between the fort and the river Mures. At Razboieni, however, dense occupation around the fort area might not have been so apparent from the beginning, the space being occupied subsequently when faced with many settlers seeking to be located as close as possible to the fort, but without the same topographic pressure that had faced *Micia* and Cigmau. In Britain it is assumed that the forts would have needed an unoccupied area beyond the defences as a security cordon, and a similar pattern of encroachment is thought to be a late (Severan?) development, explained by the abolition of the ban on military marriage resulting in an increase in the demand for space in the *vicus*, or as a reflection of the peaceful character of the frontier by that time (e.g. Salway 1967, 13-14). To some extent this would suggest a similar situation for *auxilia* forts, as demonstrated by Piso for legionary bases, that military jurisdiction extended for 2 *leuga* around (Piso 1991). But this evidence is exclusively related to the property rights of Roman communities and is not linked to strategic dispositions, since it is known that *cannabae* were normally located *intra leugam*. Moreover, in Germany, where more extensive excavations of military *vici* have taken place (Sommer 1989, 472), there is no indication that empty space was ever left between the fort ditches and the first houses. Without excavation it is impossible to say whether the crowding of buildings up against the defences of the forts is a late development in Dacia, or merely a normal reflection of the close association between the military and civil communities, but the latter seems more likely given the current indications that the stone buildings mirror the position of their earliest timber predecessors. Furthermore, the fact that the buildings at *Micia* had been demolished and rebuilt systematically in the same location, re-using material from earlier phases, and the absence of finds (mainly coarse pottery and broken lamps) indicating that they had been systematically cleared before demolition (Oltean *et al.* forthcoming), emphasises once again the pressure on the available space (see also Ruscu 1999).

The aerial perspective has offered a further opportunity to identify particular types of activity within the settlement on the basis of the morphology of the buildings revealed. Within the *vici* at *Micia*, Cigmau and Razboieni several types of buildings have been identified. The most common form in a military *vicus* is generally considered to be the so-called strip-house, a long rectangular structure usually positioned with its narrow end facing the road to maximise access to the street frontage (Salway 1967, 167-9). Such buildings are frequently characterised as taverns or shops, possibly involving small-scale production on the premises (e.g. Sommer 1988 and forthcoming). Possible examples of such structures are apparent at the north-eastern limit of the *vicus* at Cigmau lining the main road from the settlement, for they are frequently found especially along major arteries, but also on secondary roads within settlements (Rorison 2001, 44). Several possible examples of such structures are apparent at *Micia* in the busy area to the east of the fort, where the recent excavations in one area allowed greater detail in their analysis. The length of the excavated buildings and their orientation in respect of the road indicates that they fall into the category of strip-buildings. Furthermore, their function in most phases seems to have combined both domestic and industrial activity. The nature of the commercial/industrial activities involved is indicated by some of the artefactual material recovered, such as iron slag, melted glass, unfinished artefacts, and quantities of animal bones, while their domestic use is confirmed by the presence of decorated wall plaster in the

second timber phase. Their construction, with possibly two-storey structures and tiled roofs indicated in the third timber phase, also attests a certain level of architectural pretension (Oltean *et al.* forthcoming).

Cellars are common features of houses and workshops in both civilian and military *vici* in Gaul (Rorison 2001, 38-9) and Germany (Sommer 1999, 88). Several positive crop marks indicate sunken structures in the north-eastern corner of the *vicus* at Razboieni including pits, some of them too large to suppose their function was for storage. Their chronological associations are unclear from the aerial photographs, none of them being visibly overlapped by or overlapping the stone structures of Roman date, so they are potentially contemporaneous. Indeed, some large sunken structures/pits, which seem to have been integrated within the plan of stone buildings at Razboieni (in the north-eastern corner), could perhaps have been used as cellars. However, previous rescue excavations in the area of the northern *vicus* indicate the presence of Neolithic occupation and these structures could, therefore, belong to a much earlier phase of occupation (Moga and Ciugudean 1995, 153-4).

The barrack-like structure from Cigmau (Fig. 5.38 A) is not readily parallelled in Dacia, but can be found in a few other examples elsewhere. It is not dissimilar in plan to several buildings in the military *vicus* at Old Carlisle in northern England (Jones and Mattingly 1990, 17) and in the civilian *vici* at Bliesbruck and Malain in Gaul (Rorison 2001, 70-1). It is probably a result of conjoining a number of standard strip-houses without the provision of *interstitia*, as in the earliest phase of construction in *insula XIV* at the *municipium* of Verulamium in southern England (Frere 1971, 14-19 and fig. 8). This would suggest that the function of this building at Cigmau is likely to involve a combination of residential and industrial/commercial activity like the ordinary examples of strip-buildings. Their layout seems likely to reflect some military influence in their construction and the use of *tegulae* produced by the local military and civilian *officina* in one building at *Micia* attests a similar relationship (Teposu-Marinescu 1985, 126).

Many of the houses within *vici* seem to have a plan similar to those encountered in villa sites, though most of them have considerably reduced dimensions. Here too the compact house plan is visible, along with similar internal space division. An elongated building with a central corridor (Fig. 5.35, 1) on the north-eastern side of the *vicus* at *Micia* is similar to a type of 'row house' known in the Danube area, paralleled in the villa house from Winden am See, Austria (Smith 1997, 203 and fig.56). At Tibiscum and Porolissum in Dacia, a number of excavated buildings have rooms ranged on each side of a central corridor and with a sort of entrance portico or, indeed, colonnades facing the road. There individual properties seem to have been well delimited by passageways or alleys providing access from the street to the workshops at the back (Benea 2000, 33-6 and plates 3 and 10). Examples of this type are present also at *Micia* (Fig. 5.35), Razboieni (where the resemblance in plan with Tibiscum is striking, especially in the southern sector of the *vicus*) and probably at Cigmau in the north-eastern sector along the main road.

Finally, a number of buildings appear to be associated with enclosures or yards containing ancillary structures. The two buildings located some 250m and 450m respectively to the west of the fort at *Micia*, both rectangular and internally subdivided, are associated with enclosures containing ancillary

structures. Both seem likely to be domestic structures with a yard, the westernmost of them -with the house inside a rectangular yard with ancillary buildings along the enclosure walls- looking very similar to a villa (Figure 5.35, 2) (e.g. Deva, see above). Three buildings immediately to the east of the fort at Cigmau (Fig. 5.38, C), are probably also domestic.

So far, none of the military *vici* displays obvious examples of buildings that might reasonably be interpreted as having a public function. There are as yet, for example, no indications of designated public market spaces, as attested at some of the German sites (e.g. Sommer 1999, 86-7). Therefore, we must assume that trading activities must have taken place within the workshops and this assumption could be supported by the large number of buildings with access and porticoes facing the main roads. The most frequently attested official buildings found in *vici* are *mansiones* (Salway 1967, 170-73; Sommer 1984, 47), though even on the basis of excavation these can be difficult to identify with any certainty. The only possible candidates at any of the sites discussed here are the buildings with rooms grouped around a central yard at Cigmau and perhaps one to the north of the fort at Razboieni. Until further research has been undertaken, it is best to assume that these are more likely to be domestic structures.

Nor are there any clearly identified formal spaces for local administration purposes, either *basilica* or *curia*, indicating that none of the sites had acquired municipal status, despite their size and importance. Several attempts have been made at *Micia* to identify a *basilica* within the *vicus*. But the large building identified as a possible example (Teposu-Marinescu 1985, 126) lacks adequate confirmation, and the provision of both a cellar and hypocaust is more indicative of a combined residential and commercial property than a public building. Similarly, the possible public building nearest to the fort, identified by Marghitan (1970, 591) on the basis of its architectural elaboration, has more in common with other domestic and commercial buildings in the vicinity, including the provision of hypocausts. However, the discovery of what looks to be an aisled building of considerable size within the eastern area of the *vicus* adds a new possible candidate on morphological grounds (Figure 5.35, 3).

The development phases and chronology of these settlements are uncertain. Only at *Micia* have the usual estimations based on finds and epigraphic evidence been verified by excavation, most of them of the very recent date. As presented above, the *vicus* there seems to have been established at the same time or very soon after the establishment of the local garrison and it was not for some time that the timber architecture, although undoubtely pretentious, was replaced by stone buildings (Oltean *et al.* forthcoming). At Cigmau and Razboieni such timber phases have not yet been highlighted (as in most military *vici* of Dacia), but on the basis of the new excavations at *Micia* and that at Casei (see Isac forthcoming), it seems reasonable to infer that there would have been at least one earlier phase of timber construction in most of the military *vici* in Dacia prior to their construction in stone. In any case, the very size of these settlements, along with the internal provision of various amenities, attests their importance, not just as central places for a large area arround, but as examples of what would have been the most common form of substantially Romanised settlement in the province.

2. Location of settlements

It is perhaps premature to generalise about settlement patterns on current evidence because of the difficulty of identifying settlement type. As shown above, the character of a very large number of sites is unknown and cannot easily be estimated based on their extent or the nature of associated artefacts. However, a few remarks can be made. At present it is believed that the most populated zone of Dacia was western Transylvania, particularly the Mures valley and along the main road of the province, most of which is covered by the study area. Indeed, settlement is very dense there (see figure 5.44), and as might be expected, the most populated clusters are grouped around the major urban centres at *Sarmizegetusa* and *Apulum*.

The recorded sites are fairly evenly distributed across the territory. With extremely few exceptions they are located in the lowlands and it would appear that occupation did not extend above altitudes of 400m. The exceptions are usually specialised settlements, mainly for the extraction of natural resources (quarrying or mining), or represent settlement continuing from the pre-Roman times at the same place (e.g. Cetea). A few traces are related to temporary military activity (e.g. *Sarmizegetusa Regia* and Tarsa-Prihodiste in the Orastie Mountains), while further traces at Fetele Albe have not been explored.

Also, as many as 153 out of 402 recorded sites are located within 5 kilometres of the Mures, another 101 being located in Tara Hategului (figure 5.44). Indeed, clustering is evident arround *colonia Sarmizegetusa*, with as many as 71 recorded sites located within a radius of 15 kilometres, and with most of the remaining 30 at less than 27 kilometres. The only site located further away is the quarry (and possible settlement) at Banita. Similar clustering of sites is recorded around *Apulum*, with 93 recorded sites within 15 kilometres of the towns and a few more just outside this zone. The small centres, such as the military *vici* and the possible sites mentioned by the *Tabula Peutingeriana* also have signs of activity around, with the exception of *Micia* and Orastioara de Sus (figure 5.44).

Much like in other provinces of the empire, villas (figure 5.26) are located mainly in areas with agricultural potential and idylic settings such as on gentle slopes preferably facing south, near streams or rivers (for earlier assessments of villa location in Dacia see Mitrofan 1974 and 1998). Indeed, most of the examples examined in this chapter, including the new additions found through aerial photography, fulfill some of these requirements. However, it has been noted that many examples were not located on south-facing hill slopes, but quite the contrary (e.g. Hobita-Hobeni Hill, Hobita-Sucioni, Deva, Aiud, Salasu de Sus, Oarda). Indeed, the expectation that villas would have used only south-facing slopes would greatly and unreasonably limit the number of such establishments; inevitably their location would have been dictated by the location of the individual property and its topography. However, in many examples where site plans were available, a tendency of the villa houses to be oriented on a north-west to south-east alignment has been noted (see above). But if a south-facing hill-slope was not available, villas were certainly 'houses with a view'. From their location, they overlooked large areas of the rural countryside, and in some examples it has been noted that it was in these particular parts of the complex that investment in luxury flooring or wall decoration was made (e.g. Hobita, Deva, Aiud –see above). Moreover, in some cases a tower was

built on that particular side along the enclosure wall (Hobita and Deva –figure 5.24). Whether 'the view' from the villa towards the surrounding landscape was important or, on the contrary, from the settlements around towards the villas (based on assumptions about the expression of social status through architectural monumentality, as in the case of hillforts) is debatable. Probably both were equally important.

But the location of villas, certain and possible, in relation to other sites shows a different pattern to that which has been assumed so far to be in force. The location of villa sites has been generally related simply to their proximity to main roads and navigable rivers, and to easy access to the towns or military centres which provided the market for their products (Mitrofan 1974, 46). However, though within the study area these sites are located without exception in arable areas, they are found mainly within the buffer zones of the major towns, which seem to have attracted them more than smaller centres (*Sarmizegetusa* with 32 and *Apulum* with 34 –figure 5.26). Very few other central places have villas in the vicinity: one certain (Strei) near Calan; one certain (Rapoltu Mare) and one possible near Uroi; 3 possible near Cigmau; one certain (Sibot -149) near Blandiana; one certain (Aiudul de Sus), and one possible near Aiud; and one possible near Razboieni. The two major towns do have several villas located within less than 5 kilometres, but at *Apulum* they start to emerge only at a distance of at least 2.4-3 kilometres (the possible reasons for this contrast are discussed in more detail in the next chapter).

Theoretical studies have observed the tendency of ancient and modern rural central places to emerge at distances of 5-10 kilometres and that of larger towns at even 30 kilometres apart (Bintliff 1997). Within the present study area, there are 30-32 kilometres between the main centres of *Sarmizegetusa* and *Apulum* and the nearest smaller centre (Calan for *Sarmizegetusa*; Aiud for *Apulum*, but not Blandiana, which is at less than 15 kilometres away from *Apulum*). Whether or not this theoretical model is reflecting reality is uncertain (see Diaconescu 1997, 14-15), but it is clear that the distribution of central places in the landscape was reasonably capable of covering the eventual needs of the settlements arround them. One exception is visible, however, on the eastern side of Tara Hategului, where several sites are located at considerable distances (27-32 kilometres) from both nearest centres, *Sarmizegetusa* and Calan.

The majority of sites throughout the study area provide evidence for extensive use of Roman building material, in contrast with other parts of the province, especially in the eastern half (Popa 2002, 221-2). This has been once again taken to reflect ethnicity and wealth. But according to current data, these sites were also the most favoured in having easy access to Roman products given their location in terms of road and river transport, or in relation to the main urban centres. Out of 214 sites with reported use of stone walls, bricks and tiles, 147 are within 3 kilometres of the line of an identified road or of the site of a reported road, and quite possibly more of the remaining 67 would come into the first group if further work were to be undertaken on the Roman road system of the area. By way of comparison, 13 out of 21 sites with only pottery finds are located further than 3 kilometres from the roads. The relationship to the tranport system would appear to have been an important factor, therefore, in the process of romanization of the landscape (figure 5.49).

3. Economy

3.1. Agriculture

In other provinces of the empire, clear indications of the agricultural use of rural territories come from studies of ancient field systems. Centuriated lands, with *centuriae* usually of 20 by 20 *actus* (i.e. 200 *iugera* each - cf. Dilke 1971, 82-88) are often present in Italy and in the Mediterranean area (Chouquer and Favory 1991; Arino-Gil *et al.* 1992), but non-centuriated field systems have also been detected (e.g. in Britain). In Britain, agriculture of Roman date has been investigated archaeologically through the identification of field systems and drainage systems identified largely through interpretation of aerial photographs. This has provided the opportunity for huge areas of landscape to be mapped in detail (e.g. Palmer 1995 and 1996). Grazing lands or examples of plough marks have also been identified, while pollen analysis has provided evidence of the types of crops used (see Dark and Dark 1997, 93-113).

But in Dacia, since no previous landscape studies have been undertaken in order to reveal clear connections between settlement occupation and arable fields, the relationship of settlements to agriculture is in most cases more implicit than explicit. Indeed, although aerial photography within the study area has recorded a number of linear features indicating previous field boundaries, the additional problem of multiple changes within property systems of recent date (see chapter 1) has reduced the chance of providing a sufficient basis for attempts to reconstruct ancient field systems. Moreover, the distribution of land to colonists (*adsignatio)* that everybody assumes to have taken place still remains largely a supposition. Veterans from the legions used to be given land properties according to their rank (*secundum gradum militiae*) within the territory of *coloniae deductae* such as *Sarmizegetusa* (Piso 1995, 63). Indeed, the rural territory of *Sarmizegetusa* is the most likely candidate for centuriation, as indicated by the circumstances of its foundation and on analogy with the contemporary *colonia* at Poetovio in Pannonia. Although clear signs of centuriation have not yet been discovered at the latter settlement either, a reference in the *Agrimensores* indicates that it did existed (Mocsy 1974, 119). In the Mures valley cropmarks indicating 90° road junctions have been discovered in two separate locations, one just outside the area occupied by buildings at *Micia* and the other to the east of the villa site at Vintu de Jos (415) (see below). The latter involved a more substantial area, which could indicate more convincingly the centuriation of the territory south of *Apulum* (fig.5.50 below). However, considerable further study is needed before this possibility can be confirmed.

The focus on settling the lowlands in Roman times is, however, a clear indicator of a stress on arable cultivation. In the villa cases presented above, the provision of large buildings probably used for storage of the produce also indicate their economy, along with associated finds of ploughshares (e.g. Hobita -Hobeni hill, Aiudul de Sus) and millstones (e.g. Deva, Hobita-Hobeni hill and Sucioni hill 2, Cincis, Aiudul de Sus, Manerau) or other related materials (scissors and spindles-Santamaria Orlea, sickle-e.g. Aiudul de Sus). Millstones, some ploughshares and sickles were recorded in other contexts too, in agricultural villages, possible homesteads or many other settlements of unknown nature with both Roman and Daco-Roman material culture (Cetea, Obreja, Noslac, Blandiana, Sebes,

Sebesel, Varmaga, Ciumbrud, Ciuguzel, Decea, Miraslau, Petresti, Paclisa, Spalnaca –see figure 6.2). From Benic (183) comes the lower part of a grape press and at Spalnaca (368) fishing net weights were discovered. Although it has been argued for (Cincis and Lechinta de Mures- see Protase 1968, 508), the association of agricultural villages and villas is perhaps documented so far only at Vintu de Jos (415), if the villa proves to be contemporaneous with the habitation of the adjacent village (see above). However, the lack of further examples in the archaeological record is due to the failures of the previous research methodology rather than to their real absence within the landscape.

Since no animal enclosures have been highlighted at any of the sites, the animal farming economy is also documented implicitly, and through the evidence of significant quantities of bone (especially of pigs and cattle) present in virtually all the archaeological excavations (although rarely mentioned in print). A wax tablet list from Rosia Montana (CIL III p. 933) proving the availability of lambs and piglets for meat consumption on the local market and the epigraphic reference to a *collegium centonariorum* (CIL III 1174, 1208, 1217) suggests possible use of locally produced wool. A study of bone material by Gudea and Gudea (2000) from a sunken house in the settlement at Cicau-Saliste produced evidence for 44 fragments of cattle bones, 16 of horse, 10 of pig and only 3 of sheep/goat. Significantly larger quantities come, as expected, from the fort at *Micia* (cattle-894; sheep/goat-324; pig-343; horse-44, and birds-30 pieces); from *Apulum*-Statia de Salvare (cattle-792; sheep/goat-317; pig-317; horse-229; and birds-15 pieces); and from the amphitheatre at *Sarmizegetusa* (cattle-133; pig-59; sheep/goat-21). The latter examples, even if they refer to meat consumption in military and urban contexts, should still reflect the farming of these animals in the surrounding rural territories. In some cases the large quantities of bones could indicate processing of carcasses, as for example in the *vicus* at *Micia* (Oltean *et al.* forthcoming) or perhaps the villas at Deva and Manerau. Further observations have been made that in general (including the examined sites from the study area) the animals killed were generally adults, which means that for cattle and sheep/goats they would have been exploited primarily for non-meat products (milk, wool) or for traction (use of cattle for traction has been clearly documented in the osteological material from *Apulum*). The same study also advances the observation that some breed improvements could have been made, as suggested by an increase in size of the adult animals (Gudea and Gudea 2000, 264-5).

3.2. Exploitation of natural resources

The exploitation of natural resources such as gold, iron, stone and salt in Dacia was extensive (figure 5.47). In order to eliminate an obvious bias factor, the present study has deliberately excluded the famous gold mining district in the Apuseni Mountains, which was intensively and systematically exploited by the Romans. The only gold exploitation site within the study area is the surface exploitation over a very large area at Pianu de Sus (Wollmann 1996, 149-50), of which traces are still extant (figure 5.47) and which probably continued pre-conquest activity (see chapter 4). However, the iron mining district in the Poiana Rusca mountains attracted intensive activity in the Roman period, with extraction centres such as Hunedoara, Teliucu Inferior, Ruda, Ghelar, Alun and perhaps Almasu Mic. Traces of quarrying, mining tools and even traces of buildings related to the extraction

activity or indicating associated settlements have been discovered there (Wollmann 1996). However, it seems that the iron resources from the Orastie Mountains around *Sarmizegetusa Regia* ceased to be exploited during the Roman period without any aparent reason (see earlier in chapter 4 and further discussion in chapter 6).

An important resource available in the area at Ocna Mures was salt which was also exploited by the Romans (figure 5.47). Even the Latin name of the settlement, *Salinae* (for Ocna Mures itself, for Razboieni across the Mures or perhaps for both of them) confirms this. According to Wollmann (1996, 241) traces of Roman surface exploitation and adjacent buildings (some of them with vaulted roofs) were still visible in the 19th century over a large area between Ocna Mures and Spalnaca. Probably the traces of pit quarrying identified near Uioara de Jos are also related to salt resources.

Finally, numerous traces of stone quarrying in the Roman time have been identified (figure 5.47). Probably the most famous quarry in Dacia is the marble exploitation at Bucova imediately to the west of the Iron Gates passage and only 11 kilometres away from Sarmizegetusa. "Until 1884 when the marble quarry at Ruschita was opened, [Bucova ...] provided almost without interruption the material for urban constructions, monuments and even lime" (Wollmann 1996, 260). The capital at *Sarmizegetusa* made the most extensive use of this material, so intensive that it entitled some to identify a genuine "culture of marble" (see Ciongradi 2004 a; Diaconescu 2004), but the marble originating in this quarry travelled around the whole province and was used at *Apulum* and in many other urban or rural locations. Andesite avaliability was concentrated around Deva (Deva, Bejan, Pietroasa, Cozia, Uroi -figure 5.30). From there, it travelled according to market needs, probably as finite products (millstones, but also funerary monuments or architectural pieces) since the tools found in the quarries (e.g. Bejan) included stonemason's tools among those used for extraction. Other workshops, like that from the villa at Deva, were also located nearby. Limestone was more readily available across the area. It continued to be extracted at the Magura Calanului quarry and in the area, where now at least 4 quarries are in operation (Calan, Streisangiorgiu, Valea Sangiorgiului, Santamaria de Piatra). The quarry at Telna north of *Apulum* also continues to be used, but (despite an evident intensification of activity in the area, with another quarry at Telna and new quarries at Remetea, Ighiu and Ighiel) not that at Craiva. *Sarmizegetusa* also used limestone available in the vicinity, probably that from the Iordachel valley imediately to the west of the town (figure 5.29). Other quarries were located at Banita, Carjiti, Geoagiu, Carpinis and Cabesti. At some of these sites tools were also found (at Ighiu, Santamaria de Piatra, Pianu de Sus, Teliucu Inferior, Ghelar, Deva, and Cincis). So far only one sandstone quarry has been identified within the study area at Sard, but it is also supposed that a sandstone quarry would have existed in the Deva-*Micia* area (Wollmann 1996, 260). For similar reasons, we should assume the presence of another source in the vicinity of *Sarmizegetusa*, where sandstone was used extensively especially within the early stone phases (e.g. for the Hadrianic forum see Diaconescu 2004).

The mines were probably under the imperial administration, but some involvement especially of individuals and villa sites must also be accepted. The discovery of extraction tools in the villa house and of iron ore ritually deposited in the graves from the small cemetery of the villa at Cincis nearby

indicates that the site was probably associated in some way with iron ore extraction, as has been highlighted in previous studies (Floca and Valea, 1965). At the Deva villa numerous millstones, including unfinished pieces, indicate the presence of a workshop producing millstones rather than simply the intensive involvement of the site in cereal cultivation and processing (see above). Since the villa site is located at the foot of the large andesite quarries around Deva (Deva, Bejan, Pietroasa), the workshop was most likely using the andesite available nearby. The opening of new quarries as well as the continuity of previous extraction sites and their location not far away from the main urban centres and populated areas, reflects the general spread of stone architecture in the study area in the Roman period. Also, although some transport of stone was undertaken, it has been noted that, unlike the pre-conquest period, local resources were used whenever available and future research into the location of Roman quarries will probably confirm this (see also Wollmann 1996, 267).

3.3. Manufacture

As in the pre-Roman period, evidence for craftmanship and manufacture within the province are severely biased by the survival of artefacts in archaeological contexts. Since no waterlogged complexes have been excavated, preservation of organic materials means that only manufacture involving pottery production, metalworking and stoneworking are well represented within the study area. However, tool finds indicate weaving taking place to some extent in the villa at Santamaria Orlea (spindles or loom weight discovered there) or probable woodworking in the village at Obreja (borer, axe, adze) and at the site at Spalnaca (chisel, axe).

Extensive pottery production was undertaken in *Micia*, where a large group of potttery kilns have been excavated to the north-east of the *vicus*, probably on the outskirts of the settlement and near one of the cemeteries. Aerial photography has revealed a number of circular structures which could perhaps indicate the presence of further kilns within the settlement itself a little distance from the fort (figure 5.45).

Pottery production has been attested elsewhere mainly by presence of kilns, some used for construction materials (Zeicani, Hobita-Sucioni Hill, Breazova, Silvasu de Jos) and some probably for pottery production (Oarda, Folt, Silvasu de Sus). However, a mould used for *terra sigillata* production has been discovered at Pesteana, which could suggest a workshop imitating *terra sigillata* in the area. These discoveries are located mainly at possible villa sites in Tara Hategului (with the exception of Folt) (figure 5.47) and this could perhaps hint at villa-related industrial production, in a fashion which has been revealed also elsewhere (e.g. Italy see Attolini *et al.* 1991; Britain -see Darvill and McWhirr 1984).

From similar contexts, although located primarily on the eastern side of Tara Hategului, comes evidence for iron metallurgical activities mainly in form of slag (2 at Sampetru, 2 at Bucium-Orlea and one at Valea Daljii) (figure 5.47). Interestingly, at both Sampetru and Bucium Orlea iron metallurgy has been attested in a pre-Roman context (see chapter 4) in the immediate vicinity.

Reduction of iron ores was certainly undertaken in the area of Hunedoara (iron ingot discovered at 'Manastire'-site 83) probably using local ore extraction (site 82). Recent excavations inside the north-eastern sector of the *vicus* at *Micia* also revealed evidence of iron slag and melted glass, indicating the probable presence of an iron and glass workshop there (Oltean *et al.* forthcoming).

Stone working (figure 5.47) is attested mainly through the discovery of tools related to such activities at quarry sites (e.g. Deva-Bejan, Santamaria de Piatra), although one millstone workshop was located within the villa site at Deva (see above). Further indication of the presence of stone working activities within the study area outside *Sarmizegetusa* and *Apulum* are provided by the discovery of one fragment of a stone column from Calan with the inscription of *Diogenes lapidarius* (CIL III 7859) and another *lapidarius*, *M. Coceius Lucius* is attested at *Micia* (CIL III 1365). Also, the results of a recent study of the funerary monuments from Dacia supports the idea of the presence at *Micia* of a local workshop producing funerary monuments (*stelae*) based on stylistic and typological arguments (Ciongradi 2004 b).

3.4. Networking and communication (figure 5.48)

All these sites were not separate entities but maintained relationships and were communicating with each other. The communication system in the Roman period continued to make active use of the Mures river, both for navigation and for structuring the terrestrial network around it (figure 5.48). The exact trajectories of the roads are unknown, for too little research has been undertaken on this topic. As indicated by the *Tabula Peutingeriana*, the main road is supposed to have run from the Transylvanian Iron Gates and Bucova through *Sarmizegetusa*, crossing the whole of Tara Hategului to reach the Strei valley. It would then have followed the line of the river until reaching the Mures valley somewhere East of Simeria where it would have crossed the river to Uroi (Petris) and continued following the Mures line on its north side towards *Germisara*. The road continued to follow the river through Blandiana, *Apulum*, Aiud and Razboieni, where it had preferred to follow the line of Aries river to reach Potaissa outside the study area (and from there to Napoca and Porolissum). Further extensions led to other centres of the province or beyond its boundaries.

But little research has been done into the Roman road network of Dacia. In most cases publications do not include plans of the identified sections of roads and they had to be included here only as point discoveries. This study has mapped several sectors of the road, which were identified on the 1870-1875 cadastral map of Transylvania (indicated by labels such as "*Römer Weg*"; "*Drum Trajan*"). Aerial survey has also identified and enabled the mapping of further road sectors to the east of Cigmau (Hanson and Oltean 2003, 103-9; Oltean and Hanson 2001; also visible on Corona KH-4A satellite sequence DS1022-21104DF025 from 26 July 1965), Bobalna and Sebes (figure 5.48). Further roads outside settlements have been identified at *Micia* and to the south of *Apulum*, and east of the villa and traditional village at Vintu de Jos. In the latter case, they consist of T-junctions on a consistent alignment (figures 5.50-5.51), but until more of these are discovered in the future to confirm a consistent pattern, they provide insufficient basis to advance the interpretation that they were part of a system of centuriation.

The road system was little affected by problems of river crossings. These would have been more difficult across the Mures, but river crossing services were probably in place in multiple locations. In the eastern part of the study area all the towns and small towns (Uroi, *Germisara*, Blandiana, *Apulum*, Aiud, Razboieni) are located on the right bank of the river, while many of the villa sites and villages are located on the left. According to the roads mapped so far, major river crossings would have been necessary at least at Uroi-Simeria, Geoagiu-Gelmar, Alba Iulia (Partos)-Oarda and Razboieni-Ocna Mures. The importance of the Mures river for transportation was maintained and probably enhanced during the Roman period. Apart from the harbour at *Apulum*, such instalations are supposed to have been in place at *Micia*, to which we could probably suppose others at Uroi and Razboieni-Ocna Mures in order to facilitate the marketability of their product.

Processes like administration and taxation within territories are difficult to define. They rely largely on the possibility of defining the status of the settlements and on historical information about such processes. Moreover, the territories belonging to the main Roman towns are difficult to define. Piso (1995) tried to define the limits of the rural territory of *Sarmizegetusa* on basis of epigraphic evidence mentioning individuals from *Sarmizegetusa*'s citizen-body. This has established that the only *colonia deducta* in the province, founded immediately after the conquest, had a very large territory extending over the whole southwestern half of the study area, perhaps divided from the territory of *Apulum* by the Cioara stream. However, important parts of its territory would have been under imperial administration as mining (e.g. the iron mines of the Poiana Rusca Mountains) or quarrying districts. In Dacia, the resources of gold, iron and salt were more localised, but stone quarries, especially limestone and sandstone, were more scattered (see figure 5.47). Indeed, the tendency to use local stone whenever possible has been noted. It is, therefore, possible that the iron mining 'district' in the Poiana Rusca Mountains was an extensive imperial estate. Considerably smaller areas could have included the salt mining zone around Ocna Mures or even the clusters of stone quarries arround Deva, Calan or north of *Apulum*. But for all the remaining quarries, it would be more reasonable to suppose small, site-focused estates. Apart from these areas which would have been connected in some way with the imperial taxation system, the way taxation was carried out within the territory is uncertain. At least one site, though, would also have been involved with imperial taxation. At *Micia*, which is thought to lie close to the provincial border, epigraphic evidence (CIL III 7853) attests the existence of a customs office (Dobó 1975, 150). *Micia* and *Aquae* (Calan) in the territory of *Sarmizegetusa* were probably involved at a local level of administration, although it is unclear in what way. *Pagus Aquensis* and *pagus Miciensis* are both attested by inscriptions (Calan-*Aquae*: IDR III/3, nr.10; *Micia*: CIL III 1352; 7847; and IDR III/3 nr. 80). What exactly that status covered is unsure (possibly a territorial unit subordinated to the town –Piso 1995; but see Ardevan 1998, 75-78).

The spatial distribution of settlement within the study area indicates significant potential problems of access resulting from the distance between the major towns and the settlements within their territories. Although some of the problems involving the movement of people and goods had been significantly improved since the pre-conquest period by the introduction of the road system soon after the conquest, it would have remained impractical to travel on a regular basis more than 10-15

kilometres to the local market and service centre (Bintliff 1997). Both *Apulum* and *Sarmizegetusa* could have performed this role of local centre, but in the latter case there is a more limited number of settlements within a 15km radius, and because of its location it would have experienced difficulty in covering even the whole of Tara Hategului. Smaller centres must, therefore, have been needed and it is probably not coincidental that most of the known and potential smaller centres (e.g. Calan, *Micia*, Cigmau, and eventually Uroi and Blandiana) are positioned fairly evenly within the areas not readily covered by either *Apulum* or *Sarmizegetusa*. Calan is located some 17 kilometres beyond the 15 kilometres buffer-zone around *Sarmizegetusa* and 22 kilometres from *Micia*. The distance from *Micia* to *Sarmizegetusa* is much larger, but the positioning of the iron mining 'district' in between makes this less relevant. The pattern repeats itself further with Cigmau at 21 kilometres from Calan and some 18.5 kilometres beyond the *Apulum* buffer-zone; and Aiud at 15.5 kilometres away from Razboieni and 17 kilometres from the *Apulum* buffer-zone. Therefore, this pattern of spatial distribution suggests that Cigmau, Aiud and Razboieni could have similar administrative significance as the attested *pagi* at *Micia* and Calan.

The central places thus identified are likely to have been important as local trade centres. The material culture within the study area becomes so overwhelmingly Roman even in the 'poorer' settlements with native occupants, that it is impossible to imagine such a result without the ease of access to such goods, and, as shown above, the major towns alone could not properly cover the demand within the territory. Trade activities were clearly undertaken in *vici* elsewhere, whether military or civilian (e.g. Sommer forthcoming, Rorison 2001, Whittaker 1990) and often they were provided with special market-buildings. As noted above, however, no such buildings have been detected within the military *vici* of the study area. The architectural type of the strip-house is frequently attested, which indicates that trade was taking place most likely within the same buildings in which the goods were produced. They indicate particular attention being given to access to the street frontage. These were normally provided with front porticoes which, apart from attracting clientele through architectural decoration, provided covered sidewalks whenever needed. Commercial activity was probably extremely active at *Micia*, since it was involved in supplying the local auxiliary unit, the settlements in the territory around, and also in import-export activities for the areas beyond the provincial boundary. Also, especially at Cigmau and Razboieni, positioning along the main road of the province passing through the settlement had a special value. It is significant that these settlements have provided the largest quantities of coinage from archaeological excavations or as accidental discoveries in non-urban contexts throughout the study area (see above).

Although so far no clear evidence has come from the study area, further trade was necessary in specialised settlements. Of course, the products of the quarries would have been traded to some extent there, but also the fact that the local workforce did not produce their own food implies the need for such products in the market. Also, the spa centres at Calan-*Aquae* and Geoagiu-*Germisara* were likely to attract not just visitors, but also the Roman equivalent of the services that relate to the modern 'tourist trade'.

Finally, the presence of 'cash industries' associated with villa sites within the study area indicates that these settlements had significantly larger involvement in the local market system than previously anticipated on the basis of exclusively agricultural products. More than market providers, these sites were a significant sector of consumption, and not just of 'luxury goods'. Roman pottery is present in large quantities at every site, and the simple distribution of bricks and tiles across the study area (although considered as falling within a low demand market sector –see Darvill and McWhirr 1984, 242) provides striking evidence of the extent of the market that needed to be supplied with such materials.

5. Spirituality (figure 5.55)

5.1 Religion

The largest religious centre outside *Sarmizegetusa* or *Apulum* was at *Micia*. So far 2 temples, one for the *Dii Mauri* and the other probably for *Jupiter Erapolitanus*, have been identified archaeologically. They were located outside the town to the south (at some distance) and south-east respectively (the latter very poorly preserved) (Rusu-Pescaru and Alicu 2000, 77 and 92-4). Based on epigraphic evidence, other deities worshiped there were *Mithras (Sol Invictus)*, *Isis, Hercules and Nemesis* (Rusu-Pescaru and Alicu 2000) or even *Diana* (one votive inscription discovered within the north-eastern zone of the *vicus*-IDR III/3, nr. 63) *Liber Pater* or *Silvanus Domesticus*. The imperial cult (numerous *IOM* dedications, some with particular nuances –*IOM Dolichenus*, or to the *Domus Divina*) and those related to local public administration (e.g. *Genius Miciae*, *Genius Pagi Miciae*) are also present. However, culti activities and even temples were probably present in the military *vici* at Cigmau and Razboieni, as possibly indicated by a dedication to *Mithras (Sol Invictus)* at Cigmau, and that of gods like *Apollo, Pan, Epona, Hercules Magusanus* at Razboieni. At the latter, Rusu-Pescaru and Alicu (2000, 126) advance the possibilty of the presence of a *fanum*. Finally, a dedication to *Diana* was discovered at Orastioara de Sus.

Not much is known so far about religious foci (solitary temples) within the rural landscape. The sites at *Aquae* (figure 5.52) and *Germisara* (figure 5.53) probably started as religious centres connected to the presence of natural hot springs, but they might well have developed into more complex settlements because of their public attraction. The largest complex in Dacia was at Baile Herculane to the west of the study area, which seems to have had complex installations (with pools and baths) and several places of worship connected to the use of local hot springs (Benea and Lalescu 1998). Similar features, taking advantage of the natural hot water and gas accumulations in the bedrock, have also been found on a smaller scale at *Germisara* (Geoagiu Bai) some 5 kilometres away from the military *vicus* at Cigmau (Rusu and Pescaru 1993, Rusu-Pescaru and Alicu 2000, 65-74). They consisted of a large complex, excavated since 1986, involving at the beginning elaborate channelling of the water from its natural stone pool into basins cut into the native bedrock, and probably lined with timber, and associated buildings facing one channel. One of the buildings was identified as a *fanum*; the function of the other building nearby remained unidentified, but its inventory of finds (pottery, small glass vessels and a bronze spatula) indicates its possible involvement in healing practices. In front of

them and towards the natural pool stone altars have been discovered (although some were probably statue bases) with dedications to *Diana* and the *Nymphs* by officers of the *Numerus Singulariorum Britannicianorum* from Cigmau and of the XIII Gemina legion. The natural pool itself was used only for ritual deposits, and about 600 coins and, exceptionally, 7 gold votive tablets dedicated to *Diana, Hygia* and the *Nymphs* have been found. Damaged by localised tectonic movement, the complex was rebuilt and much enlarged in its second phase. Unlike Baile Herculane, where the god generally worshiped was Hercules, cult activity was focused around *Diana, (Aesculap* and*) Hygia* and the *Nymphs* (Rusu and Pescaru 1993, Rusu-Pescaru and Alicu 2000, 65-74).

Less archaeological evidence comes from *Aquae* (http://archweb.cimec.ro/scripts/arh/cronica/detail.asp?k=251 visited 20.05.2003), where no traces of cult buildings or extensive works have been found and the natural stone pool was probably used for ritual bathing by worshipers (figure 5.52). A dedication to *Hercules* was discovered accidentally nearby (CIL III 1406). However, the importance of the spa site is probably indicated by fact that it is the only one present in the *Tabula Peutingeriana* (although this can be explained by the fact that both Baile Herculane and Geoagiu Bai are some distance from the main road).

Mithras was also worshiped at Decea (225), where antiquarian research from 1901 located the cella of a mithraeum dug into the slope of a hill 300-350 metres away from the Roman road. Inside the cella were found a relief and a statue, along with two altars dedicated to *Mithras* (CIL III 12547-8). According to Rusu-Pescaru and Alicu (2000, 78), it was related to a probable military presence (*statio*?). Rich finds across the village, including the statue of a goddess, coins (among them, one hoard of Roman *denarii* and one of Dacian coins), pottery –including storage vessels, a ploughshare, lamps and bricks, could also indicate the presence of a larger agricultural settlement probably of Roman architectural type. Another mithraeum with altars and sculptures is reported at Vurpar, a Mithraic relief was discovered at Lopadea Noua and an altar to the same god at Sard.

Further dedications to gods are to be found at stone quarries (Deva-Bejan, Santamaria de Piatra or Valea Sangiorgiului) but they reflect the location of a workshop there and not a place of worship. However, there are numerous places within the study area where dedications to numerous gods have been encountered: *Hercules* (3 places); *Silvanus* (3 places), *Liber Pater* (2 places); *Dionysos, Diana, Daphne, Apollo Pythus, Bonus Puer, Juno &Nemesis, Saturn &Minerva*, or *Bacchus &Ceres*. An interesting mixture is attested at Salasu de Sus (492), where the owner of a possible villa worshiped Hercules, Silvanus and the Thracian Rider.

5.2. Funerary activity

Similarly, the study of the sepulchral aspects of Dacia are far from being completed, even for the better known urban sites. In general, study has focused on funerary monuments, either on artistic or epigraphic topics, rather than on the social information that might be recovered (Ciongradi, 2004 a and b). The cemeteries outside Micia (east –figure 5.35), Razboieni and that under the modern settlement at Geoagiu (possibly used by the visitors to the spa) have suffered significant destruction

because of modern constructions (for *Micia* see Ciongradi 2004 b; for Razboieni –Moga and Ciugudean, 1995, 153-4; for Geoagiu- IDR III/3, 228 and 261-3). They are typically Roman, with funerary monuments (*stelae* or more elaborate types, even funerary constructions) and sarcophagi in stone or brick. Aerial photographs detected the remains of a few small rectangular enclosures, one of them with an apse, which could be interpreted as probable funerary constructions (figure5.35) as crop marks in cereal fields within the area of the southern cemetery at *Micia*.

Within the study area 51 sites have been located where Roman funerary monuments have been identified (figure 5.55) , but only 16 of them indicated that the burials/cemeteries were probably found within their archaeological context. Another 44 locations contained indications of funerary activity, whether in a group (19 cemeteries) or individual (25). Few cemeteries have been excavated, and in the rural areas work has focused mostly on those identified as of Dacian type. A large such cemetery has been excavated within the study area at Obreja near a Daco-Roman village, where between 1967 and 1971 over 240 cremation and 6 inhumation graves have been revealed. In only 5 cases were the cremation remains not deposited in an urn. Epigraphic manifestations were totally absent, but the material culture proved by the funerary inventory is, like in the settlement, overwhelmingly Roman. Very few ceramics found in the cemetery, as well as in the village, are Dacian; indeed indigenous pottery vessels were present in only 12 graves (and in only 7 were they used as urns), the vast majority being Roman (in red or grey ware). Similarly, in the Daco-Roman cemetery at Soporu de Campie outside the study area, only 10-15% of the pottery was Dacian. Apart from a few bronze coins (most very damaged, but some determined as from the reign of Antoninus Pius), the inventory included personal jewellery -beads in glass or amber (one in silver); ear and arm rings in bronze or silver (one gold earring), several brooches and rings with cameos- and other possesions (e.g. mirrors, a cosmetic box, a glass and a lacrimarium, a bone comb).

Some funerary sites are, or are assumed to be, related to villa settlements (certain - Cincis, Rahau; assumed - Deva, Reea, Ghirbom, Sebes, Salasu de Sus, Orastioara de Jos, Hapria). At Cincis, the small cremation cemetery 200 metres from the villa included 5 simple pit graves, 8 tumulus graves (one double) and 4 graves in a funerary enclosure/construction. Inside the construction only one grave had a brick sarcophagus; 2 were tumuli and the 4th was in a simple pit. Previous accidental discoveries indicated that it had 2 funerary statues in marble from Bucova, and ashlar blocks coming from the funerary construction. The cemetery was identified as related to a native village associated with the villa (Floca and Valea 1965), but this is is contradicted by the small number of graves and the immediate proximity to the villa. The finds inventory is Roman (with the occasional presence of Dacian pottery) and included pottery, lamps, a few bronze coins, personal items and jewellery (even in gold and silver), but lacking terra sigillata. Exceptionally, near the double tumulus grave a fragment of a *stela* was discovered, with its inscription severely worn.

Another cremation cemetery thought to be related to a villa site was discovered at Deva (Marghitan 1998). In this case, the graves were in cists made in brick and tile; the upper part of a *stela* representing 2 lions on each side of a Thanatos, and the fine pottery (mainly grey, but also red wares) reveal a Roman tradition. The site was excavated only partially and no estimation has been made of

its real extent. However, the fact it is located approximately 1 kilometre from the villa and at a lower altitude towards the Mures, and that there is dense (although perhaps scattered) occupation in the area of Deva, makes us believe that the cemetery should be related to a different site, or perhaps even served several sites around.

It is clear that in general the funerary practices in the Roman time contrast significantly with that in the period before the Roman conquest when very few such contexts have been documented (see chapter 4). Nevertheless, it it perhaps the context where the evolution in personal identity of the natives towards romanisation can be followed best, as for example at Obreja and Cincis.

6. Society

A major question concerns who inhabited the countryside of Roman Dacia? A simplistic scheme would assume that architecture reflects social status/wealth and, even more, ethnicity. The more romanised aggregated settlements including the small towns are assumed to have been inhabited by colonists, while the others, built in traditional fashion, to have belonged to natives; by the same token, that villas were owned by Roman colonists, veterans and the municipal elite, and formed estates around the towns in which they lived (e.g. Protase 1968, 508-509, Diaconescu, 2004). Under this traditional scheme, a stratified provincial society has been assumed with an elite stratum of of villa owners, largely of veteran origin, at the top, including perhaps also some rich entrepreneurs among the colonists. Below this would have been a stratum of colonists in settlements built in the Roman fashion, and finally, at the lowest level, the native population of the 'poorer villages'.

Clearly there was a stratified society in the area and their social status would have found expression through architecture which would have influenced the wide typological range of settlements. But to what extent does architecture indicate wealth? The most romanised examples of architecture outside the major towns are to be found in the small towns, in particular the military *vici*, and in villas. Like elsewhere, the 'small towns' (especially the military *vici*) tended to garner a very cosmopolitan society (Sommer, forthcoming, Rorison 2001, 80-9) through the variety of their functions (trade, transport, crafts, religion, administration) and through the availability of money to be spent or invested. *Micia*, for example, was a centre for anybody with interests connected with the military unit stationed there. It was a producer of pottery, metal and glass artefacts, stone monuments and sculptures, commercialised in numerous shops. It had large public baths, a small amphitheatre and various temples. It was also a financial centre (at least through its customs office), a starting or temporary stopping point for road and water transport and for travel to and from *Barbaricum*, and it had its own elite and pseudo-institutions (Ardevan 1998, 75-8). Unfortunately, not enough is known for the other small towns in the area, but since most of them had multiple and varied functions, some of this description could fit them as well.

Thus the 'small towns' had both a permanent and a temporary population. They were visited on a regular or incidental basis by large social groups from variable distances. Epigraphic evidence from *Germisara* and *Aquae* has provided sufficient indication of their attractiveness, not just within the

region, but within the whole province, and to all social levels. We meet at *Germisara* governors (e.g. P. Furius Saturninus –IDR III/3, 232 and 236) or municipal magistrates (e.g. Aurelius Maximus – IDR III/3, 215), along with freedmen (e.g. M. Aurelius Crescens –CIL III 1399), and even one of the very few epigraphic manifestations of a probable member of the native population (Decebalus Luci dedicating a gold tablet to the *Nymphs* at *Germisara* -Rusu and Pescaru 1993, Fig. 20).

The majority of sites throughout the study area provide evidence for extensive use of Roman building material (figure 5.49), in contrast with other parts of the province, especially the eastern half (Popa 2002, 221-2). This has been taken once again to reflect differences in ethnicity and levels of wealth. But according to current data, these sites were also the most favoured in terms of easy access to Roman products given their location in relation to road and river transport, or to the main urban centres. As shown above, most of the sites with reported use of stone walls, bricks and tiles, are within 3 kilometres of the line of an identified road or of the site of a reported road, and more than half of the sites with only pottery finds are located further than 3 kilometres from the roads. Moreover, the sites which embrace Romanised construction methods include some settlements continuing from the pre-Roman period (Cetea and Cicau) or 'new' Dacian settlements (e.g. Uioara de Jos). It is, therefore, more likely that the distribution of 'romanised architecture' primarily reflects availability rather than ethnicity. On the same basis we cannot simply assume that villages in the eastern half of the province were poorer than those in the west, because the effort and costs involved in acquiring these materials would have increased progressively with their distance away from the main transport routes and sources of supply.

Villa sites of Dacia have looked disappointingly poor to most scholars of the subject (including their excavators!). It is often the case that material culture surviving in archaeological contexts can create a false or incomplete interpretation as to the wealth and status of the site. The practice of comparative analysis can be particularly dangerous, when no attention is given to chronology, at both an intra-site and inter-site level of study. In this particular case, the villas of Dacia stand little chance in comparison with villas elsewhere in the provinces along the Danube, or in the Roman Western Europe. According to K. and P. Dark (1997, 43) "archaeologists of Roman Britain usually define the villa by the presence of both 'prestige' and 'romanized' attributes, including mosaics, Roman baths, tessellated floors, sculptured columns, marble wall veneers, painted plaster and aspects of the ground plan of the building". Although it has been accepted there that many other sites without such features could still be interpreted as villas (see above), expectations when it comes to villas remain those listed by K.and P. Dark. As shown above, the villas of Dacia rarely have tessellated, brick or even *opus signinum* floors. Painted wall plaster is only occasionally mentioned by excavation reports. Sometimes (as at Hobita-Hobeni hill) the provision of hypocaust installations or indeed baths is very limited or even completely absent (e.g. Cincis). Finally, there is very little evidence of stone/marble sculptures and architectural ornamentation, and no evidence of formal gardens -indeed, only on very rare occasions is the layout of the courtyard and buildings within the enclosure known. On the other hand, villa houses from Dacia with dimensions of 20-30 by 14-20 metres are not much smaller than standard western examples (the largest house so far is at Manerau, twice the size of other examples within the study area!) and when wall painting occurs it is often elaborate, even in houses considered

on the basis of their house plan to have with minimal architectural (and, therefore, social) pretensions (eg. Deva).

The difficulty in estimating their original look and real estate value is further increased on the one hand by the research methodology employed for their study, and on the other, by repeated looting over time, which had no doubt occurred in most of the cases. Materials from Santamaria Orlea have been extensively used throughout the modern village and around (Popa 1972), and Roman bricks probably from the Aiudul de Sus villa were re-used in modern buildings in Aiud (Moga and Ciugudean 1995, 24); also, the medieval strongholds from Malaiesti Rachitova, Rau de Mori, or the Densus (Figure 5.46) and Strei early medieval churches built extensively with Roman material (Popa 1989, 41-58).

But the chronological evolution of the sites being used for comparison is often overlooked in comparative studies. The evolutionary pattern of the villa phenomenon in Britain indicates clearly that, apart from Fishbourne (and a few other sites in the south-east England) the villas of the first and second century are "characteristically simple, both in plan and decoration. Most of them are either 'cottage houses' as at Lockleys, or winged villas, as at Titsey, with aisled buildings apparently only introduced (perhaps from Germany, where the form is common) in the second century" (Dark and Dark 1997, 64). The emergence of the villa is related to romanization through architectural expression of elite status by the natives. But "the biggest expansion in the number and grandeur of Romano-British villas was, however, in the fourth century. The most elaborate villas of this period had more architectural sophistication, a greater complexity of plans, a larger scale at many of the biggest establishments, and lavish decoration", which were "plainly the centres of the estates of magnates"; at the same time though, "the majority of late Roman villas in Britain were much simpler structures" which "were still, however, buildings that seem to have been intended to impress" (Dark and Dark 1997, 69-70). Similarly, the transformation of the Hispanic countryside had also started with the emergence of settlement on lower altitudes (at the bottom of the river valleys) which consisted mainly of farmsteads and very small villas (Millett 2001, 162).

Returning to Dacia, its villas never achieved the "villa boom" of Britain or the geographically closer provinces of Pannonia and Moesia (Mulvin, 2002), simply because by that time it had ceased to be a territory of the Roman Empire and in those circumstances, the evolution of its landscape in both historical and archaeological aspects would have been very different. The emergence of villas starts in some cases in the first half of the 2nd century AD, but becomes more established much later, which is the normal evolution in other provinces. So far it appears that villas were built directly in stone, without a timber phase, though this remains to be verified by future research. But at their peak, these sites were at a similar stage of development and probably similar 'property value' as most of their contemporary western counterparts.

Overall, the settlement pattern of the study area outside the urban centres within the Roman period reflects to a large part the society and its structure. Most of the excavated villas attest architectural pretensions and the increasing provision of comfort with hypocausts, decorated floors and wall plaster, glass windows, and baths in a sustained evolutionary process culminating in the Severan

period. They probably would have evolved further had there not been an early interruption of the Roman occupation. In the light of new site plans provided by aerial photographic interpretation, large houses with plans similar to villas (although smaller in size) have also been discovered within small towns (*Micia*, Razboieni, Cigmau) or at their edges (e.g. *Micia*) which were probably the more 'up-market' properties within these settlements. However, non-urban centres also provide evidence for extensive use of timber architecture, sometime mostly replaced by stone architecture (at *Micia* in later phases) but in some ocasions still preserved, along with the use of native-origin features such as storage pits (Aiud).

As for the apparently 'poor settlements', again the conclusions cannot be clear-cut. Lower-order settlements are more difficult to define, mostly because of the biases affecting the current data set and research methodology, but future studies could address this issue if the awareness is already there. According to the architecturally-based definitions of wealth and status, lower-order (native architecture) settlements are apparent in both individual and aggregated types of settlements, from individual homesteads to very large villages. The finds in the traditional village at Obreja were lacking very expensive luxury items. However, the finds inventory of the cemetery clearly indicates the use of sandals, Roman jewelry (including a few silver and gold items) and personal hygiene items (cosmetics, oils, combs, mirrors). But the cemetery of the villa at Cincis was also lacking in numerous luxury items and, perhaps not accidentally, the same villa house is the only recorded example from the study area without a hypocaust.

Summarising, it needs to be underlined that the contrast between the study area (with rather poorer villas but traditional-built villages with surprisingly wealthy material culture) and other areas/provinces of the empire is only apparent. Villas do indicate the social status of their occupants, but the definition of their economic wealth should take into account several factors. Firstly, there is the chronology factor referred to above, which should stop us from making unfair comparisons with 4th century villas elsewhere. Secondly, one should remember that villas were, ultimately, just a particular (i.e. romanised) type of individual homestead and a large variety of types (and probably real-estate values) has been documented elsewhere (Smith 1997). In the study area, the villa at Manerau, on the basis of its size and degree of luxury, clearly indicates a degree of wealth considerably higher than the one at Cincis nearby (although smaller villas like Deva can also indicate considerable levels of richness). That the study area had a wealth of sites with evidence of Roman building materials, perhaps hinting at further villas, also indicates that smaller farms might have found the materials reasonably affordable. It is hoped, therefore, that a more thorough and nuanced definition of social status will soon come to replace the ones currently in force in the archaeology of Dacia.

A more nuanced analysis is also required when it comes to defining ethnicity through material culture. So far architecture has very much been taken as a good indicator of ethnicity in Roman Dacia, as exemplified in the typology applied to villages (Roman-built and traditionally-built), which to some extent has been preserved in this study. But the material culture (tools, bread ovens) of the poorer settlements is also Roman, apart from mixed ceramics (with wheel-thrown Roman, and hand

made, non-Roman forms). Moreover, as shown above, the settlements with traditional architecture and those which continued to be occupied from the pre-conquest into the Roman period all provide clear indications of architectural 'romanisation'. This suggests quite an extensive exposure to Roman culture and the process of acculturation taking place.

Not surprisingly, many colonists are attested in the military *vici*, but possibly the process of their romanisation was not much advanced at the time of their arrival and may have been finalised in Dacia. Indeed, the fact that none of the military *vici* of the study area has been granted municipal status (unlike Porolissum or Tibiscum) might indicate the fact that, despite a very Roman appearance and lifestyle, still the body of Roman citizens was not sufficiently large under Septimius Severus to justify such status; it was probably only after the *Constitutio Antoniniana* that everybody there became a citizen (*contra* Ardevan 1995 and 1998, who explains it by lack of land available in the territory). The same applies to the colonists in the gold mining area who, at least from administration's point of view, were not very romanised either on their arrival in Dacia given the perpetuation of pre-Roman administrative structures (native *principes are* attested epigraphically - CIL III, 1322=ILS, 7153).

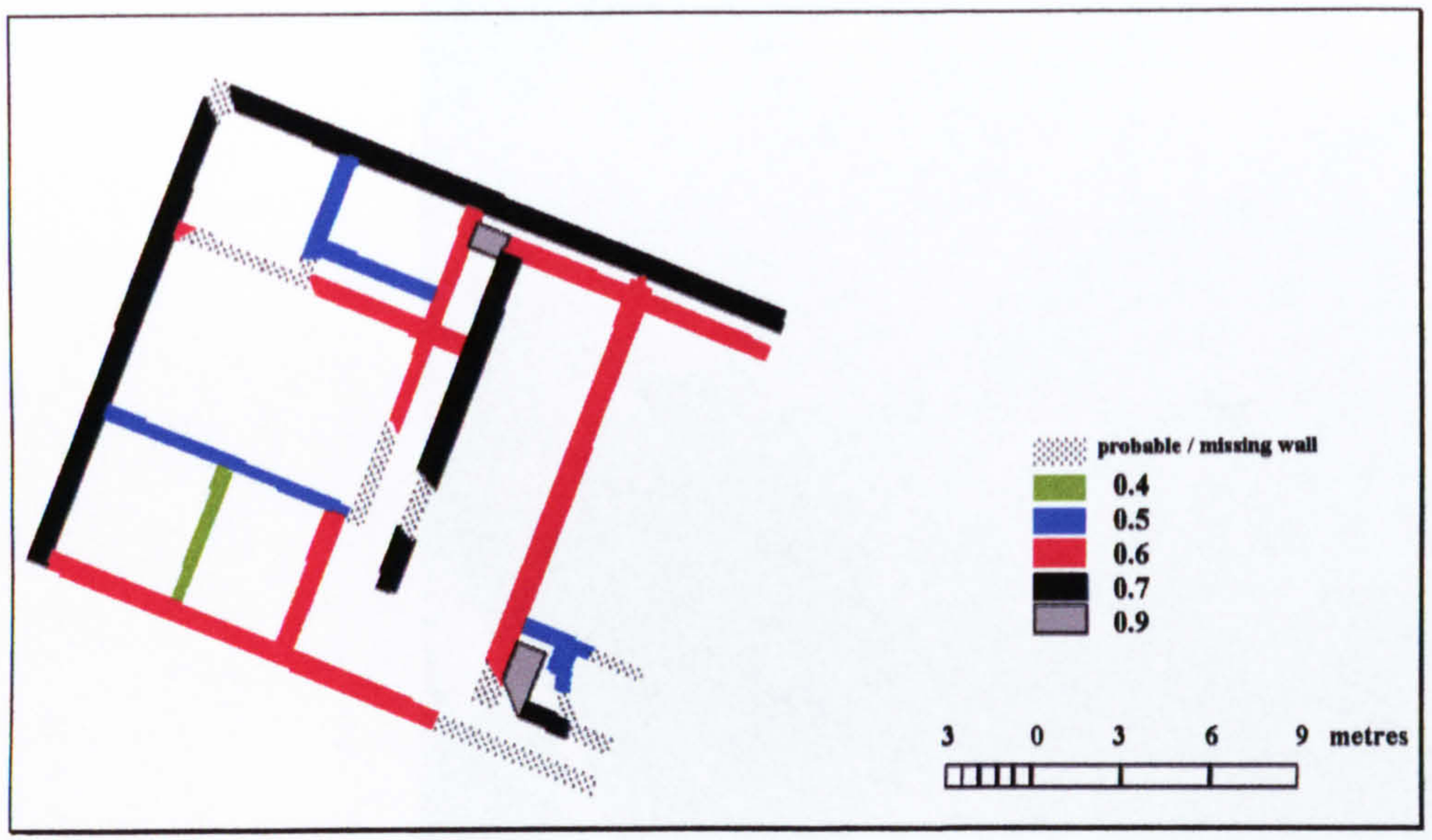
If in both urban and military sites funerary, epigraphic and other types of evidence seem to indicate quite a large population with an origin other than indigenous (see also Ciongradi 2004 a and b), the current level of archaeological data for the rural areas makes it impossible at this point to assert a similar percentage of colonised elements there. The argument in support of a Roman veteran origin for the owners of villas in Dacia is usually built around the epigraphic evidence. But the huge majority of epigraphic monuments discovered in Dacia come from urban and military sites; only a few come from rural contexts and, with very few exceptions, they were discovered in secondary positions. Indeed, there is only one certain epigraphic indication of a veteran origin for a villa owner (outside the study area at Ciumafaia -Mitrofan 1973, 135-136) with only hints from a few other examples (e.g. Rahau –Popa 2002, 151). Moreover, the *adsignatio* that everybody assumes to have taken place still remains largely a supposition, with very limited direct evidence (see above and Oltean 2004).

More recently, the analysis by Smith (1997, 199-216), in stressing the similarities between Dacian, Pannonian and Moesian villas as very different in conception to villas in Italy or the western provinces of the Empire, intimates that it could suggest a local tradition of construction. But despite his general tendency to interpret villas from the social perspective of the indigenous pre-Roman population, when dealing with the south-eastern European areas he fails to consider the evidence of pre-Roman elite houses in order to understand the link between social structure and villa architecture, or, indeed, to seek other explanations for architectural particularities. In fact, examples of native pre-Roman houses (figure 4.1) from Luncani and the *Sarmizegetusa Regia* area reveal a strong resemblance to the local type of villas from this area of Europe. Within the area covered by the present study, among the details of villa plans that can be paralleled in pre-conqest architecture are the orientation (probably accessed from the south or south-east), the internal space division and the

possible gradual flow of access through different rooms (*contra* Smith 1997, see above). This might, therefore, suggest pre-Roman roots for the villa houses in Dacia, as in the western part of the Empire.

As shown above, the fact that the villa sites in Dacia had only tessellated floors instead of mosaics, or that the number of finds recovered from villa sites is poor, is not necessarily an indicator of their 'poverty'. The few indications of phases of evolution that have emerged from the re-interpretation of the archaeological data discussed in this chapter indicate that they did experience a gradual evolution in wealth and sophistication. The archaeological evidence from villas included sporadic finds of hand-made Dacian ceramic fragments in the *pars rustica* of several villas, which represent mainly storage vessels. Although they could be indicative of the function of the building, rather than of the ethnic origin of its occupants, they nevertheless suggest some kind of native presence (Protase 1980, 154-157 and fig. 23). In one case, at Santamaria Orlea, fragments of fine Dacian tableware have been discovered, which have led to the suggestion that in this particular case the site might have been owned by a member of the native elite (see above). At Aiudul de Sus, a similar possibility was advanced based on evidence of Dacian pottery (including a fragment of tableware -'fructiera'), but mostly because of the discovery of a Dacian-type ploughshare (see above). Late pre-Roman native occupation of villa sites has been documented by excavation at Rahau, Seusa (see Haynes and Hanson forthcoming) and, outside the study area, at Chinteni (interestingly, under the remains of the house from the earlier phases - Alicu 1998, 132). Another possible example of a relationship between a villa site and settlement of late pre-Roman date is at Vintu de Jos (see above and chapter 4). The lack of evidence of this kind at other known sites (or, indeed, of earlier timber villa phases) could again be the result of limited stratigraphic excavation failing to reach earlier levels at most excavated villa sites. The case of the unfired hypocaust found in the Manerau villa might, therefore, be analogous with examples from the Iron Age and Romano-British farmstead at Whitton (Jarrett and Wrathmell 1981, 79 and 95), and is perhaps indicative of a native owner (Oltean 2004). Finally, most of the hoards discovered in the study area have accumulations of Republican and Imperial coin (Jeledinti, Tisa, Rahau, Teius, Decea –Rahau related to villa), and in some cases (Teius, Decea) they contain even earlier Greek and Dacian coinage. In one case, at Salasu de Sus (Sasa) a hoard of early Republican denarii (3rd century AD-see Popa 1989, 53) was discovered in the context of a probable villa and its cemetery.

It would be wrong to ignore the fact that epigraphic sources and ancient historians give a somewhat different picture of the native population of Roman Dacia, as virtually non-existent (2% of Thraco-Dacian names). But it would be just as wrong to ignore all the other indications that the villa population in the study area (and probably in Dacia as a whole) might have been just as 'multicultural' as elsewhere in the Roman provinces. In this case, another explanation should be sought for the absence of the natives in the epigraphic record, other than their physical absence from the upper echelons of society.



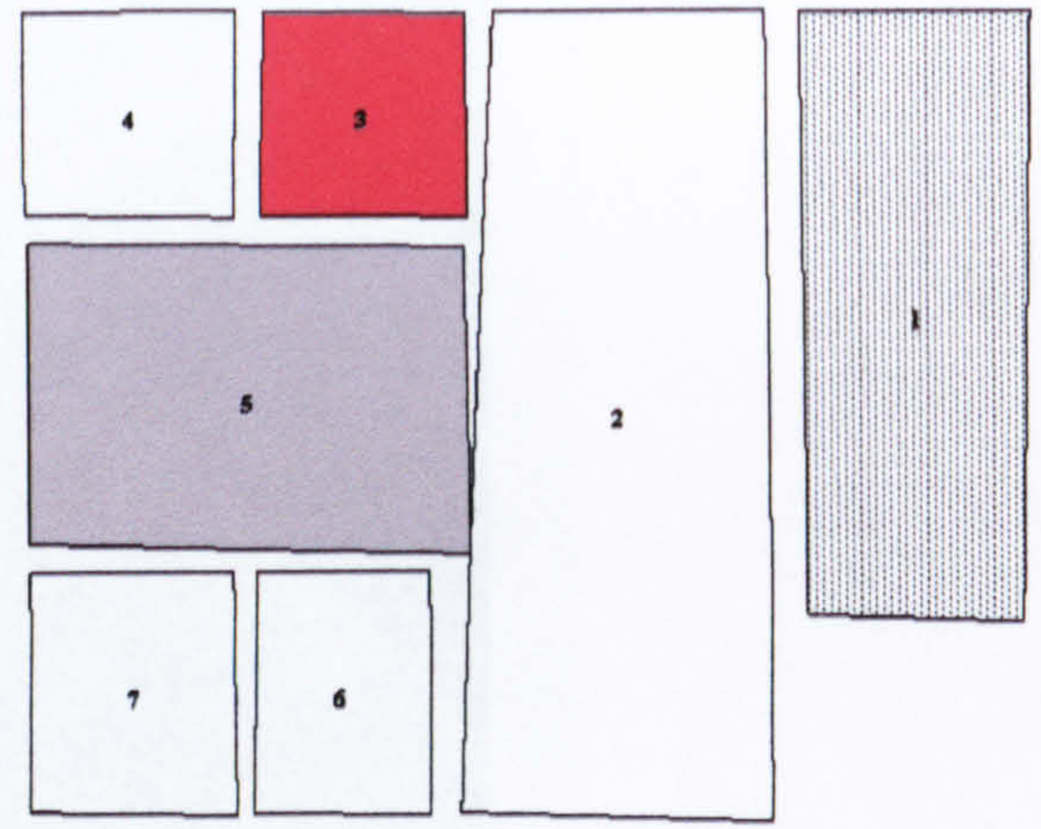


Figure 5.1: Plan of the Aiudul de Sus villa house showing differences in walls width and a possible interpretation of internal space division (stipple - porticus area; grey - 'hall'; red - hypocaust room)

Figure 5.2: Non-*villa* building north of Alba Iulia (WSH)

Figure 5.3: Multiple buildings of the Roman *villa* at Oarda revealed as negative cropmarks in cereals (WSH)

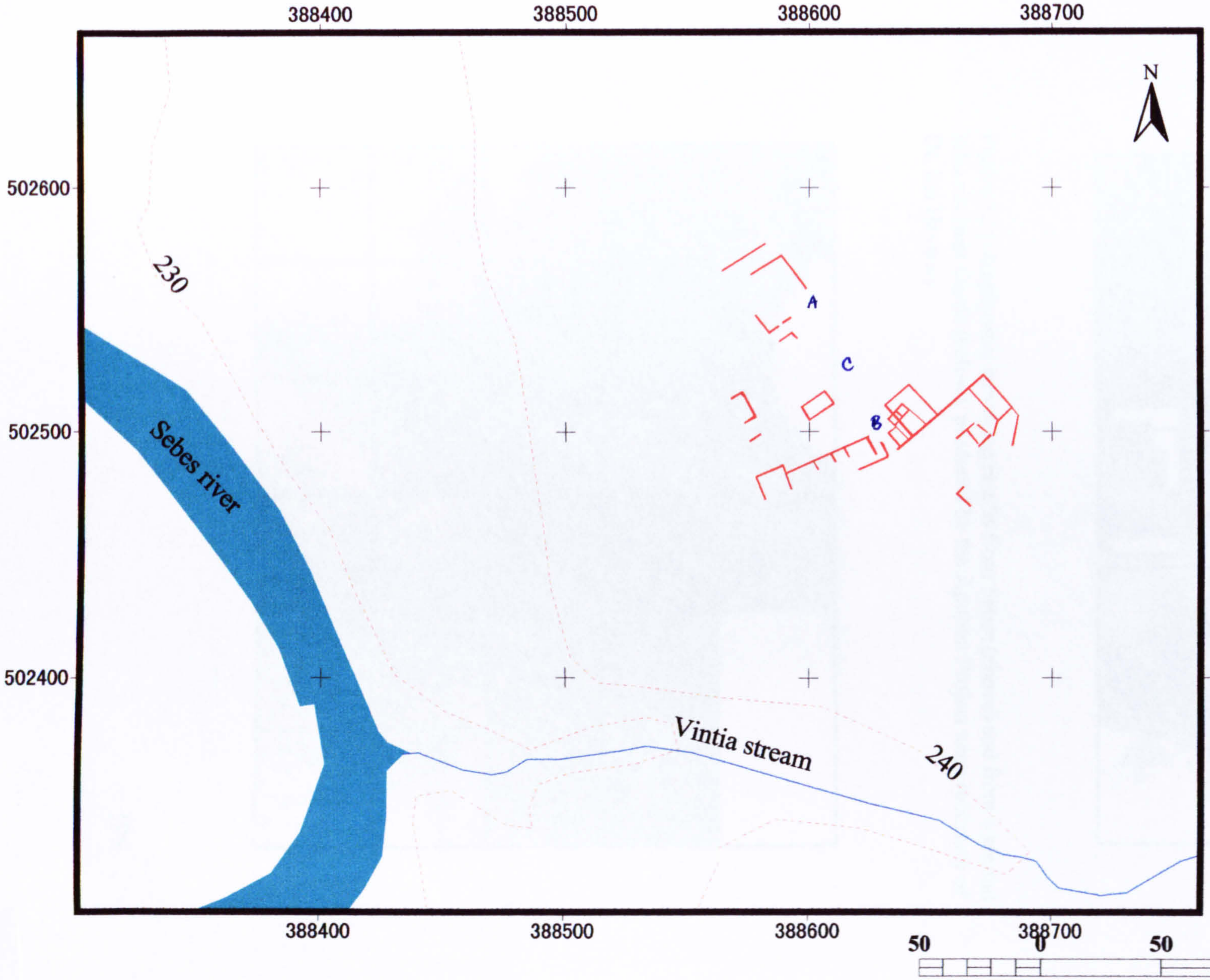


Figure 5.4: Plan of the Roman villa at Oarda

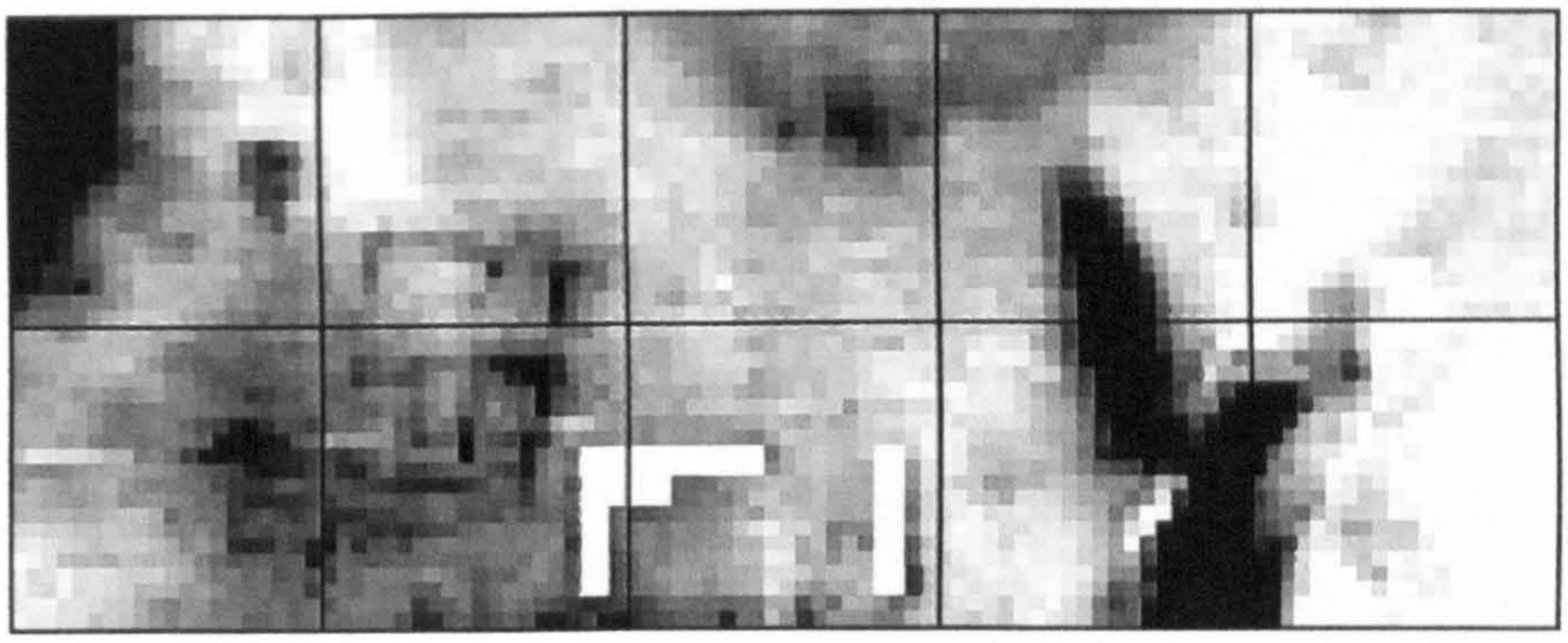


Figure 5.5: Geophysical surveying results from Seusa (above) and from a second *villa* site near Oarda (below), produced by the Apulum Project team (courtesy of Dr. Ian Haynes)

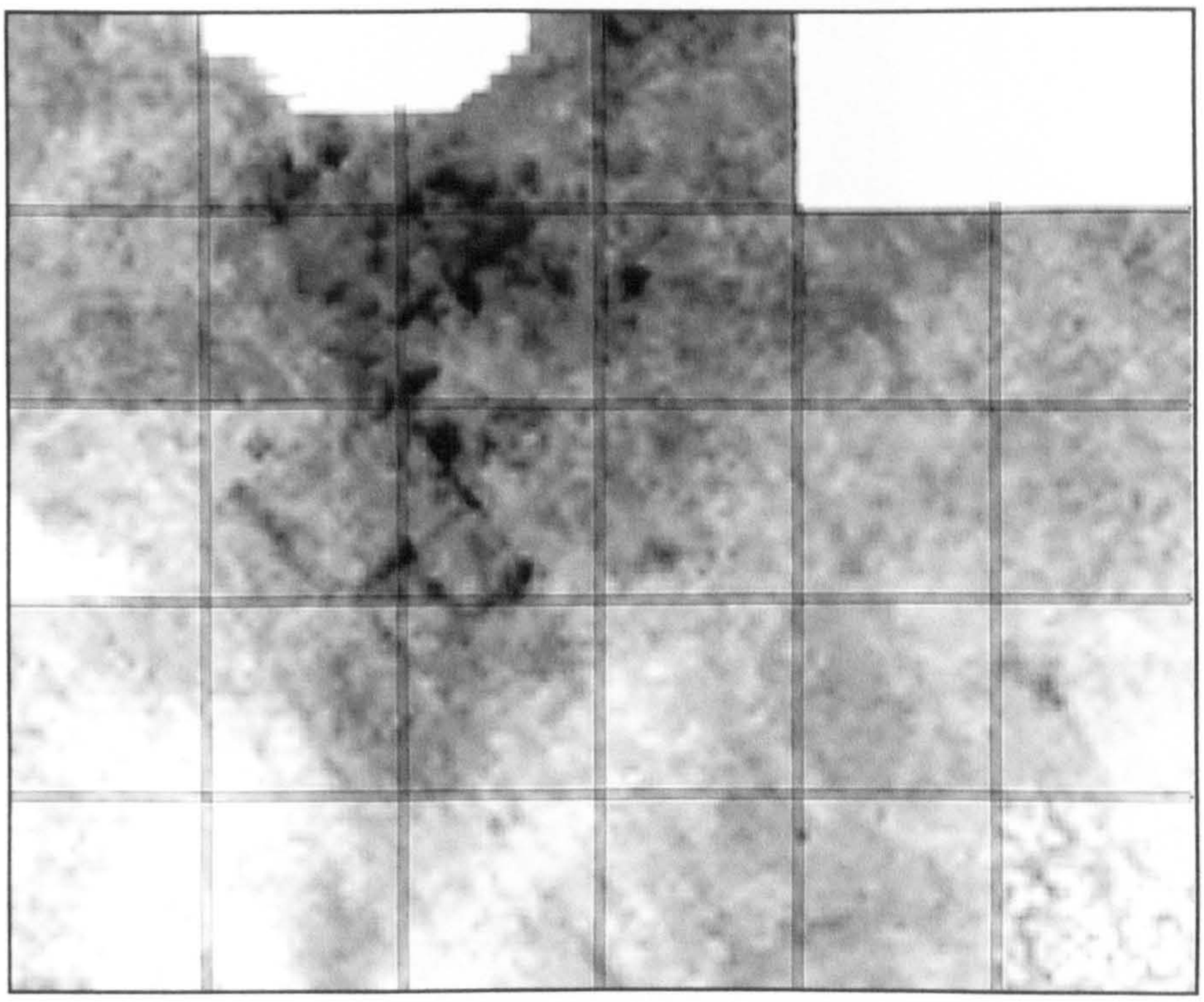


Figure 5.6: General view of the site of Roman *villa* (encircled) adjacent to the pit and sunken house village east of Vintu de Jos (WSH)

Figure 5.7: Roman tegulae and prehistoric pottery from the site (WSH)

Figure 5.8: Roman villa (in red) nearby the prehistoric village east of Vintu de Jos

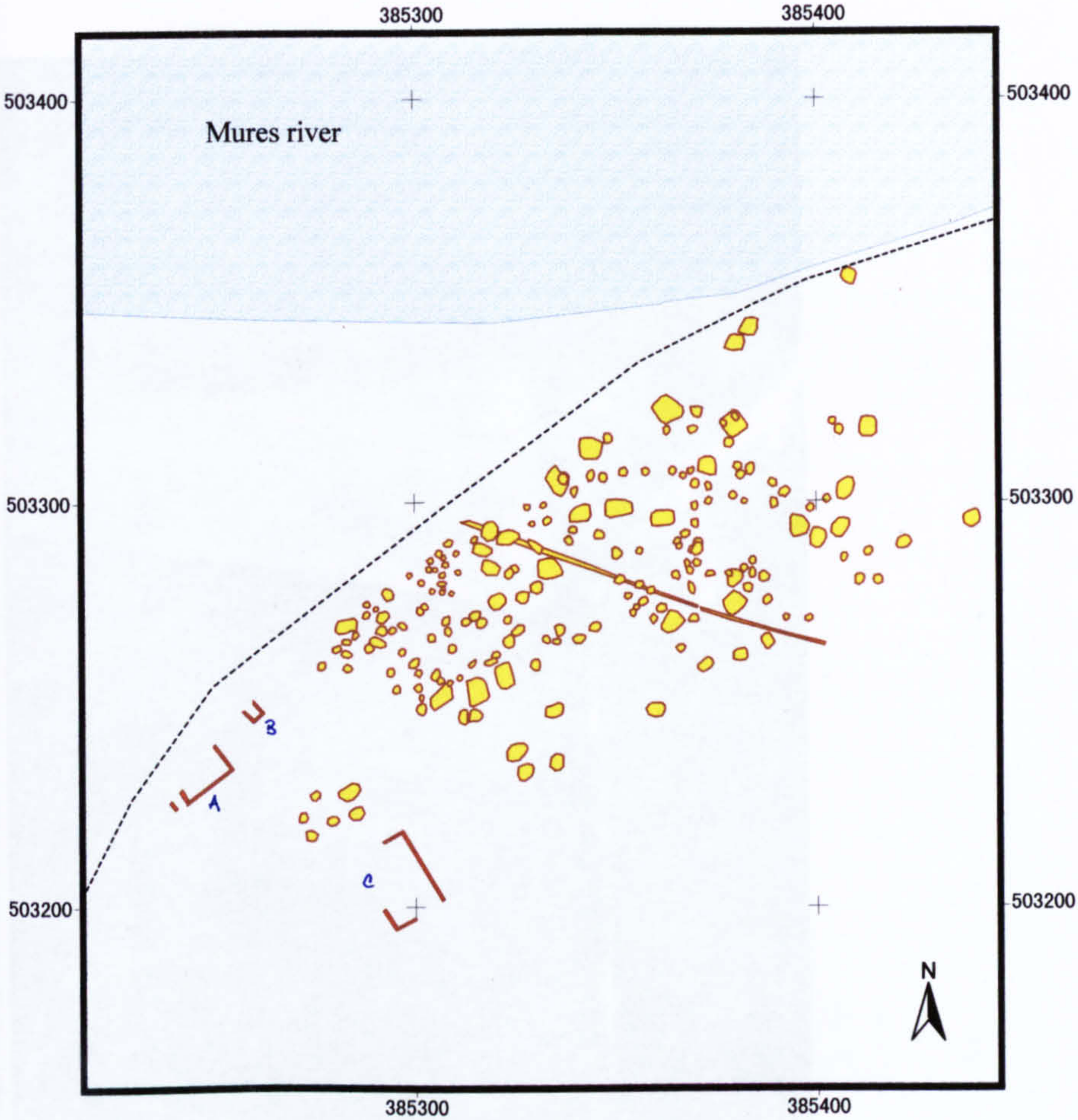


Figure 5.9: Multiple buildings visible as cropmarks under modern cultivation at Vintu de Jos indicating a possible *villa or village (WSH)*

382100

382200

501100

501000

N

382100

382200

50 0 50 Meters

Legend

archaeological features

Figure 5.10: Probable Roman villa or village at Vintu de Jos on the southern bank of the river Mures

Figure 5.11: Roman and medieval material collected from the site of possible Roman *villa* or village at Vintu de Jos (WSH)

Figure 5.12: Strei *villa* and early medieval church (IO)

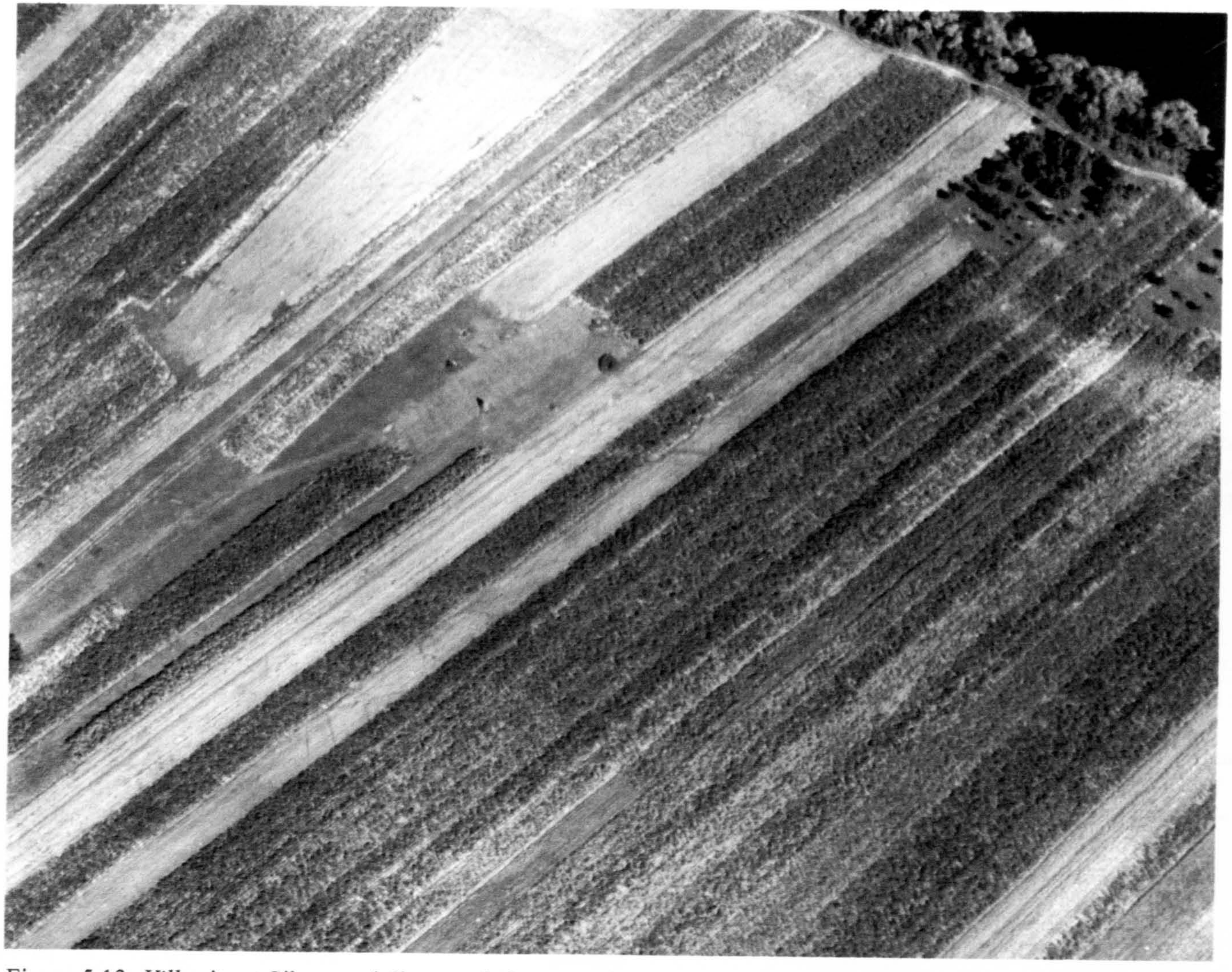


Figure 5.13: *Villa* site at Sibot partially revealed as negative cropmarks because of cultivation in long narrow strips of different crops, some of them not influenced in their growth by the archaeological features underneath (WSH)

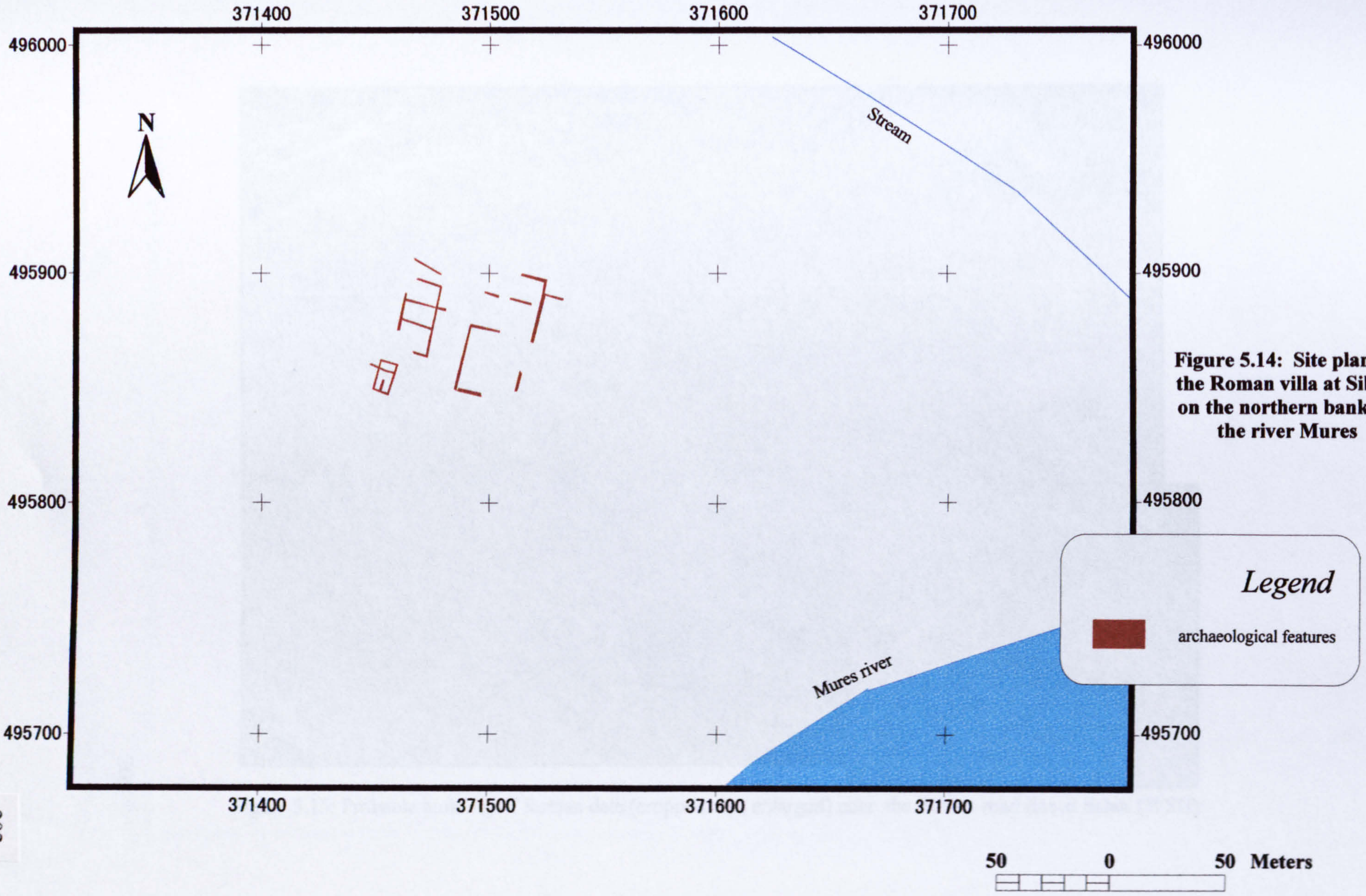


Figure 5.14: Site plan of the Roman villa at Sibot on the northern bank of the river Mures

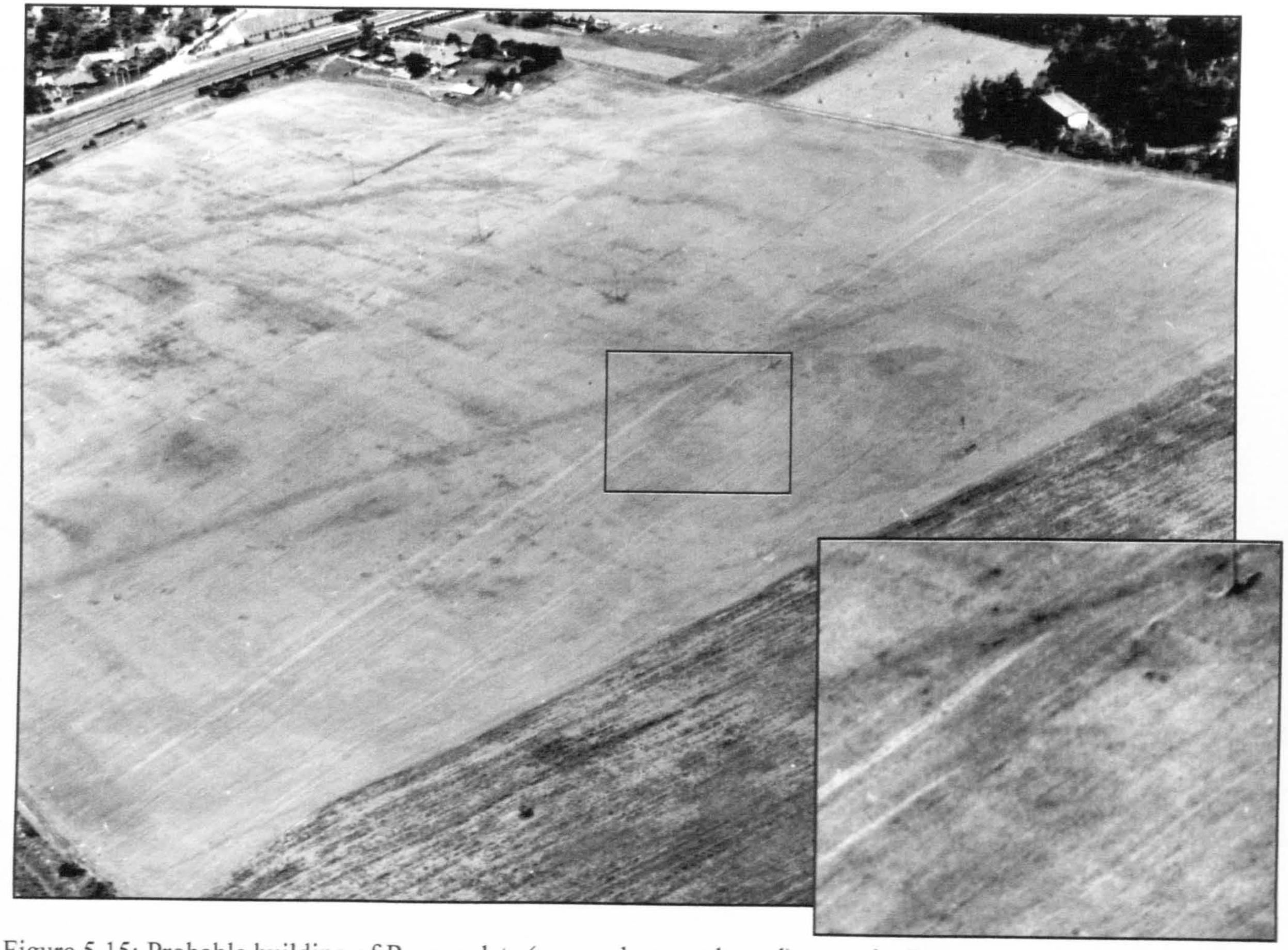


Figure 5.15: Probable building of Roman date (cropped area enlarged) near the Roman road line at Sebes (WSH)

Figure 5.16: Possible Roman building alongside road line

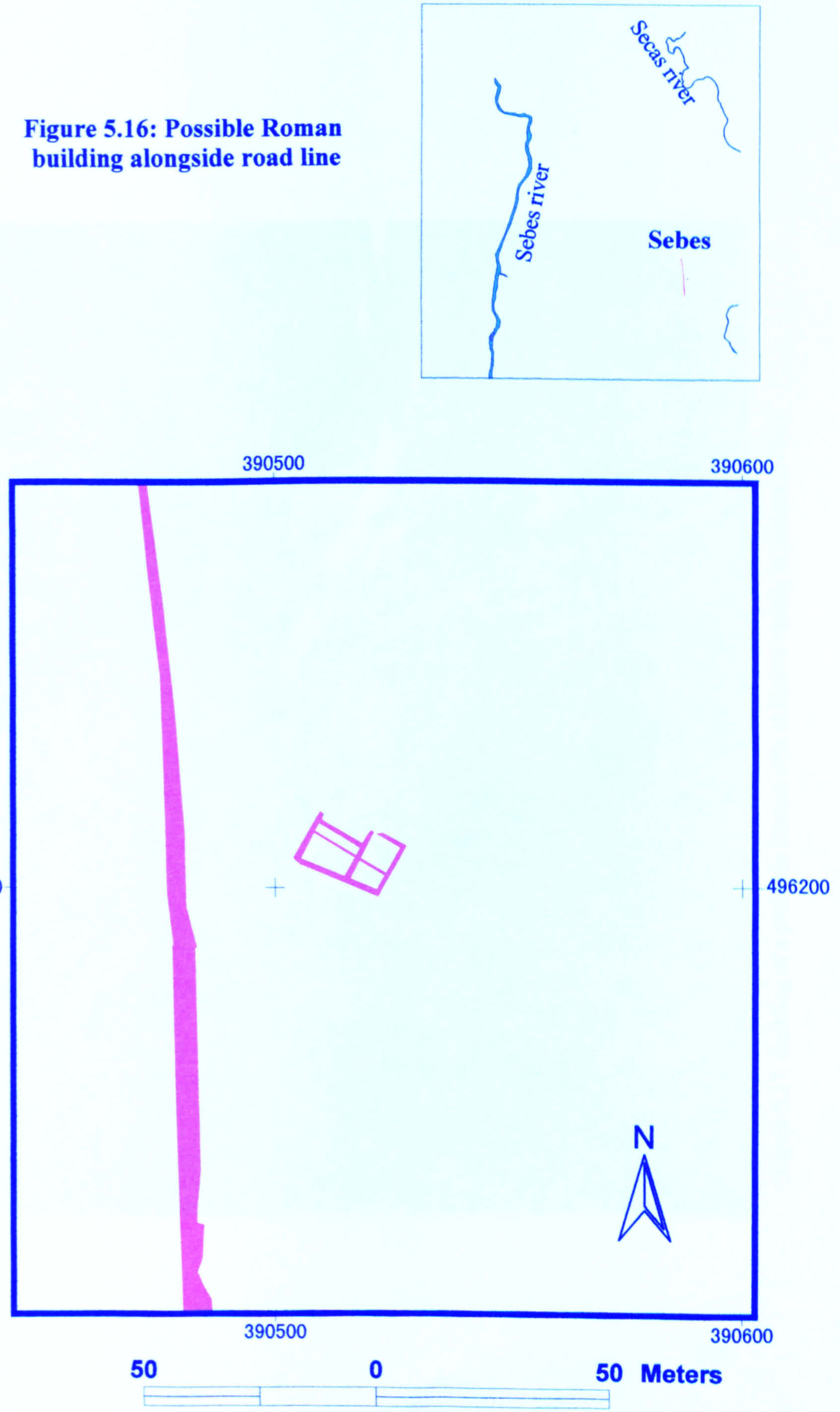


Figure 5.17: Building of a probable Roman villa at Hobita visible in pasture (WSH)

328200
328300
446900
446900
590
600
N
Stream
446800
446800
328200
328300
10 0 10 20 30 40 Meters
Legend
buried walls

Figure 5.18: Plan of the probable villa house east of Hobita on Sucioni hill

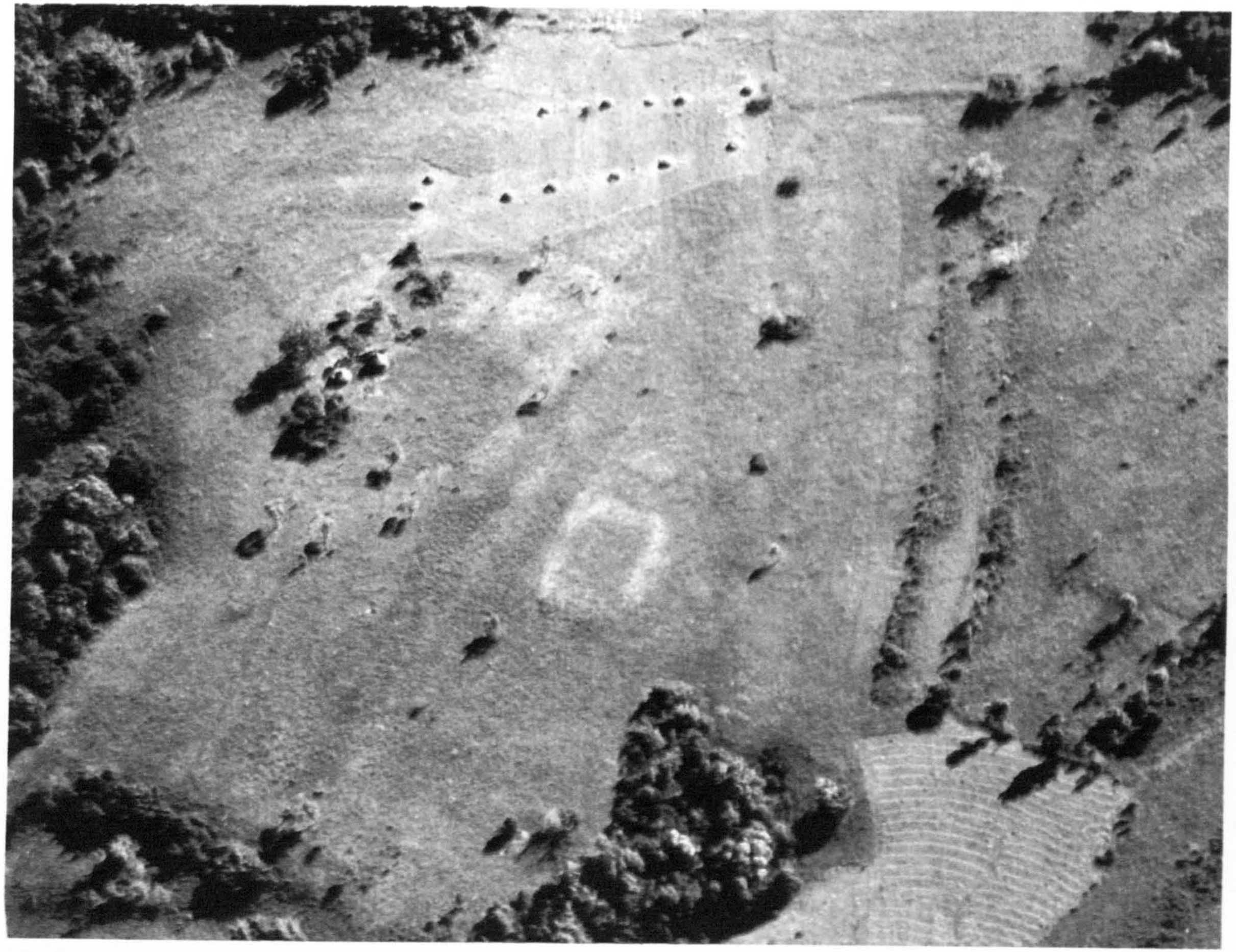


Figure 5.19: A second possible example of *villa* at Hobita (WSH)

328500 328600 328700

Stream

447400

N

530

20 0 20 40 60 80 Meters

447400

Figure 5.20: Plan of possible villa east of Hobita on Sucioni hill

447300

540

447300

2

1

447200

447200

Legend

buried walls

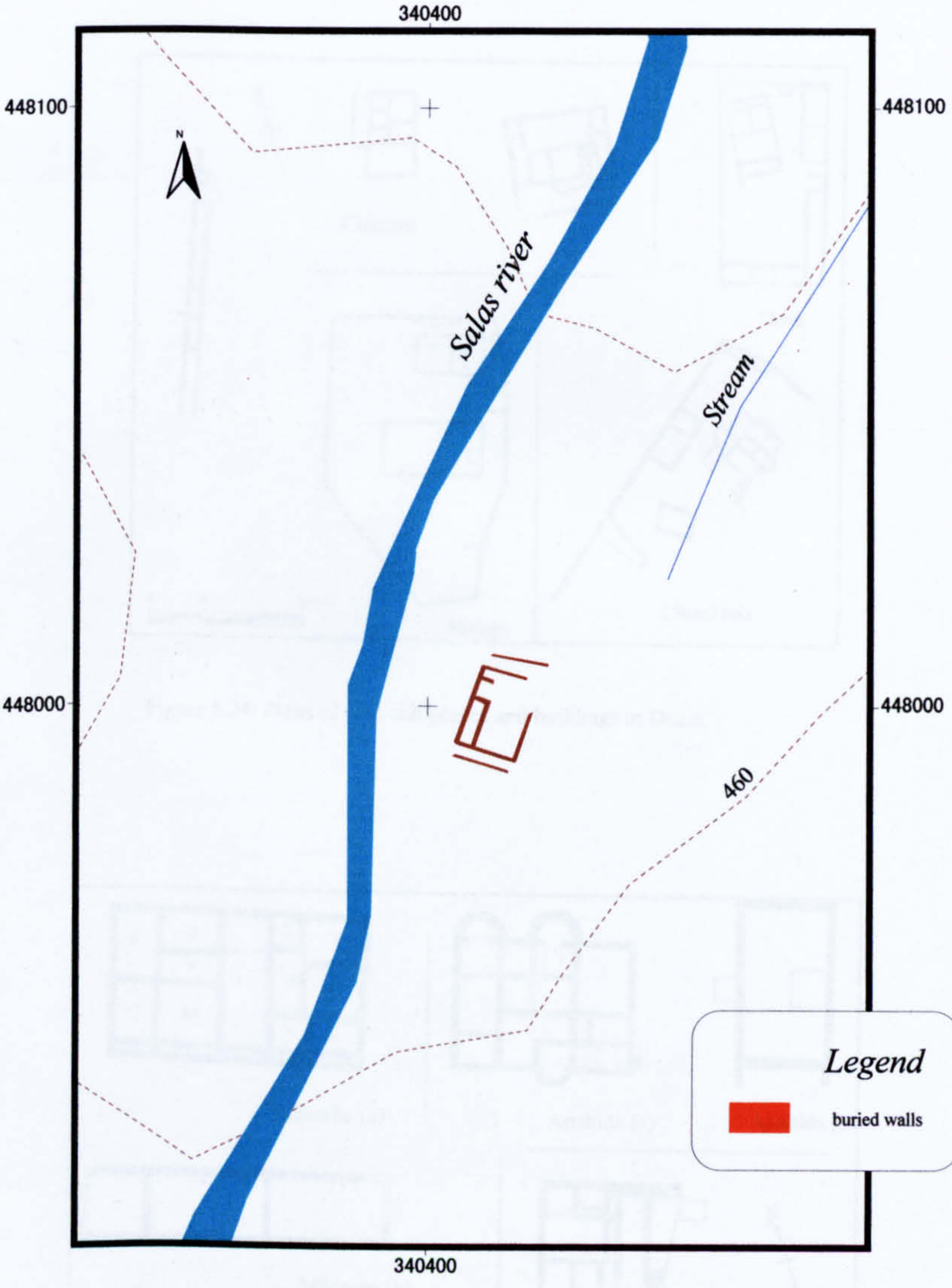
Stream

328500 328600 328700

Figure 5.21: General view over Tara Hategului from Hobita *villa* (fig. 5.17) and millstones coming from the second site (fig. 5.19) (WSH and IO)

Figure 5.22: Possible *villa* building visible under grass coverage at Salasu de Sus (WSH)

Figure 5.23: Site plan of the possible villa at Salasu de Sus



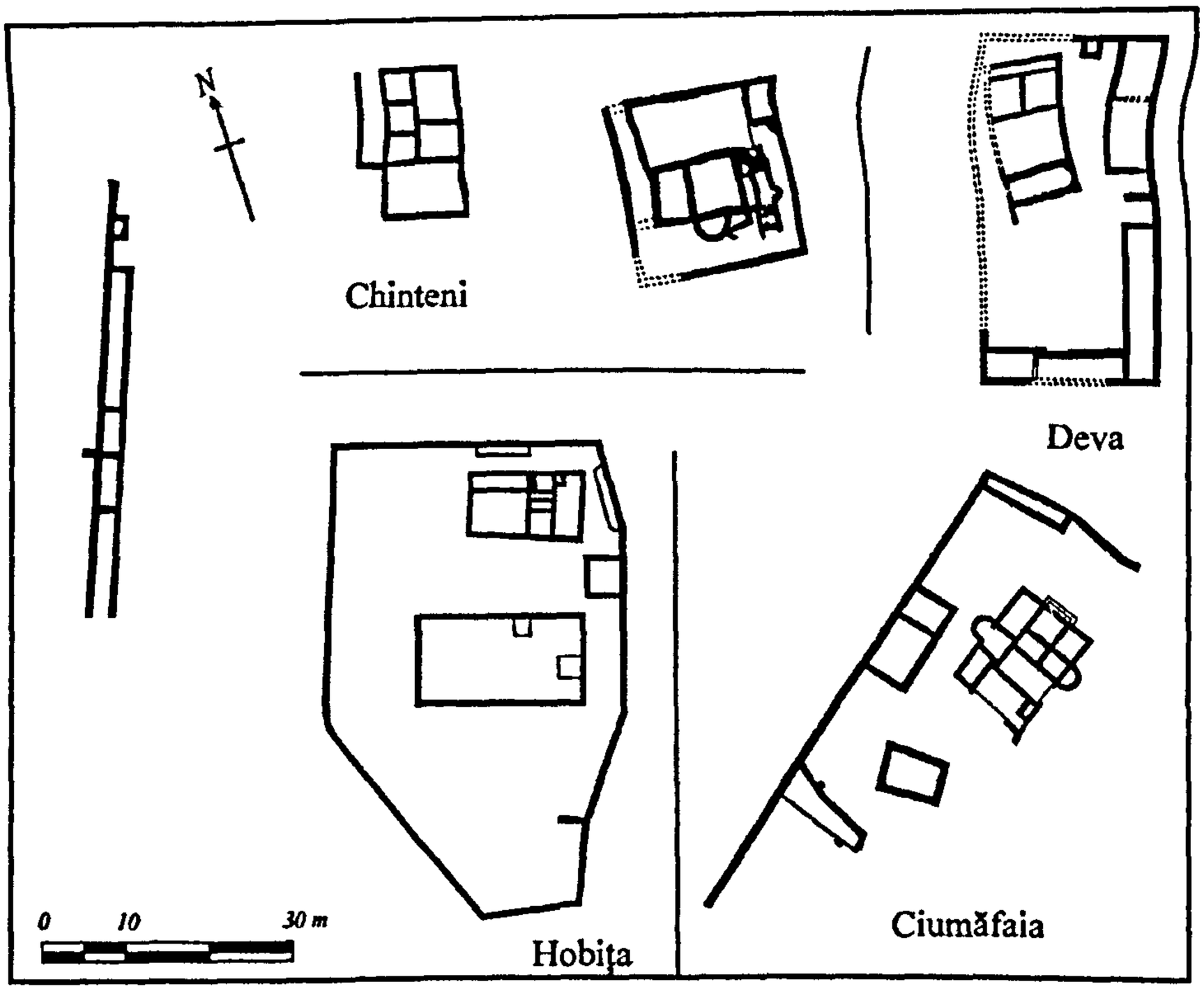


Figure 5.24: Plans of villa complexes and buildings in Dacia.

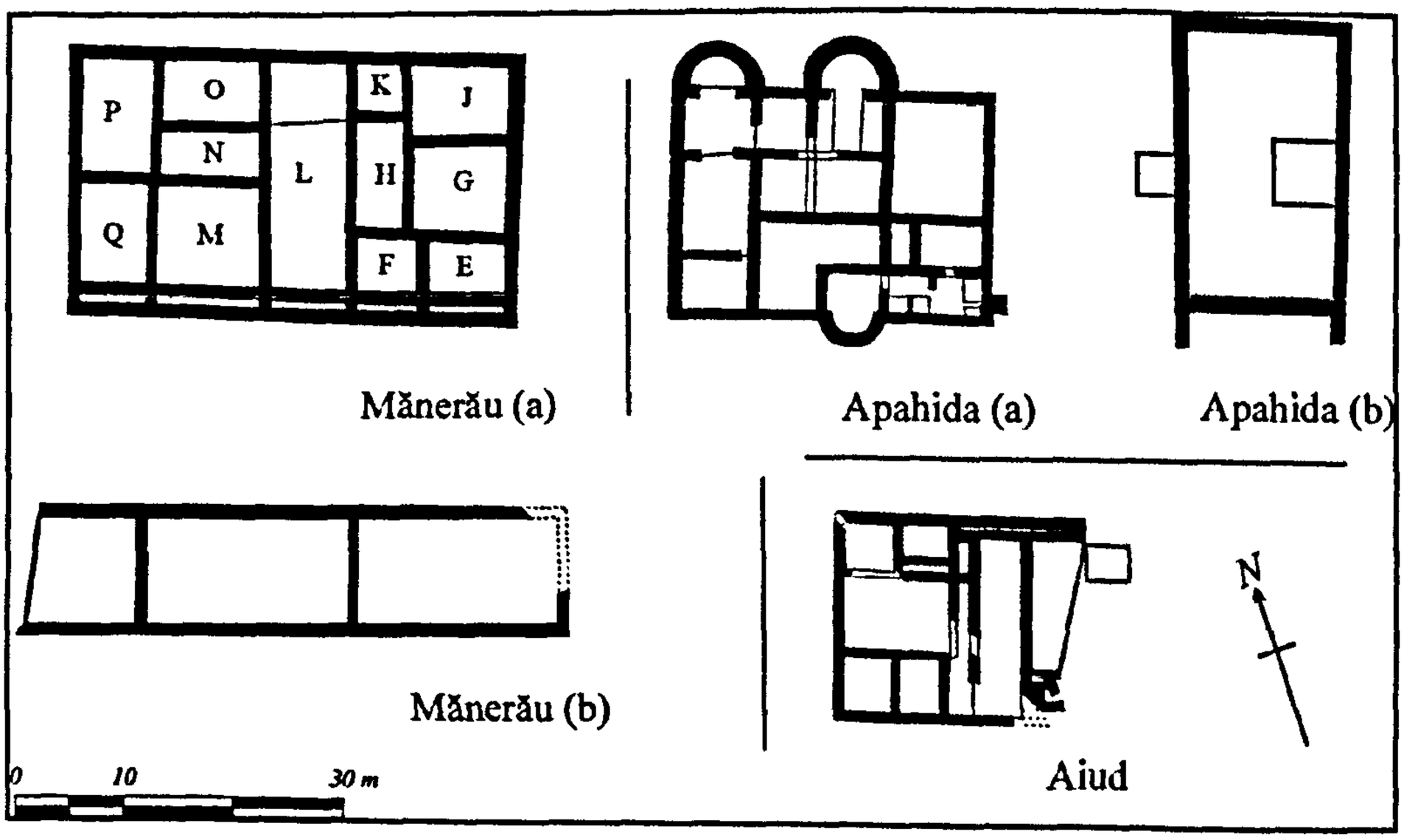


Figure 5.25: Aiud-Cetatuie mound in the Mures valley settled at multiple moments throughout time; in the Roman period a homestead or villa was located at the eastern end (left) (WSH)

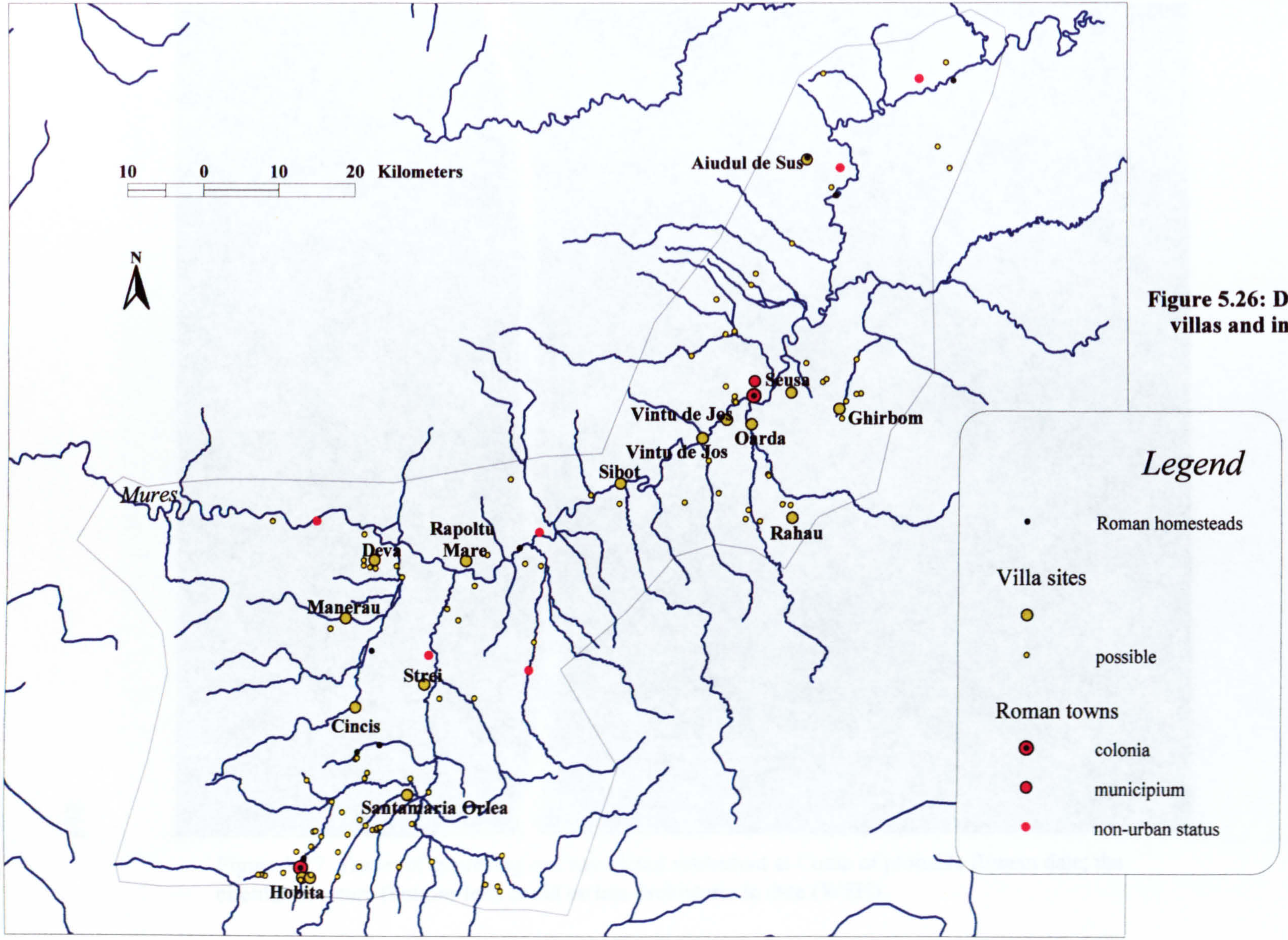


Figure 5.26: Distribution of Roman villas and individual homesteas

Figure 5.27: Traces of quarrying and associated settlement at Cozia of probable Roman date; the circular structure (bottom-left) could be late Prehistoric in date (WSH)

Figure 5.28: Extensive remains of gold quarrying activity since Roman (possibly Dacian) time at Pianu de Sus (WSH)

Figure 5.29: Limestone quarry of probable Roman date to the west of *Sarmizegetusa Ulpia* -in the background left (IO)

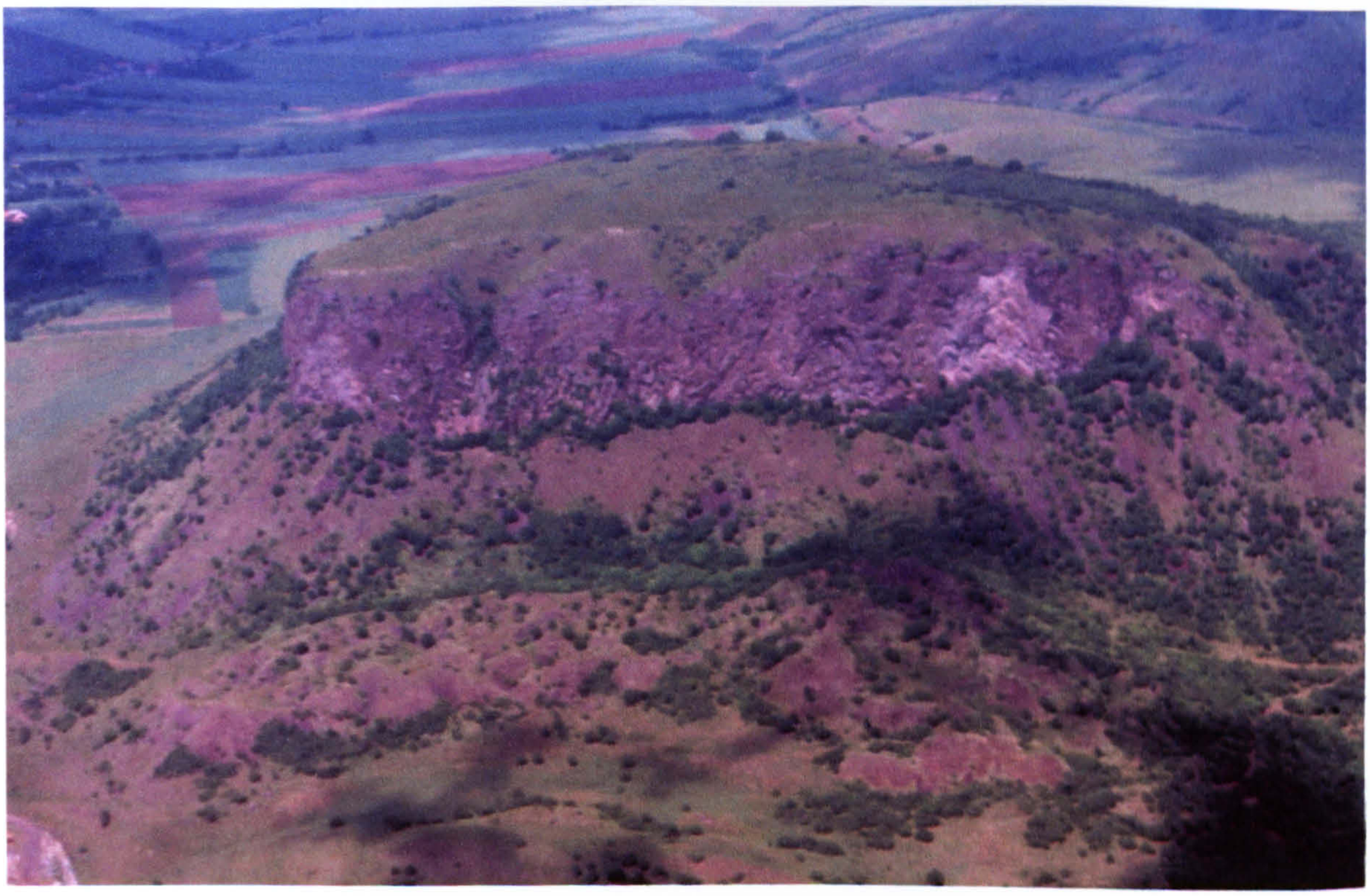


Figure 5.30: Roman andesite quarry at Uroi (possible *Petris*) in the Mures valley (WSH)

Figure 5.31: Excavated area of the military *vicus* at *Micia -thermae* and amphitheatre (WSH)

Figure 5.32: Parts of the north-eastern area of the *vicus* at *Micia* revealed as cropmarks in successive strip fields (WSH)

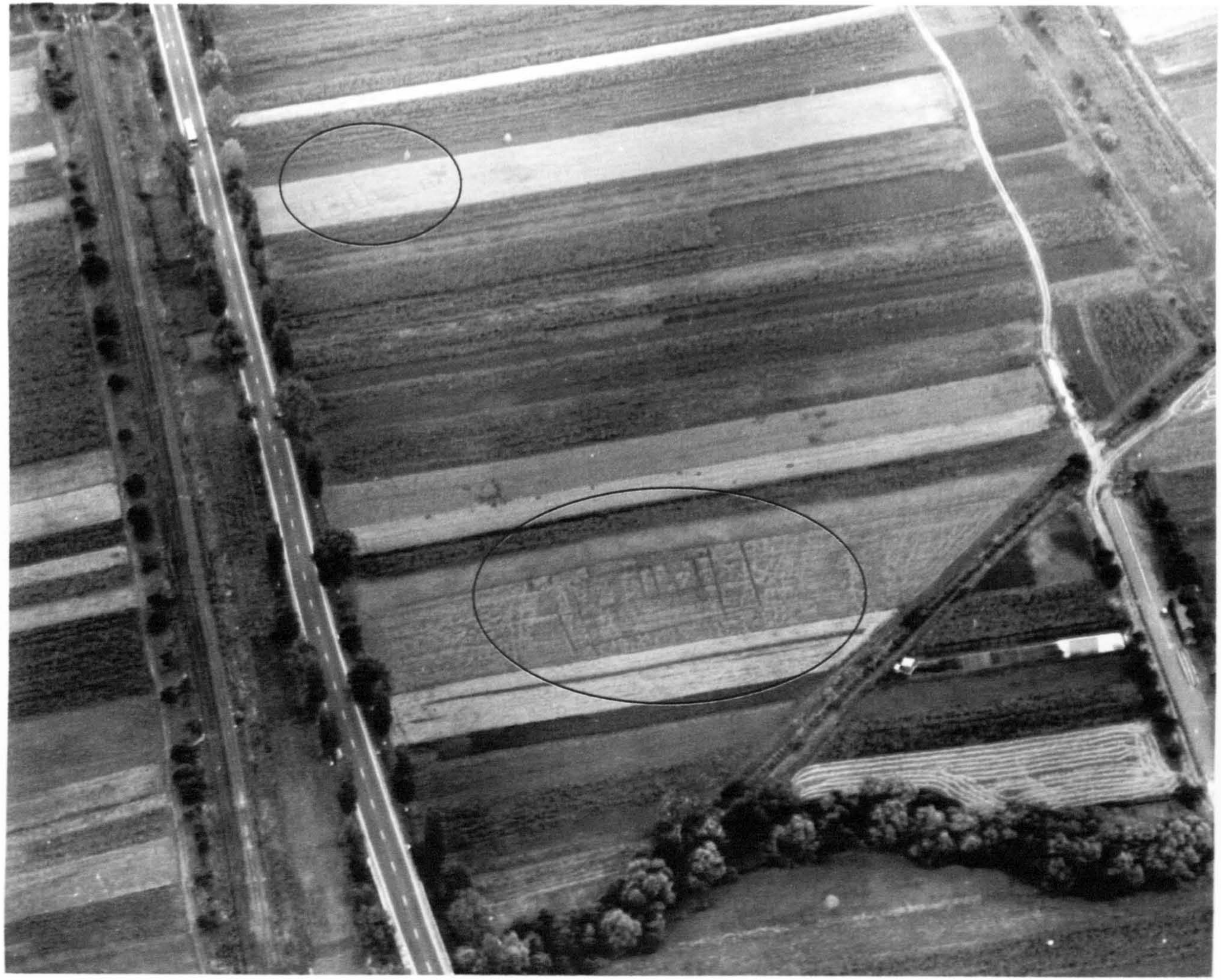


Figure 5.33: *Micia*: domestic buildings to the west of the fort (WSH)

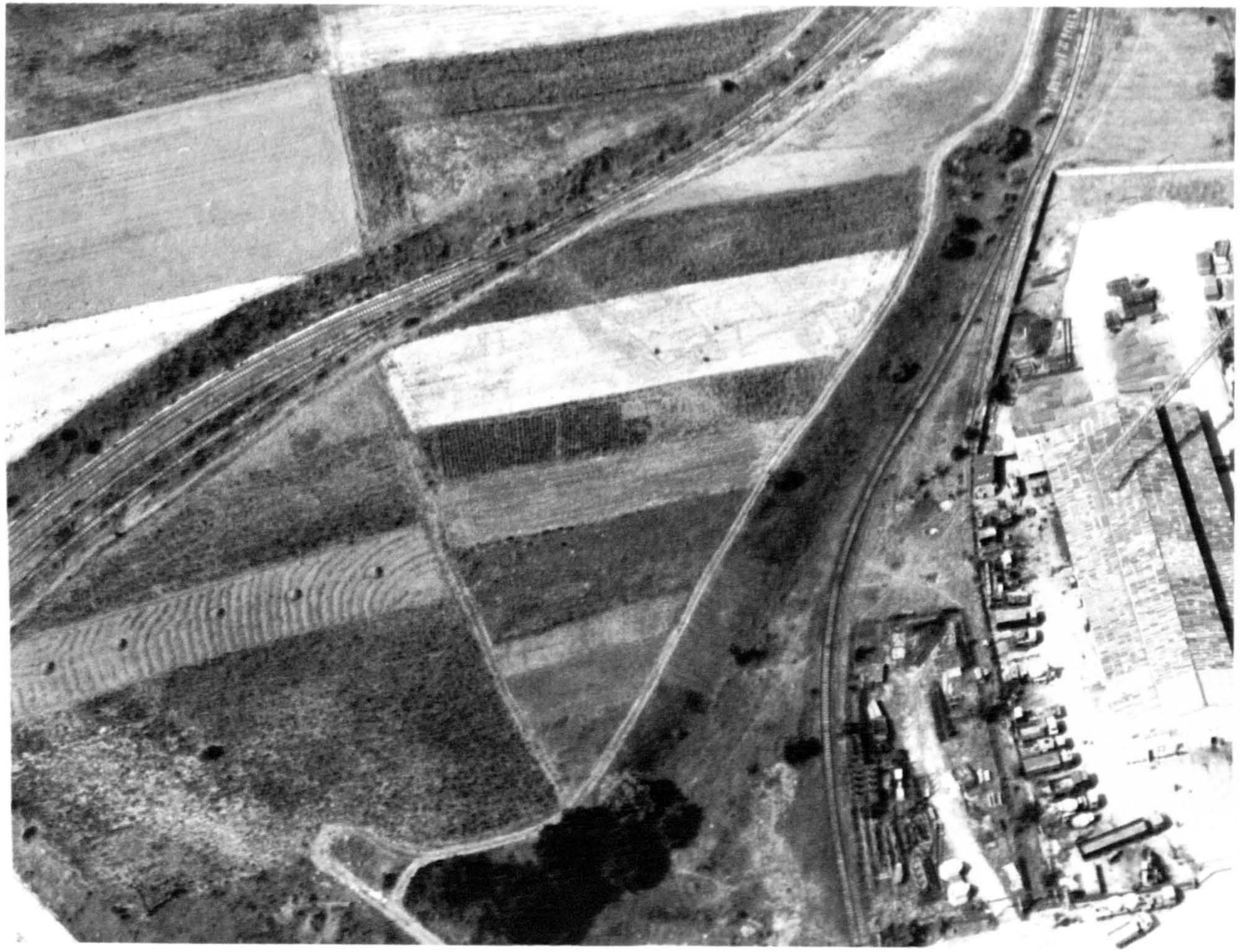


Figure 5.34: Micia -buried buildings and roads in the southern sector of the vicus (WSH)

Figure 5.35: Vetel - Micia Roman military vicus

Figure 5.36: Cigmau -general view of the auxiliary fort and of the central part of the *vicus* showing buildings and internal roads; in the foreground (centre) the triple ditch and rampart enclosure system of the pre-Roman hillfort are still visible, partially extant (WSH)

Figure 5.37: Cigmau -view of the road leading from the main core of the vicus eastwards, to Geoagiu and Gelmar; faint traces of buildings inside the vicus along the road and elsewhere are also visible (WSH)

Figure 5.38: Cigmau-Germisara Roman auxiliary fort and military vicus

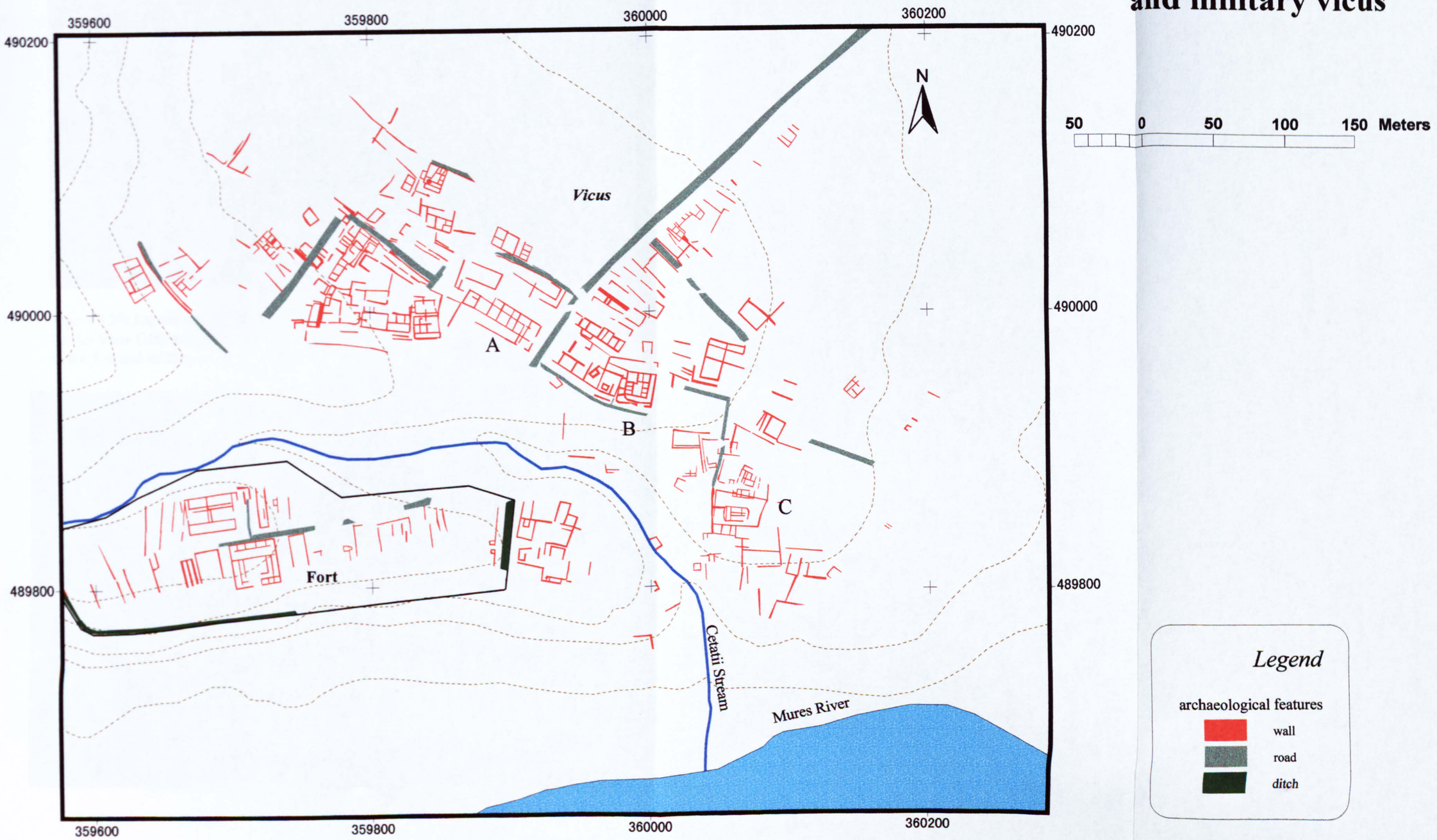


Figure 5.39: Layout and terrain model of the fort and military *vicus* at Cigmau –*Germisara* (in ArcView GIS) and exaggerated height factor 3-dimensional terrain model of the location of the fort and military *vicus* at Razboieni (in AirPhoto) (IO)

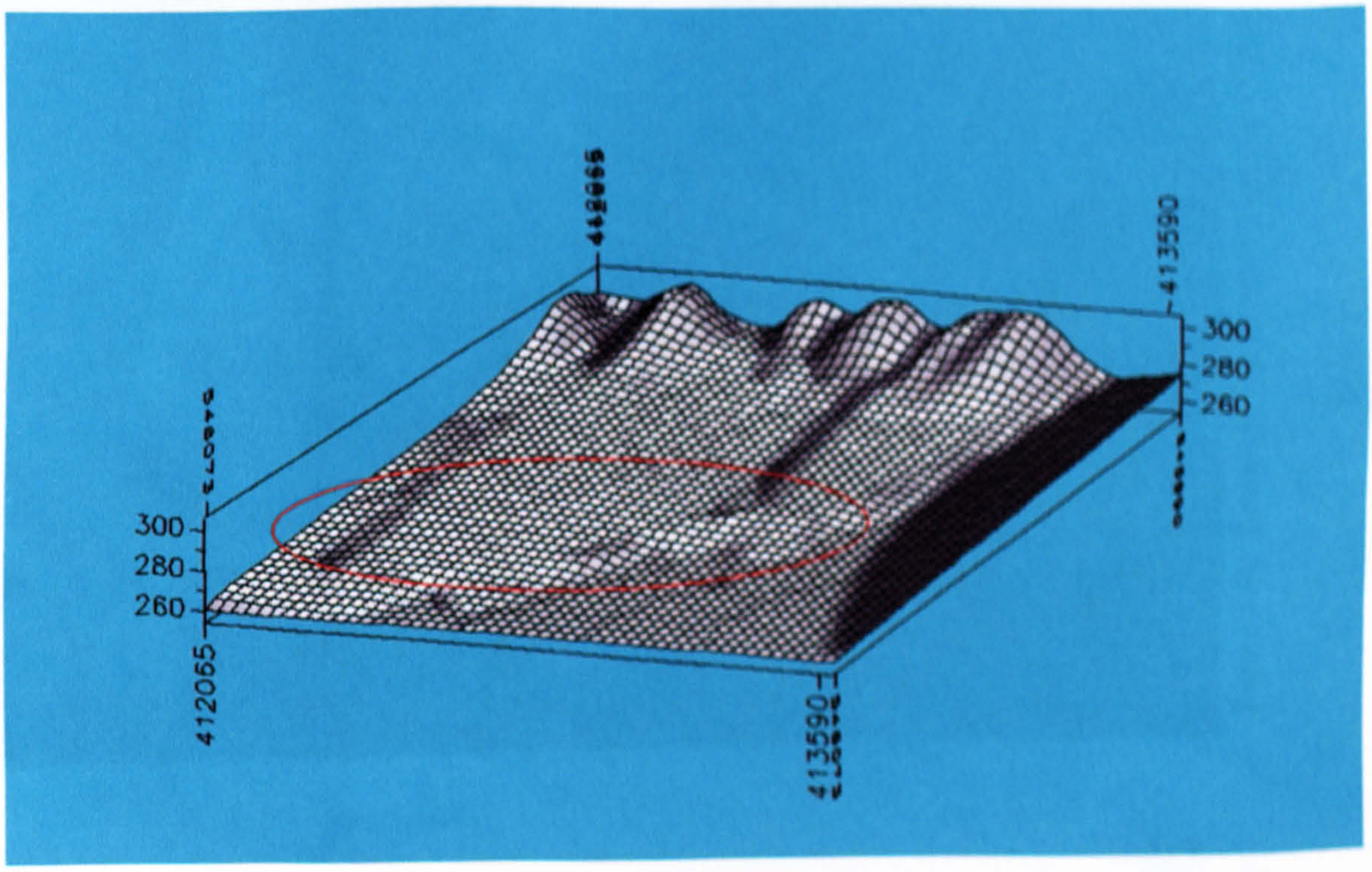


Figure 5.40: Razboieni -*vicus* buildings and roads to the north of the fort (WSH)

Figure 5.41:Razboieni -*vicus* buildings and roads to the north-east of the fort (WSH)

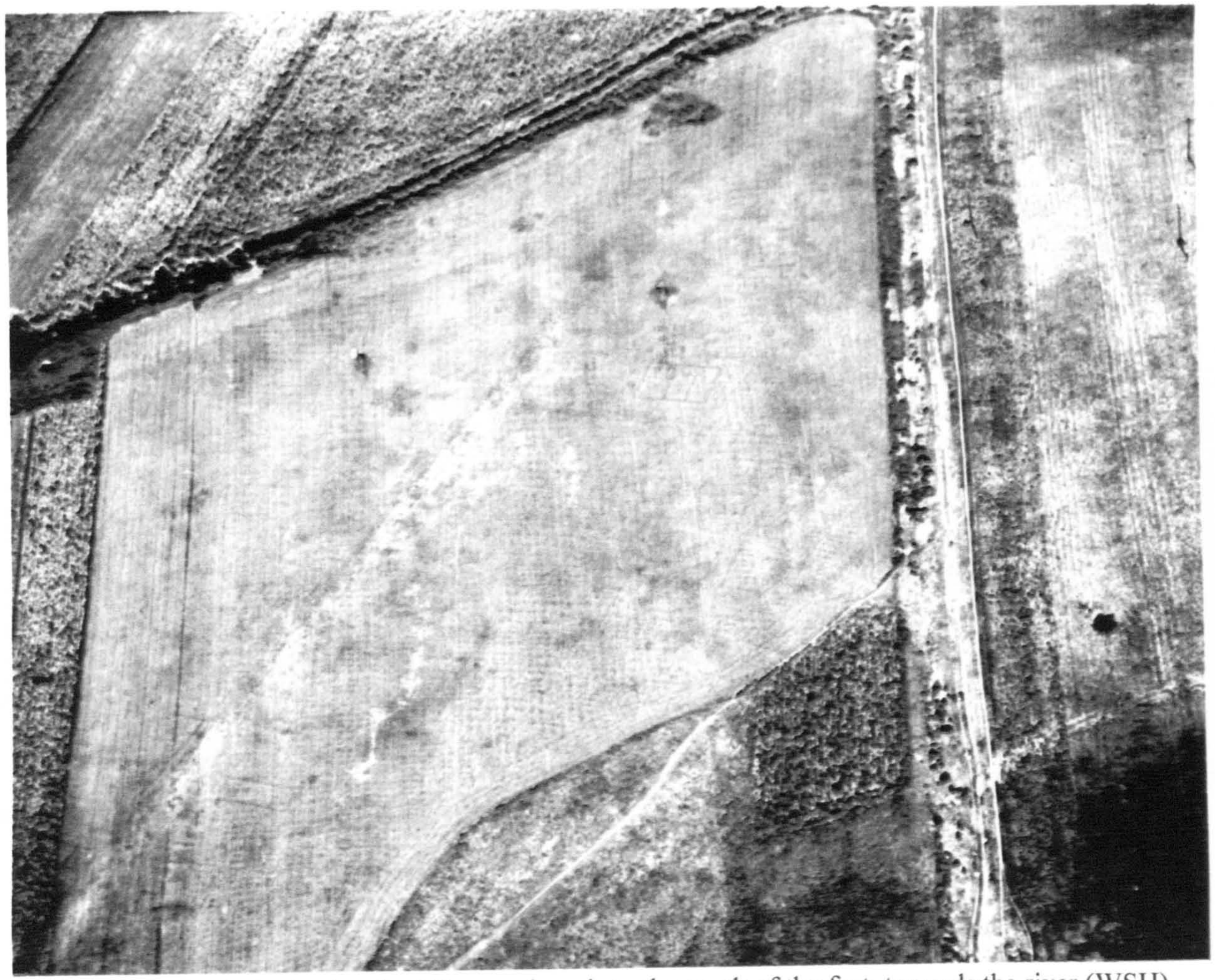
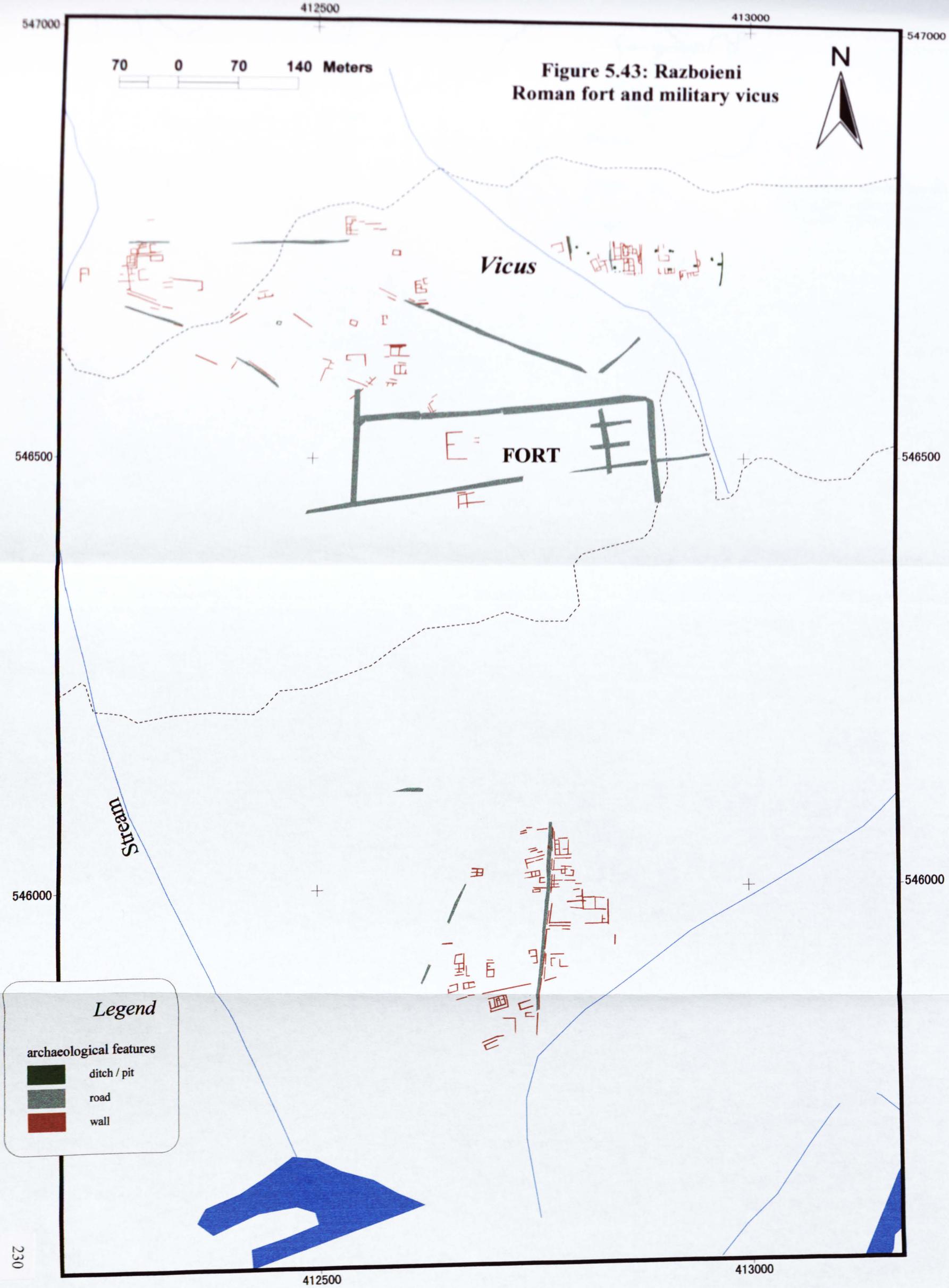


Figure 5.42: Razboieni -*vicus* buildings and roads to the south of the fort, towards the river (WSH)

Figure 5.43: Razboieni
Roman fort and military vicus



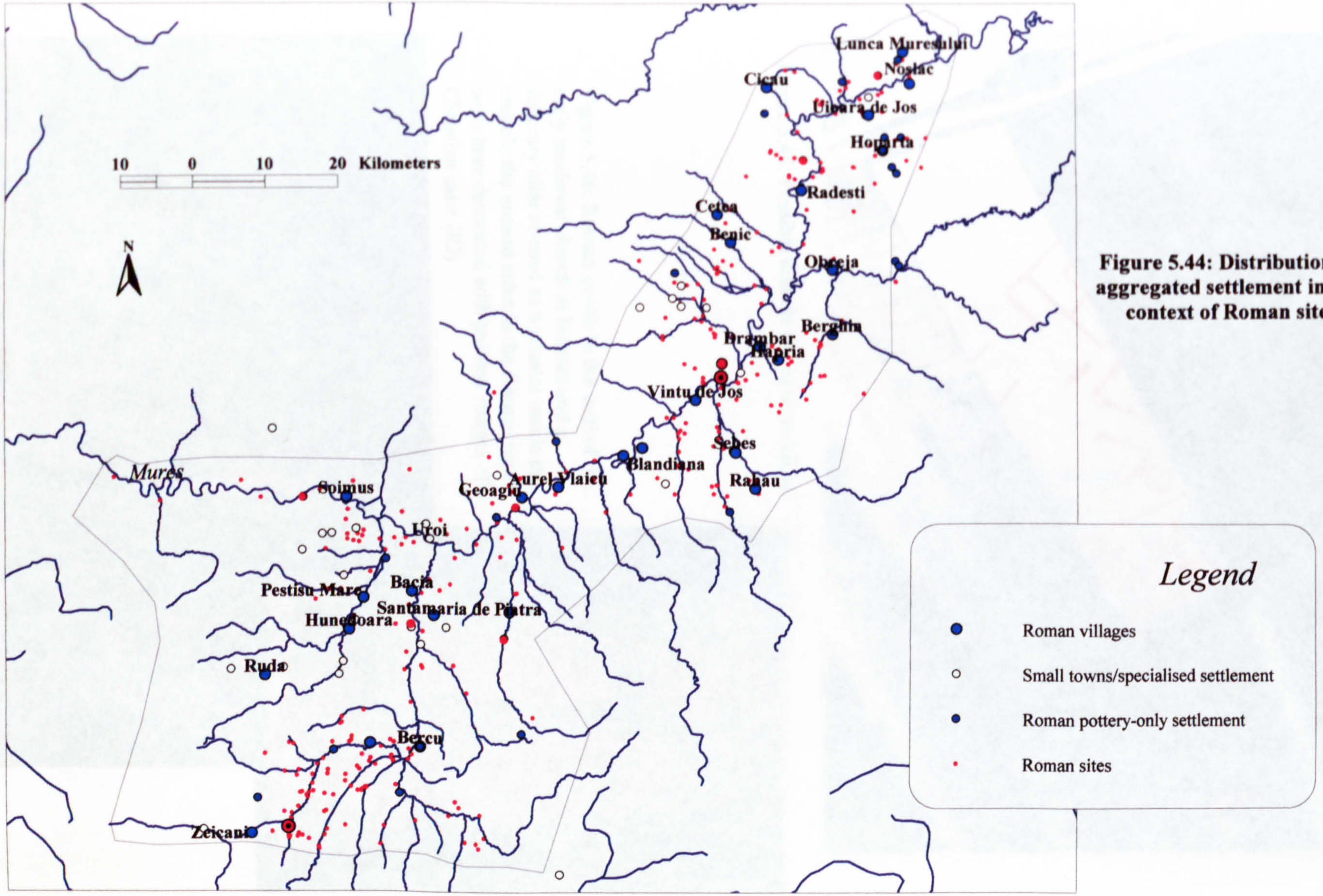


Figure 5.44: Distribution of aggregated settlement in the context of Roman sites

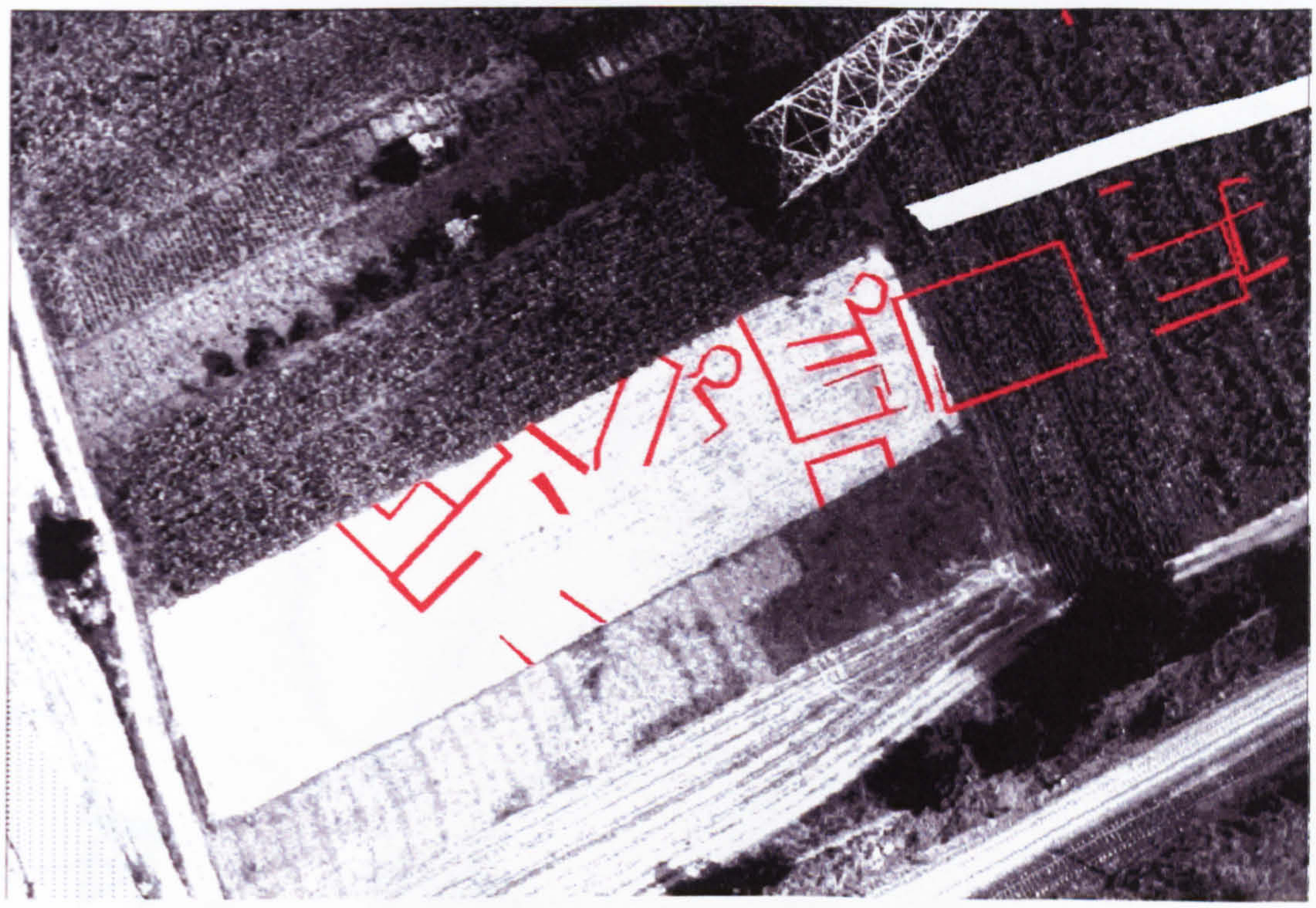


Figure 5.45: Possible kilns in the *vicus* at Micia

Figure 5.46: Roman *spolia* in the wall of the early medieval church at Densus and a funerary altar re-used as a pilaster inside the church; the unused sides in the Roman time were later decorated with painted images of a Christian saint (IO)

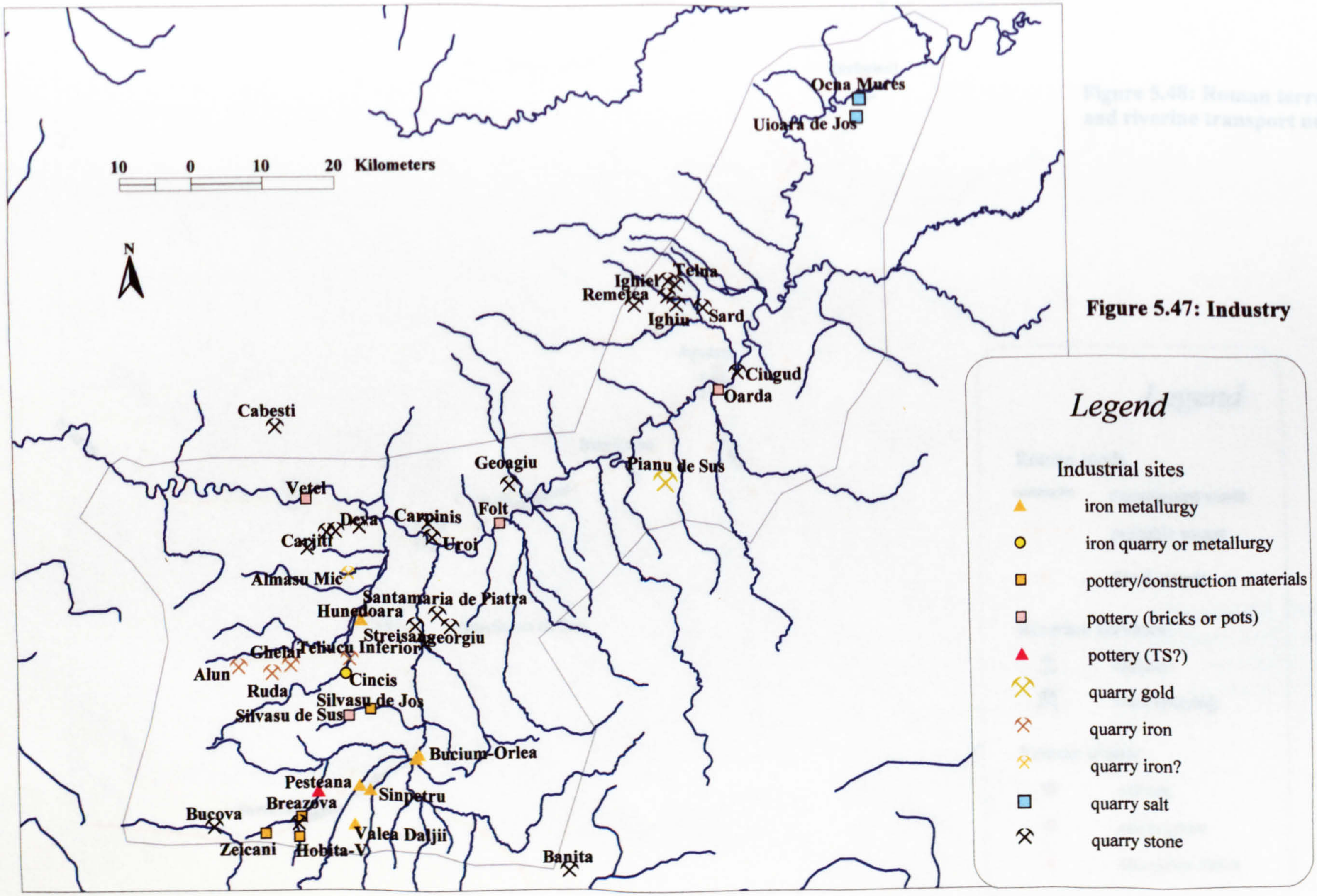


Figure 5.47: Industry

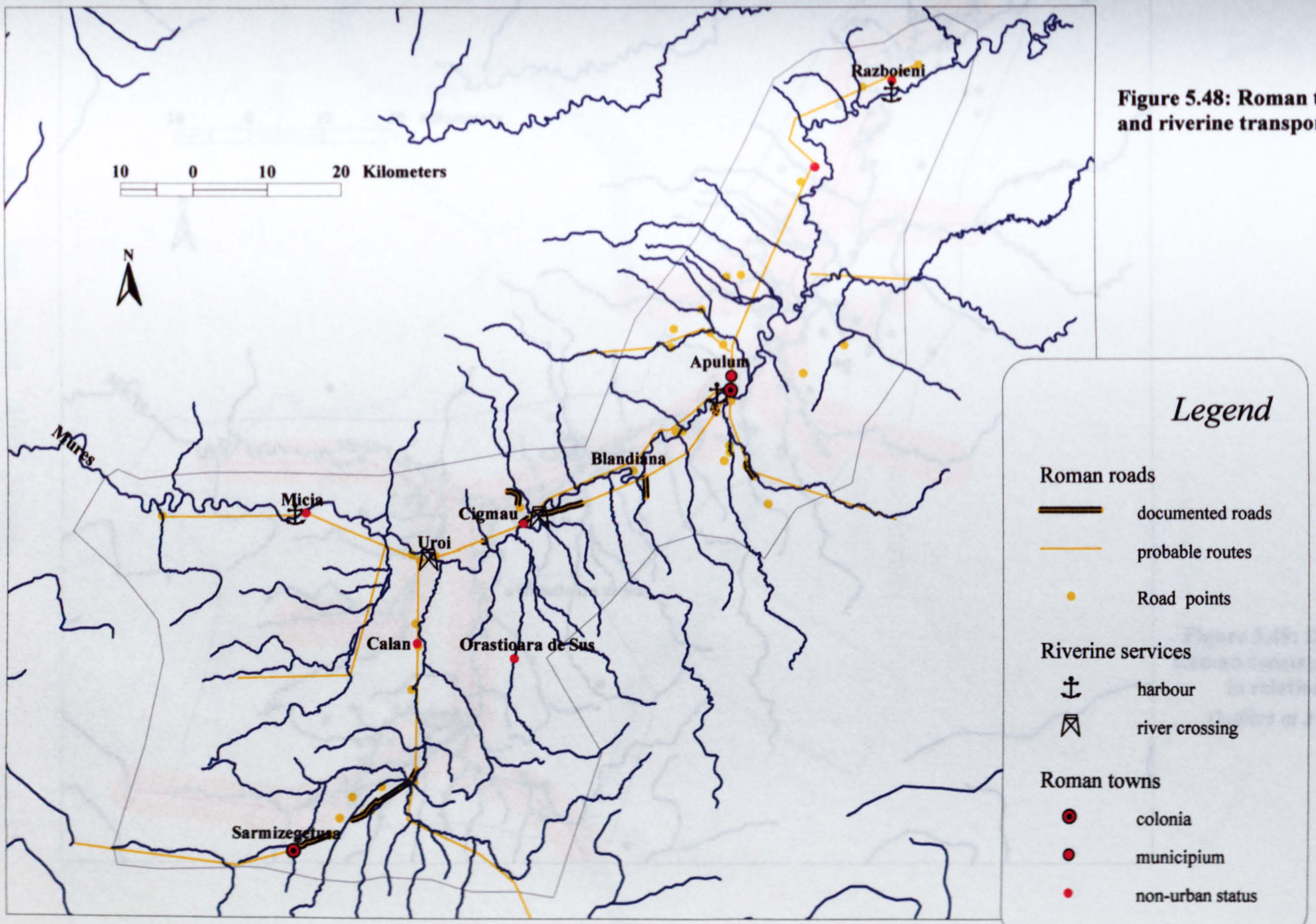


Figure 5.48: Roman terrestrial and riverine transport network

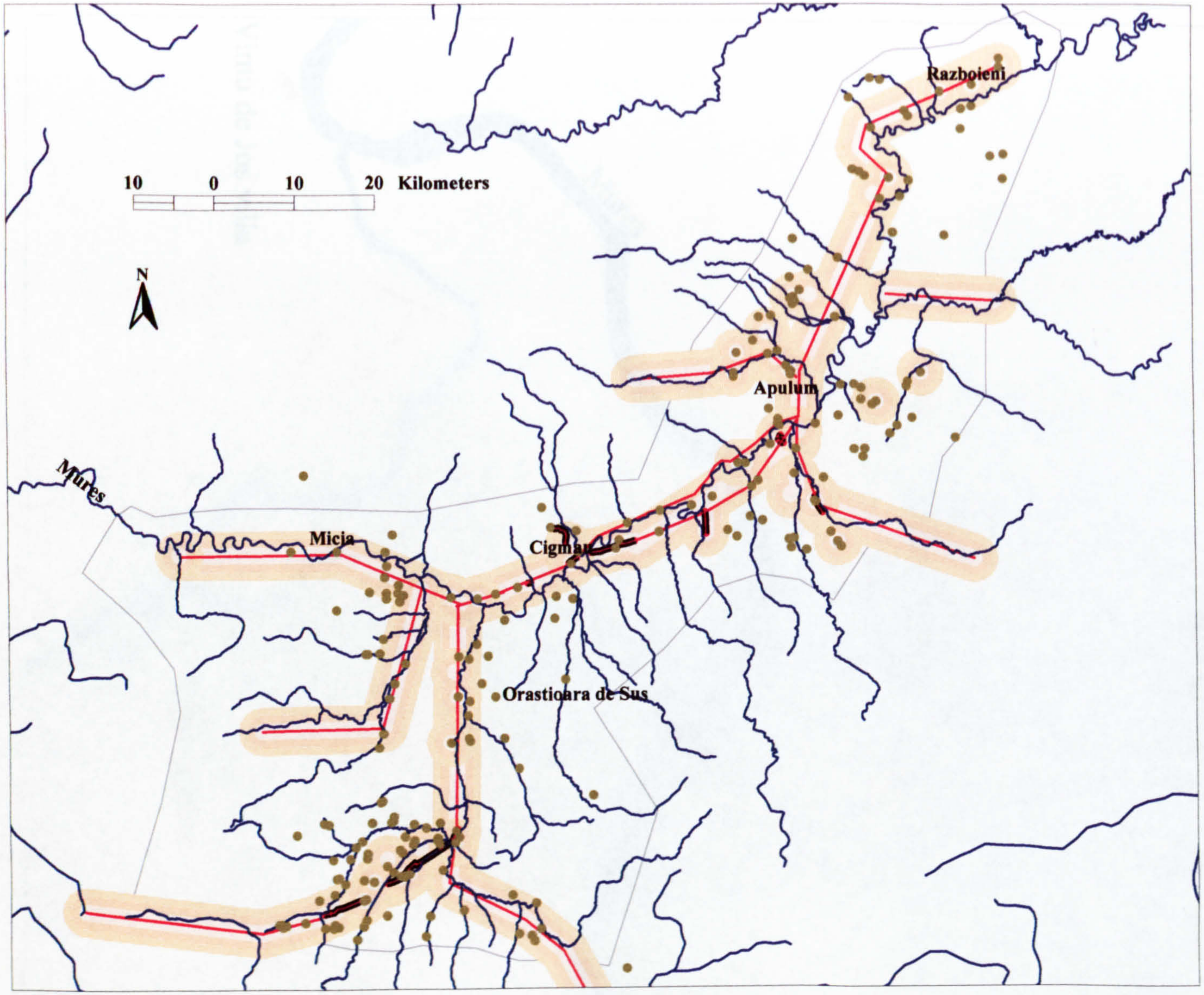


Figure 5.49: Distribution of Roman construction materials in relation to roads
(buffers at 3 kilometres)

Figure 5.50: Roman archaeological landscape at Apulum
(archaeological features mapped from aerial photographs in red)

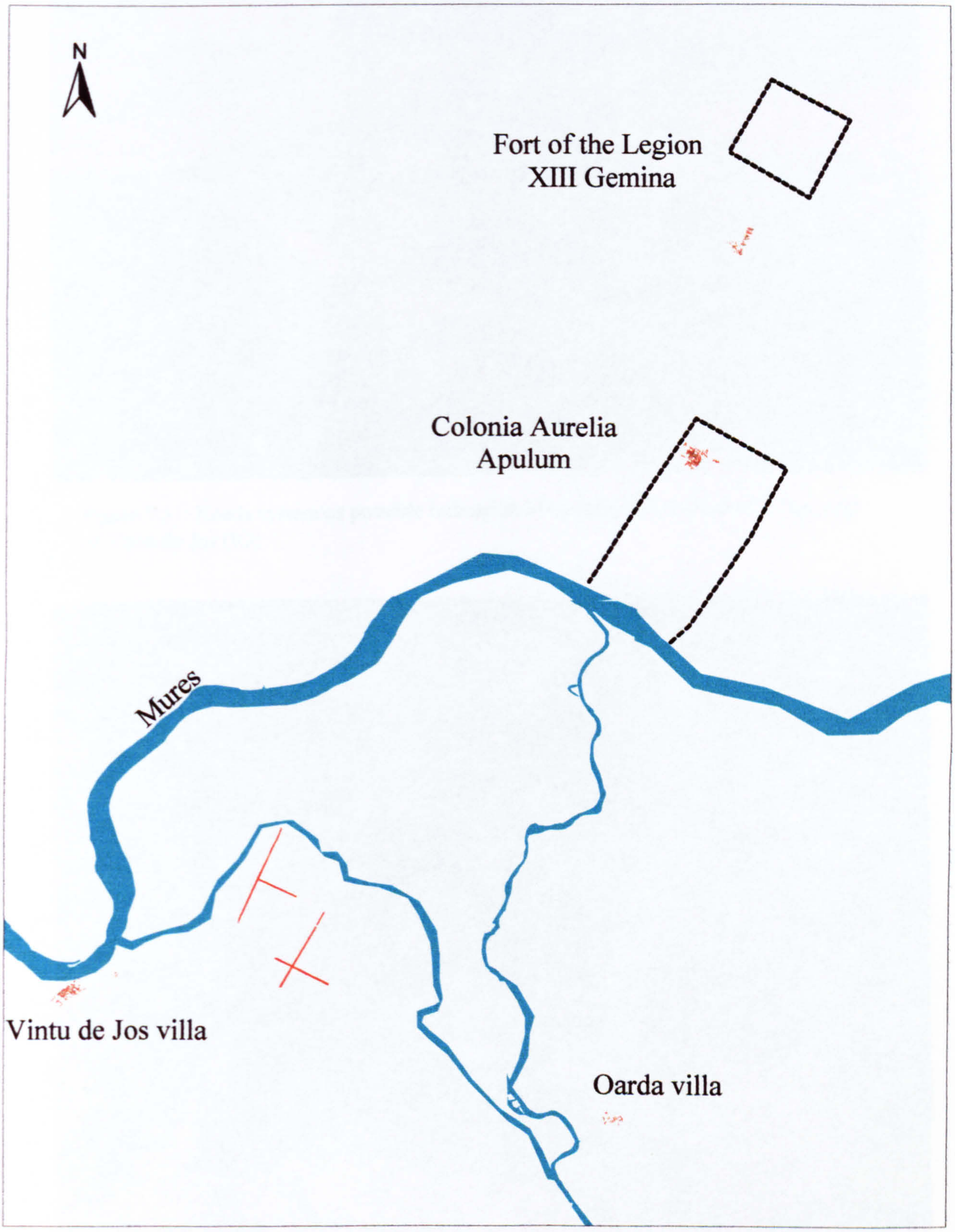


Figure 5.51: Roads system as possible indication of centuriation south of *Apulum*, east of Vintu de Jos (IO)

Figure 5.52: Calan-Bai (*Aquae*) Roman stone pool nearby modern one (WSH)

Figure 5.53: *Germisara* Roman spa and ritual complex near modern pools at Geoagiu-Bai (WSH)

Figure 5.54: Roman sub-urban villa at Sarmizegetusa (WSH)

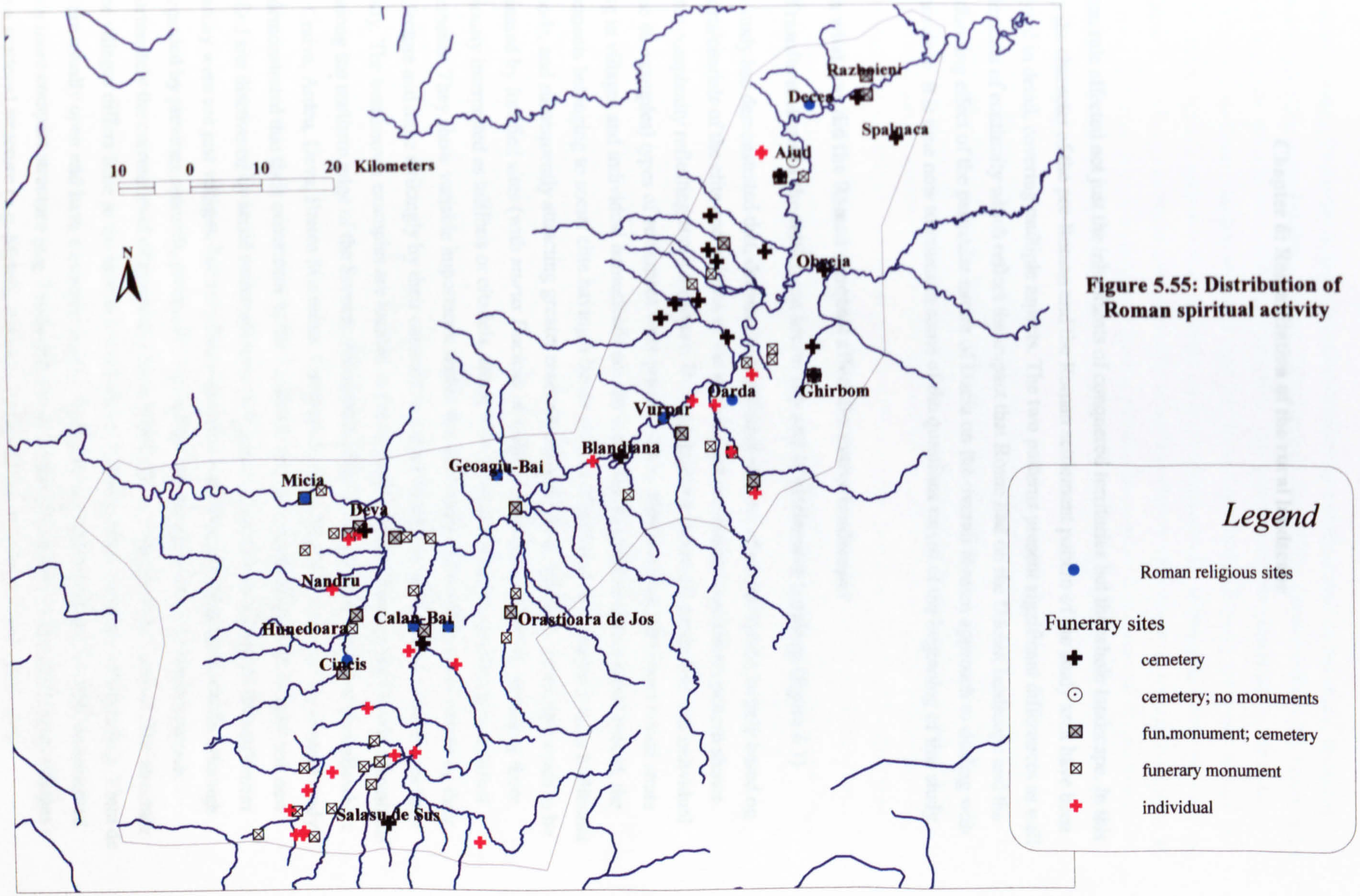


Figure 5.55: Distribution of Roman spiritual activity

Chapter 6: Romanisation of the rural landscape

Roman rule affected not just the inhabitants of conquered territories but the whole landscape. In this study the character of the pre-Roman and the Roman settlement pattern of the study area have been analysed in detail, covering multiple aspects. The two patterns present significant differences as well as elements of continuity which reflect the impact that Rome had on the Dacian landscape and the transforming effect of the particular nature of Dacia on the overall Roman approach to dealing with the province. It is time now to return to some of the questions raised at the beginning of this study.

1. In what way did the Roman conquest affect the native landscape?

1.1 Transformations in the settlement hierarchy and in settlement typology (figure 6.1)

This study has demonstrated that, despite the traditional scheme of interpretation largely based on hillforts/citadels of the elite and villages of the masses, the pre-Roman settlement pattern shows greater complexity reflecting social structure. Both aggregated (some 20 examples) and individual (some 80 examples) types of settlement were present. As is often the case, the lower social strata living in villages and individual homesteads are the least visible in the archaeological record, the settlements belonging to social elite having a better chance of survival and recognition by traditional methods, and subsequently attracting greater research interest. As a result, the landscape tends to be dominated by fortified sites (with *murus Dacicus* or only earthwork enclosures), including those previously interpreted as hillforts or citadels, along with those previously considered as fortified settlements. They show variable importance within the landscape, reflected to some extent by their architecture and more strikingly by their capacity to attract further settlement and amenities in their vicinity. The best known examples are located in the uplands, most of them in the Orastie Mountains and along the northern edge of the Sureanu Mountains (Cucuis, Cugir, Capalna), but also elsewhere (e.g. Craiva, Ardeu, Deva, Bretea Muresana, Campuri-Surduc, Banita). However, the present study has demonstrated that their occurrence in the lowlands can also be possible, with at least one new fortified site discovered by aerial reconnaissance at Cigmau. At the lowest level of the settlement hierarchy were not just villages, but very likely numerous individual homesteads which, although disregarded by previous research, potentially formed the largest part of the settlement pattern. Unfortunately the current level of research makes it difficult to estimate their number. The structure of the villages differs little in the lowlands from those in the uplands. Lowland villages (e.g. Vintu de Jos) are usually open and have a compact layout. In the uplands open villages are also documented with a more compact structure (e.g. Fetele Albe, Fata Cetei), along with, more often, open villages with a scattered structure (e.g. Meleia, Rudele). Although the latter type is not sufficiently

documented within the lowlands to justify consideration as a distinct type in this study, scattered settlement probably extended there too (e.g. Orastioara de Jos –592). Deeper differences between the lowlands and the uplands are visible in architecture. The predominant dwellings of the lowlands consist of sunken-floored houses with pits used for storage or rubbish disposal and ovens around the houses. In the uplands surface timber architecture is predominant and, although in a few cases pits are still present, ancillary structures consist usually of surface-built timber granaries/storage buildings. In both areas, however, there is a preference for the circular house plan. The layout of upland houses is often more elaborate, with several rooms (2, 3) laid out concentrically with gradual access towards the centre of the house.

Apart from the fortified sites and the settlements for the masses, the present study has identified a new intermediate category of sites, whose significance has escaped previous studies. This is represented by the tower-house sites, some of them with traces of open settlement around. These rectangular/square structures built in *murus Dacicus* with upper storeys of lighter materials (brick, and perhaps also timber) are sometimes present within hillfort enclosures, clearly indicating their function as elite houses. They are to be found for the most part, however, orbiting a few hillforts (mainly Costesti -Cetatuie and Blidaru- and Craiva; a few also at Piatra Rosie, *Sarmizegetusa Regia* and Gradistea Muncelului-Varful lui Hulpe). Very little research has been carried out on these sites, but their emergence could be related to a clear definition of a warrior elite stratum in Dacian society, associated directly with political leadership from other elite members.

The most functionally complex settlements were probably places of central interest. Gradistea Muncelului-Dealul Gradistii has already been convincingly demonstrated as the most important site of Dacia prior to Roman conquest and probably correctly identified as *Sarmizegetusa,* the capital of Decebalus. Indeed, the site included a hillfort built in *murus Dacicus* surrounded by an extensive open settlement. But unlike other sites in this category, it had the most extensive religious presence documented so far in Dacia with several monumental sanctuaries built in stone in 2 distinct building programmes, the first using limestone and the later using andesite. The other feature which makes this site unique is its extensive metallurgical production, particularly iron, carried out in several large workshops -one of them in the immediate vicinity of the *area sacra*- making *Sarmizegetusa Regia* arguably the largest iron producer in *Barbaricum* at that time (Iaroslavschi 1997). Other important central places included Costesti, Craiva and Deva.

The Roman conquest produced multiple changes in the existing settlement typology and hierarchy. Firstly, the totality of high-status settlements of the previous period (hillforts and tower-houses) disappears, both in terms of location and as types of settlement. Archaeological evidence from hillforts and other types of settlements, especially from the Orastie Mountains, shows deliberate destruction. This was interpreted as a normal consequence of the wars of conquest, despite the fact that only at *Sarmizegetusa Regia* (with its burned down granaries still containing large quantities of stored grain) or at Meleia is there clear indication that the violent destruction occurred while the settlement was still in use. But the hillforts are unlikely to present a picture other than of destruction

and abandonment after the wars of conquest and, therefore, continuity of occupation there is likely to have been the exception rather than the rule.

The wider landscape experiences the emergence of Roman-type urbanism, a large increase in settlement numbers and settlement density, diversification in the range and function of settlements, and probably also diversification in the organisation and division of the land itself. Within the area under study major towns emerged quickly after the conquest. The first, during the reign of Trajan, was *Sarmizegetusa* the only *colonia deducta* in Dacia. After some time, *Apulum* was granted municipal status by Marcus Aurelius and later it too became a *colonia*. With the exception of the legionary *canabae* at *Apulum*, which received municipal status under Septimius Severus, these remain the only major towns of the area throughout the Roman period. Following the pattern of the other towns of the province, neither was founded on the site of a previous Dacian settlement, despite their Dacian names (Glodariu 1993). The Dacian sites thought to have inspired their names are located 42 kilometres east (*Sarmizegetusa*) and 20 kilometres north (*Apulum*) of their Roman counterparts.

But outside these centres a dense occupation has been traced, with some 266-270 settlements as opposed to only some 140-150 in the period before the Roman conquest, demonstrating a clear increase in density (and probably also in population) with a wide variety of settlement types. Again, both categories of settlement, individual and nucleated were present, and even though for most of them (213) the current level of research cannot give sufficient indication as to their character, it still seems that once again individual settlement forms outnumber the aggregated ones. The settlement hierarchy in each of these categories was confined to only two main groups (an upper and lower level without an intermediary one). However, the types of settlements within each of these levels were sufficiently varied to reflect significant social differences of their occupants. The upper level of the settlement pattern is represented by villas and by small towns. These categories have been defined loosely as including, in the first case, any individual settlements (homesteads) with evidence of Roman influence and, in the second, aggregated settlements with functions more complex than agricultural (military *vici* and specialised aggregated settlements). At the other end of the spectrum were located homesteads and agricultural villages (of both traditional and Roman type).

Among these four broad categories, the least well attested is that of the non-villa homesteads (farms), of which only a few examples have been identified. One of the possible causes of this situation is the methodological bias relating to the identification of this category of settlement in the pre-Roman period, since traces identifiable through traditional methods tend to be very scarce and easily overlooked. But another possibility is that 'romanised farms' were indeed the norm in the landscape. Since the indicator of 'romanisation' is in most cases provided by the presence of Roman building materials (particularly bricks and tiles), it is very likely that many occupants of homesteads found these materials available and affordable and eventually decided to make use of them. Indeed, it has been observed previously in this study that most of the villages which perpetuated native architecture to some extent also showed Roman influence in building technique (with evolution towards surface dwellings) and materials, and therefore such a scheme of evolution could also have applied to farms.

Future research clarifying the chronology and layout of these sites could shed more light on this aspect.

It has been shown in this study that those villas and military *vici* where more detail of their layout, structure and internal features is known seem to have been not dissimilar to contemporary types of sites from neighbouring provinces or even further afield. These sites show a constant development throughout the 2nd century AD with evolution in complexity and pretensions, reflecting not only their social status, but also their economic prosperity. This came to an end without any archeologically identifiable signs of previous decline when the province was abandoned.

The present analysis of the settlement pattern and typology has revealed that, despite all of the significant changes, there were more elements of continuity than previously estimated. Excavated villages of traditional architectural type (e.g. Obreja, Noslac) show that they started at the beginning of the second century AD at the same time as those of the Roman type. This has been used to support theories of the extreme treatment applied by the Romans to native society after the conquest (see chapter 3). But continuity of population is manifested by continuity of occupation in a number of settlements throughout the study area and by survivals from the pre-Roman period in both the typology and architecture of sites. Very few settlements in Dacia have been proved to be continuously occupied from the pre- to the post-conquest period. Within the study area the most famous examples are the settlements at Cetea and Cicau (see above chapter 5). At least in the case of Cetea, it seems that the Romans did not move all the Dacian settlements into the lowlands by force. Sometimes however, settlement movement towards lower altitudes involved only short distances, which may reflect no more than minor adjustments in response to different economic and social circumstances. At Varmaga, for example, Dacian occupation (588) was identified on the top of the hill to the north of the modern village, while occupation of Roman-date (423) was discovered a little distance further down the hill, closer to the modern village. Some 46 sites throughout the area have been documented on the same location in both the La Tene and Roman periods, and future research could prove their continuous occupation more explicitly (figure 6.2). One such example is at Hunedoara, where traces of both Dacian and Roman occupation have been identified on the Sampetru Hill near the medieval castle. This was documented largely by pottery, until limited rescue excavations identified traces of 'romanised' buildings there (in the area of the modern cemetery). In this context, one might have assumed that the Dacian pottery found in the area might have been of Roman date too, but in the recent years excavations nearby revealed the presence of a Dacian cemetery of infants. This was dated immediately before the Roman conquest (see chapter 4) and was perhaps still in use immediately thereafter -as one coin of Trajan associated with one of the burials seems to indicate. In this context, continuity of occupation on the site from the late Dacian to the Roman period becomes evident.

Other aspects of continuity have been detected in architecture, in principle as the persistence of traditional forms of sunken houses and storage pits in several locations where continuity of site occupation was not necessarily applicable (e.g. Obreja). But although previous interpretations related such architecture to 'native villages' of low economic and social importance, it is now clear that these

traditional forms have a much larger distribution; indeed, storage in pits has been detected even in small towns such as Aiud (see above Chapter 5). Furthermore, the current study has been successful in tracing probable pre-Roman architectural survivals even in the type of settlement considered by traditional interpretations as the most 'Roman' in nature: the villas. Whenever site plans have been available, it has been noted that villa houses were oriented on a north-west-south-east alignment, sometimes even if this did not fit with the layout of surrounding features (probable location of gates or even main roads outside the settlement). This directly reflects the attested trend in Dacian houses (see above chapter 4). Also, the analysis of their location has clearly shown a tendency for these sites to occupy dominant positions in the landscape where they can easily overlook the surroundings as well as be seen, again reflecting similar attitudes of the elite identified in the pre-conquest period.

1.2 The choice of settlement location

According to Aston (1997, 93) normally the settlement pattern of any area develops in relation to subsistence values: proximity to resources (e.g. water, arable/pasture land, natural resources, depending on the character of the economy); ease of access (less steep slopes and non-marshy ground); and commodities (services, roads/transport network, etc). However, sometimes the emergence of settlement can be influenced by other reasons related more to ideology than to pragmatism.

The Dacian settlement evidence (figure 6.3) is clearly incomplete, strongly biased by both survival zones and detection methodology (traditional survey, high level of interest in the Orastie Mountains as opposed to other areas). This creates an image whereby settlement was largely restricted to upland areas from where the inhabitants were farming the lowlands for cereals and using the higher altitudes for summer grazing. But such a pattern is clearly not economically viable, at least with respect to cereal production, because the distances involved are far too large to make it practical. Also, any necessary infrastructure (roads, administration and, not least, peace) is lacking.

Despite the fragmentary evidence for settlement location, which clearly impacts on estimations of settlement density, it is clear that there are several areas of denser settlement within the study area. By far the highest density is recorded in the Orastie Mountains, where it is artificially increased by the existing methodological bias on the one hand, and possibly by the fact that most of these sites would have been individual or scattered settlements. A smaller area of very dense occupation is also visible at Deva, where it indicates a settlement which (with the exception of the tower-house 'belt') is similar to the extensive scattered settlement at Costesti. At a different level of density, a more homogenous distribution is attested in the lowlands of the northern half of the study area, where mostly lower-order settlements were perhaps involved in arable cultivation. However, extensive zones in the mid- and lower Strei valley or in the Mures valley were probably scarcely occupied (if at all). The area of Tara Hategului was thought to have been unoccupied in the Iron Age prior to the Roman conquest, but subsequently more extensive survey involving traditional field walking in the 1980s (Popa 1989) identified several settlements including a few sites involved in iron reduction and processing. Still, the pre-Roman Dacian presence in this area remains scarce. This demonstrates

clearly that the impact of Roman colonisation on the native property system in the area was considerably less aggressive than suggested by traditional interpretations.

Before the Roman conquest, the natural landscape had already experienced significant changes in topography and possibly vegetation through human exploitation. The most significant effort in changing natural topography is documented by the construction of hillforts, most of them located on hilltops flattened by soil removal (sometimes involving digging even through native bedrock) and terracing. Extensive terracing was needed also for sanctuaries or domestic buildings associated with the hillforts, or in other upland settlements. The extraction of natural resources (iron ore, perhaps some gold, but particularly stone –limestone and andesite) would also have impacted on the environment. Apart from the effect on local vegetation by terracing and hilltop flattening, a certain level of deforestation is suggested by the significant quantity and typological variety of woodworking tools and the extent of timber architecture.

The current evidence for settlement location and distribution needs to be re-addressed by future survey, which may result in it making a lot more economic sense than at the moment. It is likely that the lowlands were more densely occupied than it is known at present, although it is already clear that in the Dacian period settlements went to significantly higher altitudes than in the Roman occupation. Also it is still to be seen whether or not the 'empty areas' detected by this study will stand up to future research. At the moment, this study reveals that settlement location in the Dacian period seems to have been influenced only in part by the provision of natural resources (e.g. arable land, ore sources) or ease of access and communications, contradicting previous theories. Indeed, only one large central place (Deva) has been located within the immediate vicinity of the Mures, and access to other centres, for various services/functions (e.g. trade, administration, religion) would have been considerably more difficult. Still, most of them tend to be located not too deep in the mountains, overlooking the Mures Valley or those of its main tributaries (Costesti, Cucuis, Cugir, Capalna, Craiva, Ardeu, Bretea Muresana).

Access deeper into the Orastie Mountains and to *Sarmizegetusa Regia* would have been increasingly difficult. It seems that the whole extensive inhabited landscape created at the cost of significant human effort had reasons other than pragmatism for its emergence and development. The only economic reason apparent is related to the provision of iron ore, used extensively at *Sarmizegetusa Regia* and in several other locations around. However, the large religious significance of the site (possibly related to iron metallurgy) could have determined the extensive settlement and effort documented there, and, ultimately, could even have attracted the politico-administrative significance. My opinion is that the large centre at Costesti is the most likely candidate in that area (like Craiva further upstream in the Mures valley) for a politico-administrative centre, and that such functions at *Sarmizegetusa Regia* would have been preceded by its religious (and perhaps metallurgical) significance. The shift of the political sphere towards *Sarmizegetusa Regia* could represent, therefore, a later political development. Such an interpretation seems to be supported by the historical accounts of the political events in the late phase of the Dacian civilisation. The religious reform and support given to royalty by the great priest Dekaineos during the reign of Burebista was followed by the

acquisition of these powers (both political and religious) by the former after the dramatic death of the first king. This acquisition of powers occurred on several occasions under his successors, with religion ensuring authority over all the Dacians despite the loss of political unity after the death of Burebista (see chapter 3). However, this assumption needs to be demonstrated by future clarification of the site's chronology.

By contrast, the Roman settlement pattern (figure 6.3) in the study area reveals itself as largely pragmatic. The great majority of settlements are located in the lowlands (most of them up to some 400-500 metres high) and, compared to the modern land-use, within areas which would have had arable potential. The main trade and communication routes give more structure than ever before to the organisation of the landscape and the emergence of settlement. Topography and the water courses (that of the Mures and its main tributaries) are the major factors in determining the access network throughout the area. This influenced the location of the military bases, which in turn influenced the construction of the road network. Further transport facilities were also needed to connect the extraction sites (or places of religious significance such as the spa at *Germisara*) to the major routes. The communication network seems very extensive, with a major access route heading northwards along the Tara Hategului, Strei corridor and the Mures valley. At least in the sector between Geoagiu and *Apulum*, the road appears to have followed the valley on both sides of the river. But identification of road sectors in several other places outside the main line suggests the presence of an extensive network of secondary roads. The access facilities available attracted major towns and smaller centres, which emerged along their line. Furthermore, these routes seem to have played an important role in the general romanisation of the countryside, particularly visible in the introduction of Roman architecture and building techniques. The proper functioning of communications and transport would have determined the location of ancillary services, such as river crossing points, harbours, and even *stationes* or customs centres (see chapter 5).

Obviously the location of mining and quarrying sites was related primarily to the location of the resource itself. This is clear especially for the exploitation of iron, gold and salt, applies to stone quarrying only with respect to special stone (marble and andesite). The availability of limestone and sandstone was much more widespread and, therefore, the quarries seem to be located near major centres of demand i.e. major and small towns. In most cases they are clearly connected to the transportation network and in the few cases where roads are not documented, they are likely to have existed (e.g. a probable access route for the iron mining district in the Poiana Rusca mountains along the river Cerna towards the Mures).

The location of sites with industrial activity is dictated by various factors: location of resources, or that of the markets for products (e.g. military *vici*). Processing near extraction centres is attested for industries involving stone and iron, but the present analysis determined that this extends beyond the limits of the specialised settlements associated with the quarries and has been detected in villas or homesteads too (e.g. stone working: Deva; iron working: Hunedoara, Sinpetru-2, Bucium-Orlea-2, Valea Daljii; iron extraction: Cincis). Indeed, the iron working at Sinpetru and Bucium-Orlea seems to continue a pre-Roman tradition.

Finally, the location of settlements in this landscape seems to have been influenced by multiple factors. The major towns and the smaller centres are located in the lowlands and on the main communication routes of the province. Also, the smaller centres emerged in those areas which experienced the most difficulty in reaching either *Sarmizegetusa* or *Apulum*. The location of rural settlement is attracted more by the major towns than the smaller centres. Of the 101 settlements in Tara Hategului, 45 are located within 15 kilometres of *Sarmizegetusa* and 32 of them were villas and possible villas. Similarly, of the 93 sites within 15 kilometres *of Apulum*, 34 were villas and possible villas. Apart from some possible equivalents of suburban examples (e.g. *Micia*), villas in particular seem to be almost absent from the hinterland of the smaller centres. In addition to the settlement in their vicinity, the large centres and some of the smaller centres also determined to a great extent the location of quarries providing limestone or sandstone.

As outlined above, the general trend in the Roman period was an increase in settlement in the lowlands, but without being too methodical in eliminating upland settlement. One exception seems, however, to have been in force: despite the organised approach to the exploitation of the natural resources of the area and of the province, so far there are no indications whatsoever of the exploitation of the iron resources available around the former Dacian capital at *Sarmizegetusa Regia*. It is possible that rules of economic pragmatism were not in force in this case and that the phenomenon could be related to a deliberate avoidance of occupation in the area following the Roman conquest. The same attitude cannot be detected, however, in the area around the former Dacian centre at Piatra Craivii, (see figure 6.3), so it seems that the Orastie Mountains is the only area that may have experienced the forced depopulation/settlement movement described by ancient sources and accepted by traditional interpretations.

1.3 The impact of the Roman army on the creation of the rural landscape (figure 6.4)

The presence of the Roman military in Dacia has been generally accepted as massive. The number of forts and camps identified throughout the province is very large (over 100 –see Gudea 1997), but identification of phases of occupation by stratigraphic principles and their more precise dating by analysis of associated ceramics are still in their infancy, so that very few have been precisely dated and overall estimations of the army contingent at any given time are difficult to estimate. According to estimations by Piso (1993, 83) based on epigraphic evidence, some 60 auxiliary troops were present in Dacia (Superior, Inferior and Porolissensis) during the Marcomanic Wars under the exceptional command of Pertinax. Apart from legion *XIII Gemina* from *Apulum*, auxiliary troops were present at within the study area *Micia*, Cigmau, Orastioara de Sus and Razboieni. At least those forts located along the Mures river and the road (*Micia*, Cigmau and Razboieni) all seem to have been occupied throughout the 2nd and the 3rd centuries AD, probably until the Roman retreat in the second half of the 3rd century AD. At *Micia* the fort was garrisoned by *ala I Hispanorum Campagonum, cohors II Flavia Commagennorum*, and the *numerus Maurorum Miciensium*. Other *numeri* were located at Cigmau (*Singulariorum Britannicianorum*) and Orastioara de Sus (*Germinicianorum Exploratorum*) and a second *ala* was stationed at Razboieni (*ala Batavorum miliaria*). In each of

these forts tegular material indicates the certain presence of (mainly) legion *XIII Gemina* (and at Razboieni also of *V Macedonica*).

The Roman army was clearly an important element in the area. Military sites have been generally associated with the emergence of highly romanised settlements as *canabae* and military *vici* which played an important role in the urbanisation of the province (Oprean 2000), with both *canabae* (*Apulum* and *Potaissa*) and as many as 5 (possibly 6) military *vici* receiving municipal status, many of them under Septimius Severus (Ardevan 1998). Many army veterans colonised the province as landowners (legionary veterans) or as the inhabitants of towns, and some of them became involved in local municipal administration. As seen in chapter 5, within the study area military *vici* provided important centres for a large number of activities and services directed at both army and civilians, including industry, trade, transport, and religious activities. The active monetary circulation in these centres is not a surprise and is a clear result of the military presence. Also, there are indications that the *vici* might have been involved to some extent in taxation and local administration in the neighbouring territory. Furthermore, the unit would have provided the legal authority through its *praefectus castrorum*. Through their functions these sites had a huge impact and contributed to the rapid romanisation of the territory.

More than in terms of administration or markets, the Roman army crucially influenced the development of the rural landscape through the construction and maintenance of the communication system. This influenced the location of settlements and ultimately made the whole landscape mechanism work. Therefore, the fairly scarce presence of the military more widely throughout the territory came as a mild surprise. Approximately 20 sites have some military connection, but other than attested forts and their *vici*, in only 9 locations have stamped tiles or bricks from a military workshop been discovered. Most of them belong to legion *XIII Gemina*; in 2 cases, these were found in association with stamps from other troops - *Numerus Singulariorum Britannicianorum* from Cigmau (188) and legion *I Adiutrix* (uncertain -520). In one location (480) a stamp of legion *IV Flavia Felix* was discovered. Military elements were also present at mines and quarries (e.g. Uroi), and some further traces of their activity can be seen in their religious activity, although in only a few cases can religious adoration be explicitly liked to military presence. Altars dedicated to divinities at religious centres such as Germisara were perhaps signs of personal adoration, but the site provides indications of an active support of the centre by the auxiliary troop from Cigmau through altars dedicated by the commanders in a special location on the site (see chapter 5). The only other cult usually linked to the presence of the military is that of *Mithras* (*Sol Invictus*) who appears to be worshipped in 4 locations outside known garrisons (2 *mithraea*: Vurpar, Decea; and 2 dedications: Lopadea Noua and Sard).

2. Was there a state-directed settlement policy or did the changes result from multiple small-scale individual strategies?

State-directed policy was largely channelled towards urbanisation and the granting of status and tax exemptions. In Dacia this is manifested much like in other provinces and reflected the approaches to

provincial administration and romanisation by the emperors throughout the Danubian area and, indeed, the Empire. Within Western Transylvania the key moments of such political involvement came under Trajan (*colonia Sarmizegetusa*), Marcus Aurelius (*municipium Apulense*) and Septimius Severus (*colonia Apulense*; a new *municipium Apulense* from the *canabae* of Legion *XII Gemina*; and *ius Italicum* for the two *coloniae*, *Sarmizegetusa* and *Apulum* –see Ardevan 1988, 111-119). Apart from indicating the largest nuclei of romanisation of the province, their emergence and status explains the concentration of settlement around both *Sarmizegetusa* and *Apulum*.

However, the context of these political decisions is significantly different. Trajan's approach to romanisation was traditional, centred on the establishment of *coloniae deductae* (e.g. Sarmizegetusa in Dacia, Poetovio in Pannonia, Ratiaria in Moesia Superior) and not on raising the status of existing communities, which was the line adopted by his successor (Dise 1990, 60-65). The foundation of the *colonia Sarmizegetusa* was as much a political statement as a result of the traditionalist views of Trajan regarding conquest, the rewarding of veterans and finding a solution to the deep cash crisis of the monarchy through economic exploitation of provincial natural resources. Indeed, these features of his policy have been noted elsewhere too (colonial settlements at *Poetovio* in Pannonia and *Ratiaria* in Moesia Superior and organisation of mining in Moesia Superior –see Dise 1991, 60-65) and cannot be interpreted as designed specifically for Dacia. The fact that in Dacia this policy was most extensive is explained fully by the opportunity of the momentum immediately following the wars of conquest.

As indicated by the landscape analysis, the reasons for location of the town at *Sarmizegetusa* also seem to be other than purely economic. As a settlement of veterans, one would expect the *colonia deducta* of veterans to be placed in the middle of the most fertile agricultural land available, but it is hardly so. Firstly it is located in Tara Hategului which is hardly comparable with the Mures Valley in terms of its arable potential; nor is it placed centrally but at the western edge of the plain, where issues of communication and access seem more relevant than agriculture. From that position it offered uneven coverage for the surrounding area, as only 44 sites out of 101 in Tara Hategului are located within 15 kilometres of the town. That this was economically unviable was proven by the later medieval and modern settlement pattern, which firmly established the local centre at Hateg to the east. Moreover, if its territory was indeed originally as large as seems to have been the case, extending into both the Mures valley and Banat, that explains the need for further centres to emerge.

The first town at *Apulum* (Alba Iulia-Partos) is an example of such a centre. Its emergence was due to the proximity of the legionary base and centre of provincial government (the governor's palace), which would have undoubtedly attracted civilian presence. But its location was extremely favourable in an economic sense, positioned as it was in the middle of the most fertile sector of the Mures valley, near the gold mining area and in a crucial location for both the riverine and terrestrial communication networks. In this case, however, we see a gradual evolution towards urbanisation. The town emerged after the establishment of the legionary fortress, as indicated by its location outside the 2 *leuga* buffer zone of the garrison, when the prosperous non-urban settlement which has developed around the local harbour was granted recognition as a town sometime during the reign of Marcus Aurelius. In the case

of *Apulum*, therefore, political influence on the evolution of the settlement pattern could be considered more limited. Much stronger and more explicit political intervention is visible though when Septimius Severus decided to reward his loyal supporters in the civil wars of AD 193-196, among them the Dacian army and its leaders, and granted *municipium* status to the legionary *canabae* at *Apulum* (as well as at *Potaissa*), raising the status of the existing town there to *colonia* and granting the *ius Italicum* to both *Sarmizegetusa* and *Apulum* (Ardevan 1998, 115-119).

Apart from the economic activities in relation to commerce and transport, it is possible that the original community at *Apulum* also had some involvement in agriculture in the immediate vicinity. This could be indicated by the fact that, unlike *Sarmizegetusa*, *Apulum* does not seem to have had villas any closer than 2.4-3 kilometres away (see chapter 5), so that the arable land up to that distance could have been cultivated from within the settlement. In contrast, the emergence of villas at *Sarmizegetusa* at distances as little as 1.2-1.3 kilometres away (without taking into account examples *extra muros*, which can be interpreted as sub-urban villas) could be interpreted as yet another indication of a community with an elitist lifestyle and pretensions from its very beginnings.

The political involvement in the emergence and evolution of Roman settlement in the study area is less visible in relation to centres with non-urban status. The emergence of military *vici* can be considered as being influenced more by strategic than political reasons (linked to the location of forts) and the other possible centres (Calan, Aiud-*Brucla*, possibly Uroi-*Petris* and Blandiana) seem to have sufficient justification in the need for a local centre in that region (see above and chapter 5).

In many areas around the Mediterranean the most visible effects of deliberate policy impacting on the landscape at one particular moment in time are provided by *centuriatio*. As shown in the previous chapter, this process is not yet sufficiently documented anywhere in Dacia. The circumstances of town foundation, along with the possible analogy with *Poetovio* in Pannonia and the frequent reference to Roman roads outside the line of the main road might indicate that such a system had been in place. So far the only possible traces of roads forming a grid have been found to the south of *Apulum*, but are not extensive enough to support the identification of an extensive system. Future studies might shed more light on this issue.

The overall picture generated by the analysis of the settlement pattern in the study area only partly supports the view that Dacia experienced its massive influx of population from outside its cultural boundaries as result of a rapid, extensive and deliberate policy instigated and actively supported by the state. It can be considered, therefore, that political factors impacted on the settlement pattern and distribution only to a limited extent, and that this was largely restricted to the reign of Trajan. His measures were focused particularly on urbanisation and the colonial community of *Sarmizegetusa* made an impact as an organised group on the native landscape visible mainly in the Tara Hategului. Trajan's original colonists were probably veterans from the legions who received properties in that region (see chapter 3). The establishment of forts after the conquest influenced the emergence of further civilian groups through the founding of military *vici*. But it is probably the case that this deliberate policy had echoes in a larger-scale individual migration into Dacia, as well as into its neighbouring provinces (the Pannonias and the Moesias - Dise 1991 62-3). Such individual

colonisation was supported by Hadrian who, by granting Roman citizenship, contributed to an increase in the number of citizens in the area. The presence of Aelii in a significantly larger number than Ulpii is very visible particularly at *Apulum* (Piso 1993b, 330 and 332), with a total of 38 Ulpii, and 117 Aelii (26 and 64 civilians respectively) attested epigraphically. At *Sarmizegetusa* there is a more even composition, with 34 Ulpii and 38 Aelii. This provides further indications of the different evolutionary patterns of the two centres. However, it should be noted that it was only after half a century that a second chartered town (*Apulum*) emerged. Marcus Aurelius' involvement at *Apulum* is rather limited. It seems likely that the settlement there and its satellites had already emerged and prospered, and by granting municipal status he merely acknowledged it officially. Septimius Severus' more extensive measures (new *municipium* and *ius Italicum* for the *colonia*) could have effected in a stronger encouragement of satellite settlement in the territory outside. But it is likely that the main features of the settlement pattern would already have been established by that date, hence the effects of this political act were more matters of detail, than of substance.

3. Did the conquest result in any perceptible resistance phenomena amongst the natives?

According to G. Woolf, "Roman culture is the product of a tension between Romanization and resistance to it" (1998, 19). In recent decades special lines of research on resistance to romanisation and its varied forms of expression or spatial extent have been developed. The phenomenon was particularly related to the north-African territories of Rome, notably Tripolitania (e.g. Bénabou 1976; Mattingly 1995; Grahame 1998), from where the discussion was enlarged to include other areas of the Roman West (e.g. Hingley 1997). Wherever identified, resistance has very rarely taken the form of military action (rebellion), but has usually involved rather more subtle means of rejection or re-interpretation of Roman culture, whether in its ideological or material expression, at a collective or individual level.

The orthodox view of the way the Romans established their rule in Dacia and treated the native populations (the natives were forced to move from the top of the mountains and settle in the lowlands; the Romans took the fertile lands for their own properties and forced the natives to move away or work on their properties as cheap labour) suggests a considerably firm-handed or, indeed, violent treatment towards the natives. If true, the resulting attitude of the Dacians towards their conquerors is likely to have been characterised by resistance to acculturation, rather than receptiveness, and would contradict the widely held belief that close, peaceful and friendly relationships were established between all the inhabitants of the new province as the basis of a rapid and durable process of romanisation.

Can the effect of the Roman occupation and colonisation or the treatment applied to the natives be characterised as aggressive? There is no doubt that the Romans acted aggressively in the process of pacifying and securing the territory (possibly to a greater extent than was needed in conquering other provinces). The present study has offered the opportunity to analyse the traditional interpretation in more detail and see whether the current evidence supports the generalisations concerning mass movement of population and ownership change, or whether more nuanced interpretations should be

accepted. The general focus of Roman settlement location was, indeed, the lowlands. But the focus of pre-Roman settlement location in the uplands was probably only an *apparent* trend (see above and chapter 4), which might well be overturned by further research in the lowlands. Whether this change came about through deliberate restriction is again arguable. As shown above, the only area in the uplands which seems to have experienced dramatic change from the pre-conquest to the post-conquest period is the Orastie Mountains area, which seems to correspond with the literary and artistic depiction of settlement destruction and forced population movement. Indeed, with a very few exceptions, which have been insufficiently investigated so far, in the Roman period the Orastie Mountains seem to have been completely unoccupied, even avoided, both in terms of settlement and the exploitation of resources. This can easily be explained given the strong opposition encountered there during the wars, and the necessity of securing the area to eliminate any further attempts at resistance by the natives, but it is unlikely that the same treatment was extended to the whole study area.

Also of relevance is the way the property system became established after the conquest. We know nothing about the property system in Dacia before the Roman conquest. On the one hand, the predominant absence of enclosures and field systems could suggest that there was less pressure to define boundaries and individual properties. But on the other, the preference for individual settlement forms (for even in the more aggregated communities a scattered structure is prevalent) is a clear indication that the ownership system was characterised by some form of individuality. A certain level of state control is also possible: a royal monopoly could have applied to gold mining activities, for example. In the Roman period private ownership was undoubtedly associated with villa estates, though its extent would have been reduced by the presence of military zones, imperial domains, pastures (*conductores pascui et salinarum* are epigraphically attested) or unused municipal land (*subseciva, loca relicta*). For the moment the only indication of the possible impact of Roman occupation on land holding is the actual location of settlements within the territory. Extensive areas of arable land in Tara Hategului and the mid- and lower Strei valley closest to *colonia Sarmizegetusa* -the first (and strongest) centre of private property in Dacia- show only scarce traces of pre-Roman settlement. If this situation is maintained by future systematic research, it will indicate that the distribution of arable land to the citizens of Sarmizegetusa might have had less impact on the previous ownership system than has previously been suggested. This suggestion is further supported by the potential elements of pre-Roman continuity detected in the survival of sites and industries. This demonstrates that the violence in the post-conquest treatment of the natives potentially affecting their individual property and economic resources should be regarded as limited in its extent and not necessarily generalised.

Defining ethnicity on the basis of material culture is usually not straightforward, and it is no less difficult to differentiate between cultural acceptance and change or resistance. The natives for a long time identified their presence through those elements which imply resistance, whether expressed in their names, their religious beliefs and funerary customs, by the houses they lived in or by the objects they possessed. Because the native elements in Roman Dacia appear rarely in an epigraphic context,

modern interpreters have taken this to support theories of extermination and the physical absence of the natives. The archaeological evidence considered in this study provides no clear traces of Dacian resistance to occupation and romanisation (as clear and deliberate action to reject the assimilation of Roman material culture). There is a persistence of certain elements of native material culture, particularly pottery, in varied archaeological contexts. The tall 'jar'-shaped cooking pot is still produced reflecting some pre-Roman culinary habits still in force in Daco-Roman contexts and the ubiquitous 'Dacian mug' becomes present even in Roman forts (Tentea and Marcu 1997) reflecting the adoption of pre-Roman customs (perhaps smoke-inhaling) by individuals in the Roman army. It is difficult to decide whether the continuous use of native traditions in pottery forms or in architecture (e.g. the use until later of traditional village architecture - see above) should be interpreted as evidence for different cultural response to the adoption of Roman artefacts and fashions, or simply as reflecting differential economic development. Given the fact that both pottery and building techniques show increasing levels of Roman influence, my inclination would be to consider them for the moment as more likely to represent temporary cultural reminiscences rather than deliberate rejections of Roman culture. Other categories of evidence (e.g. epigraphy - the virtual absence of epigraphic records might be explained by a lack of resistance *in* onomastic habit) also lack manifestations of resistance. The possibility that pre-Roman tradition might have influenced the way Dacian villa houses might have been lived in (see discussion in chapter 5), until confirmed by future research, remains a supposition; nevertheless, if this were to be confirmed, it could support a serious argument in favour of certain levels of personal resistance in the upper echelons of provincial society.

4. How did the process of romanisation develop in Dacia?

The context of the creation of any of the Roman provinces was the extension of the Roman domination over its neighbours outside its borders. Simply by their physical presence and by dictating the rules of the game in newly acquired territories, the incomers should be considered the initiators of the process of change which we categorise as romanisation. To what extent they themselves were Roman is debatable, since they are often inhabitants of neighbouring areas already under Roman rule, and at various stages of romanisation, rather than coming from Rome or even Italy. But the success of romanisation depended on the level of acceptance of these new rules by native society. 'Roman' action and native response determined the particularities of each case of provincial romanisation and they were both the product of a particular set of historical circumstances. It is crucial, therefore, to place each case of romanisation and its participants in their particular evolutionary and chronological context.

Dacia faced the disappearance of the 'Orastie Mountains civilisation': the settlements cease to be occupied or were destroyed and the Romans do not extract the iron resources. This pattern fits the account in the literary sources. The sources also say that the population was moved into the lowlands. But the very particular type of architecture seen in the Orastie Mountains cannot be traced in any of the identified native-type settlements of Roman date. On the contrary, these look similar

architecturally to the pre-conquest lowland villages (with sunken houses and storage pits, e.g. Vintu de Jos, Lancram).

The archaeological evidence for the period following the Roman conquest depicts a society of colonists and natives, which varied hierarchically and ethnically, involved in a sustained process of acculturation. Evolution in the settlement pattern indicates that the settlers preferred to live in the lowlands as opposed to the uplands; otherwise, settlement typology was more affected by change than the settlement hierarchy. Significant evolution in social composition and attitudes can be detected. In striking contrast with the pre-Roman landscape, funerary and religious sites are a frequent occurrence in association with settlements and reflect a variety of customs, beliefs and economic wealth.

The nature of change under Roman rule in Dacia as reflected in material culture is very similar to that experienced by other Roman provinces. However, in Dacia there are particular circumstances which have led to extreme interpretations of the processes of colonisation and romanisation. So far, no equivalent of Fishbourne has been found. This Roman palace built for a British native prince has long been a symbol of the deliberate Roman policy of admitting - even attracting - the leaders of conquered societies into a unified ruling elite of the Empire through political and cultural assimilation formalised by Roman citizenship (Woolf 1998, 18). Moreover, through generating emulation among neighbouring native sites of similar status, Fishbourne is a symbol of the importance of such a social attitude in the creation of the imperial culture. The lack of a Dacian equivalent suggests at first sight that the native elite was not involved in provincial administration (which might be taken to explain the absence of a *civitas* system), was not encouraged to take its place in the Imperial ruling class and, therefore, reflects a very different attitude on the part of the Romans towards the conquest and organisation of Dacia as compared to Britain or Gaul, for example. Modern interpreters have gone from explaining it either in a brutal colonialist way (that Romans coming as a ruling class in its own right and exploiting the natives, who were kept as servants) to, more recently, suggesting the physical disappearance of the elite (e.g. Diaconescu 2004).

The major difference between Dacia and the Celtic world, for example, lies in its politico-administrative status at the moment of its conquest: it was a unified state, under the rule of one king and not a regional tribal structure which could be easily converted to the Roman *civitas* system of administration. Since the king was dead by the end of the wars of conquest, there was no need to build a Roman palace for him. The Dacian elite itself was more 'specialised' than elsewhere; by the end of the Dacian state, a division between warrior and economic elite was in operation. It is very possible that a part of the social elite would have followed the king's example and taken their own lives; but, even if the warrior elite had disappeared, the economic elite would have been a valuable asset for the new administration. So far they have not been identified epigraphically. Even if the adoption of epigraphic practice is a personal decision, it is still one of the markers of romanisation. Nevertheless, the clear indications that native lifestyles and influences were present also in the upper echelons of the settlement hierarchy leave this possibility open and it should be investigated further. Trajan was not Agricola and had his own administrative and political philosophy. Indeed, the Roman

approach to conquest and administration at a collective level would have evolved to some extent by the beginning of the 2nd century AD, and also the political context of the Empire was different when Dacia was conquered. Whether or not this justifies the rarity of Dacians recorded on inscriptions remains to be seen. Similarly unexplainable is the fact that no Dacian god creeps into the Roman pantheon. Moreover, the main Dacian sacred site was destroyed during the wars and the place was doomed. But places of religious significance like *Germisara*, where the pre-Roman use of the site is combined in the post-conquest period with particular nuances in cult and worshipping activities (including the epigraphic evidence of a Decebalus Luci –see above chapter 5), show that some elements of the Dacian supernatural had survived, despite the Roman names applied to local divinities. Nevertheless, the level of political encouragement and the apparent lack of resistance are the likely explanations for the fact that Dacia was more rapidly integrated in comparison to other provinces, for it had already achieved full development at the moment of its abandonment.

Hillfort / fortified site	**Hillfort with associated settlement**
Tower house	**Tower house with associated settlement**
Individual homestead	**Village** •compact, unenclosed •scattered, unenclosed
Individual settlement	Nucleated settlement
Villa	**'Small town'** •military vici •specialised settlements
Individual homestead	**Village** •traditional type •Roman type

Figure 6.1: Comparative diagram showing the settlement type and hierarchy in the late Iron Age and the Roman periods.

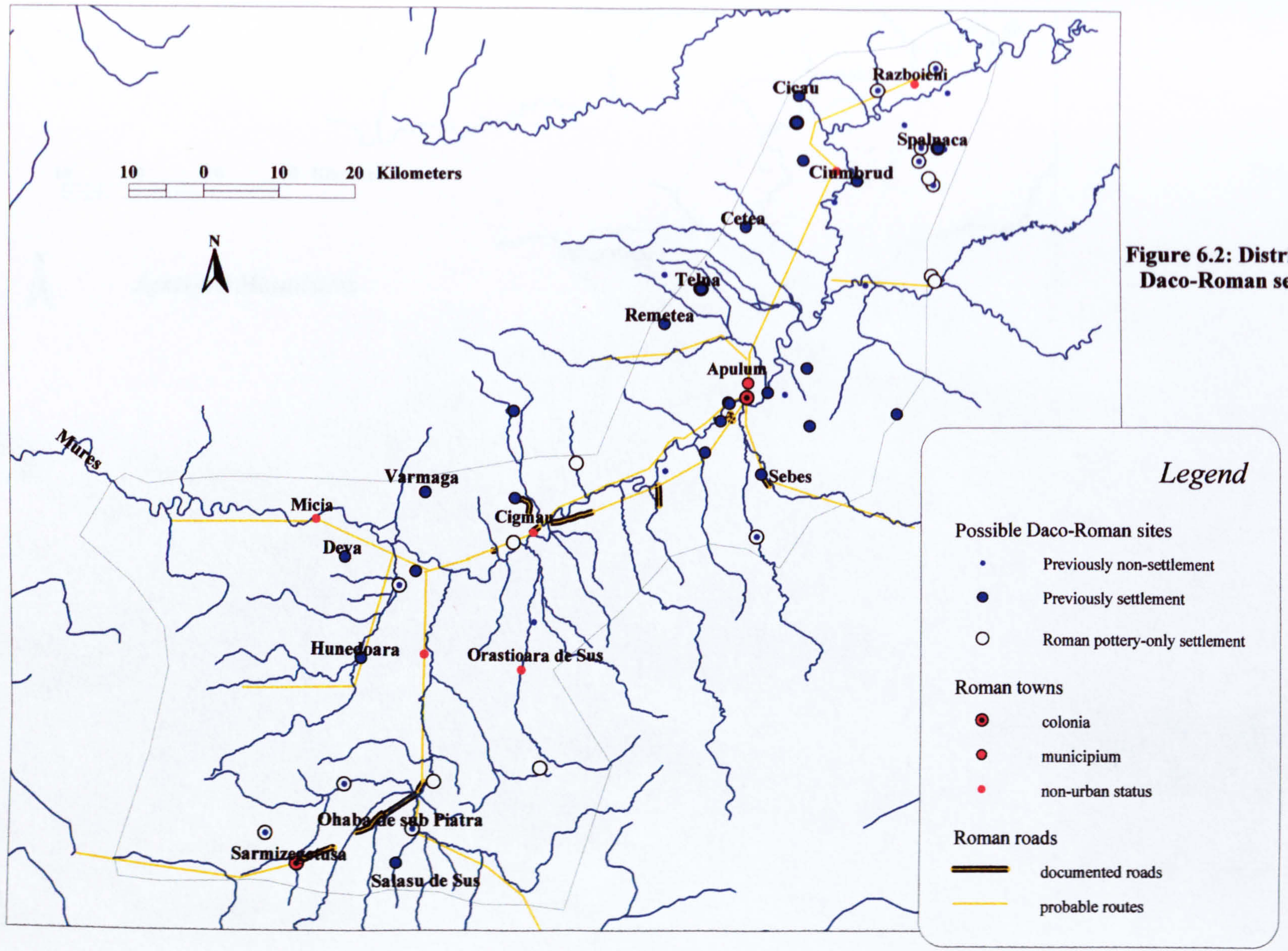


Figure 6.2: Distribution of Daco-Roman settlement

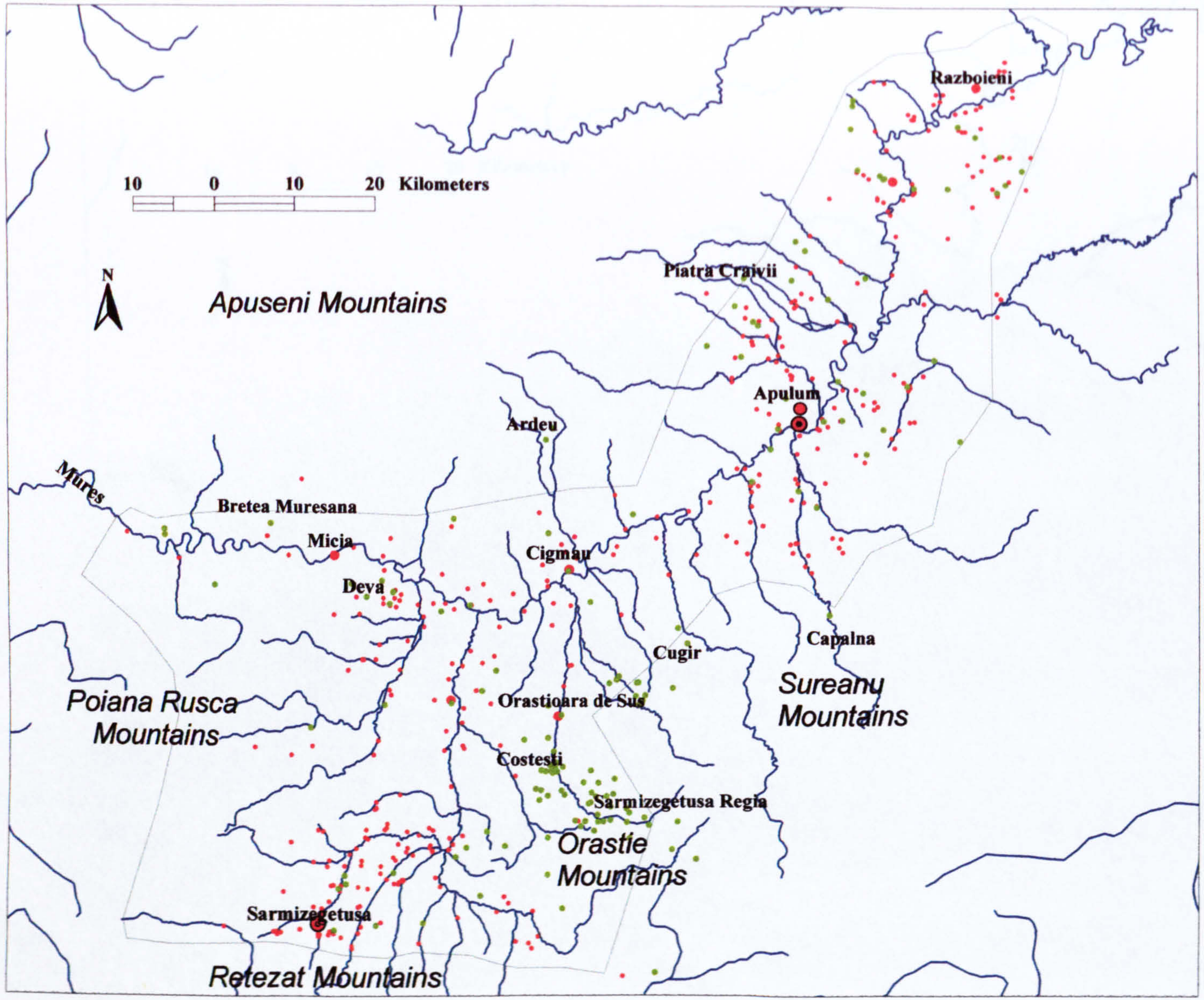


Figure 6.3: Comparative distribution of Dacian and Roman settlements in the study area

(Roman sites in red; Dacian sites in green)

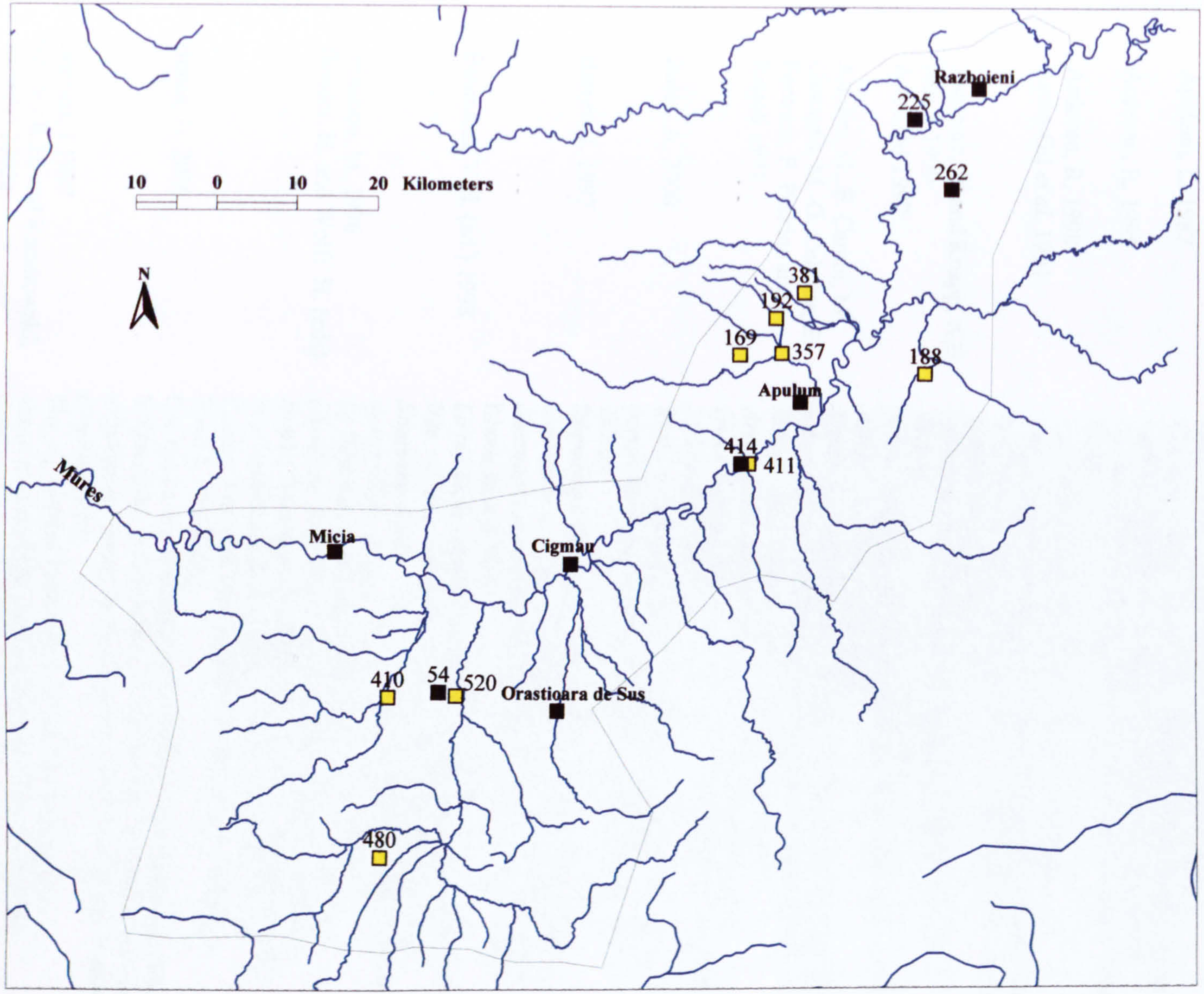


Figure 6.4: Distribution of military sites and materials

(sites with tegular material reported outside garrisons or military vici highlighted)

Bibliography:

Alicu, D. 1994 — Cercetari arheologice la Cluj-Napoca: villa rustica din Valea Chintaului. Campaniile 1990-1992, *Acta Musei Napocensis* 31, 539-554

Alicu, D. 1998 — Les villae rusticae dans le basin du Somes Rece (la villa rustica de Chinteni I), in Baumann 1998, 127-160

Alicu, D. and Boegli, H. (eds.) 1993 — *Politique edilitaire dans les provinces de l'Empire Romain, II ème – IV ème siècles après J.C. Actes de colloque roumano-suisse, Deva, 21-26 octobre 1991*, Cluj Napoca,

Apolzan, L. 1987 — *Carpatii – tezaur de istorie. Perenitatea asezarilor risipite pe inaltimi*, Editura stiintifica si enciclopedica, Bucharest

Ardevan, R. 1995 — Civitas et vicus dans la Dacie Romaine, in Baumann 1998, 45-56

Ardevan, R. 1998 — *Viata municipala in Dacia Romana*, Timisoara

Arino-Gil *et al.* 1994 — Les cadastres romains d'Hispanie: ètat actuel de la recherche, in Doukelis, P.N and Mendoni, L.G. (eds) *Structures rurales et sociétés antiques*, Paris

Ashmore, W and Knapp, A.B. (eds.), 1999 — *Archaeologies of landscape. Contemporary perspectives*, Oxford

Aston, M 1997 — *Interpreting the landscape: landscape archaeology and local history*, London, New York

Attolini, G., F. Cambi, M. Castagna, M.-G. Celuzza, E. Fentress, P. Perkins and E. Regoli 1991 — Political geography and productive geography between the valleys of the Albegna and the Fiora in northern Etruria, in G. Barker and J. Lloyd (eds), *Roman landscapes. Archaeological survey in the Mediterranean region* (Archaeological monographs of the British School at Rome, 2), London, 142-152.

Balos, A. 2000 — Spatii si functionalitati in constructiile dacice clasice. O perspectiva etno-arheologica, *Acta Musei Porolissensis* 24, 289-97

Barrett, J. 1997 — Romanization: a critical comment, in Mattingly, D (ed) *Dialogues in Roman imperialism : power, discourse, and discrepant experience in the Roman Empire,* Portsmouth, Rhode Island 51-64

Baumann, V.H. (ed.) 1998 — *La politique édilitaire dans les provinces de l'Empire romain IIème-IVème siècles après J.-C., Actes du IIIe Colloque Roumano-Suisse "La vie rurale dans les provinces romaines: vici et villae, Tulcea, 8-15 octobre 1995*, Tulcea

Bénabou, M. 1976 — *La Résistance africaine à la romanisation*, Paris

Bender, H. and Wolff, H. (eds) — *Ländliche Besiedlung und Landwirtschaft in den Rhein-Donau Provinzen des Römischen Reiches. Vortrage eines Internationalen Kolloquiums vom 16-21 April 1991 in Passau*, Passauer Universitätsschriften zur Archäologie, Band 2, Espelkamp

Benea, D. 2000 — Die innere organisierung der Militärvici aus Dakien (I) (Die Vohnungen) in Ciugudean, H. and Moga, V. (eds) *Army and urban development in the Danubian provinces of the Roman Empire*, 33-61

Bennett, J.1997 — *Trajan, optimus princeps: a life and times*, London

Bewley R.H. and Raczkowski, W. (eds) 2002a — *Aerial archaeology - developing future practice*, Nato Science Series, Amsterdam

Bewley R.H. and Raczkowski, W. 2002b — Past achievements and prospects for the future development of aerial archaeology: an introduction, in Bewley and Raczkowski 2002a, 1-8

Bewley, B 2002 — Aerial survey: learning from a hundred years of experience?

in Bewley and Raczkowski 2002a, 11-18
Bintliff, J. 1997 Catastrophe, chaos and complexity: the death, decay and rebirth of towns from antiquity to today, *Journal of European Archaeology* 5/2, 67-90
Bogdan-Cataniciu, I.O.M. 1981 *Evolution of the system of defence works in Roman Dacia, BAR International Series 116,* Oxford
Braasch, O. 2002 Goodbye Cold War! Goodbye Bureaucracy? Opening the skies to Aerial Archaeology in Europe, in Bewley and Raczkowski 2002a, 19-22
Bradford, J. 1957 *Ancient landscapes: studies in field archaeology*, Bath
Burnham, B.C. and Wacher, J. 1990 *The 'small towns' of Roman Britain*, London
Chouquer, G. and Favory, F. 1991 *Les paysages de l'antiquité. Terres et cadastres de l'Occident romain (IVe s.avant J.C./IIIe s. après J.C*, Paris
CIL = Mommsen, T. 1863- *Corpus inscriptionum latinarum*, Berlin
Ciongradi, C. 2004 a Burial monuments in Roman Dacia and their implications, in Hanson and Haynes 2004, 165-78
Ciongradi, C. 2004 b *Grabmonument und Sozialer status in Oberdakien*, (PhD thesis, University of Cologne)
Ciugudean, H. and Moga, V. (eds) 2000 *Army and Urban Development in the Danubian Provinces of the Roman Empire –Proceedings of the International Symposium Alba Iulia 8th-10th October 1999*, Bibliothcca Musei Apulensis XV, Alba Iulia
Crawford, O.G.S. 1954 A century of Air-Photography, *Antiquity 28,* 206-210
Collis, J. (ed) 2001 *Society and Settlement in Iron Age Europe - L'Habitat et l'Occupation du Sol en Europe, Actes du XVIIIe Colloque de l'AFEAF, Winchester - April 1994*, Sheffield
Condurachi, E. and Daicoviciu, C. 1971 *Romania*, London
Constantinescu, M. Daicoviciu C. and Pascu, St. 1970 *Histoire de la Roumanie des origines a nos jours*, Editions Horvath
Crisan, I. H. 1986 *Spiritualitatea geto-dacilor: repere istorice*, Bucharest
Cunliffe, B. 1994 *The Oxford illustrated prehistory of Europe,* Oxford
Dana, D. and Ruscu, L. 2001 *Zalmoxis. An Addenda to FHD*, Thraco-Dacica 22, 223-244
Daicoviciu, C. 1969 Orase targuri si sate in Dacia romana, *Acta Musei Napocensis* VI, 537-544
Daicoviciu, C. Petrovici, E. and Stefan, Gh. 1963 *La formation du peuple roumain et de sa langue,* Éditions de l'Academie de la République Populaire Roumaine, Bucharest
Dark, K. and Dark, P. 1997 *The Landscape of Roman Britain,* Stroud
Darvill, T and McWhirr, A, 1984 Brick and Tile Production in Roman Britain: Models of Economic Organisation, *World Archaeology* 15/3, 239-261
Delano-Smith, C. 1996 Where was the 'wilderness' in Roman times? in Shipley and Salmon 1996, 154-179
Diaconescu, A. 1997 Dacia under Trajan. Some observations on Roman tactics and strategy, *Acta Musei Napocensis* 34.1, 13-52
Diaconescu, A. 2004 The towns of Roman Dacia: recent research, in Hanson and Haynes 2004, 87-142
Diaconescu, A. and Piso, I. 1993 Apulum, in Alicu and Boegli 1993, 67-82
Dilke, O.A.W. 1971 *The Roman Land Surveyors. An Introduction to the Agrimensores*, Newton Abbot
Dise, R.L.1991 *Cultural change and imperial administration: the Middle Danube provinces of the Roman Empire*, American University Studies IX, 99, P. Lang, New York, Bern, Frankfurt am Main, Paris, London
Doneus, M. Doneus, N. and Neubauer, W. 2002 Integrated archaeological interpretation of combined prospection data, Zwingendorf, Austria - a case study in Bewley and Raczkowski 2002a, 149-165

El Susi, G. 1996 — *Vanatori, pescari si crescatori de animale in Banatul mileniilor 6 i. Ch - 1 d. Ch,* Bibliotheca Historica et Archaeologica Banatica, III

Eliade, M. 1991 — *Istoria credintelor si ideilor religioase* (2nd edition), Bucharest

Ferencz, I.V and Ferencz, D. 2001 — Cateva consideratii generale privind asezarile datate in secolele III-II i.Chr. de pe cursul mijlociu al Muresului, Revista Bistritei 15, 39-53

Ferenczi I. 1988 — Contributii la problema formarii asezarilor cu caracter protourban la daci (cu speciala privire la SARMIZEGETUSA TO BASILEION), *Apulum* 25, 127-159

Floca, O. 1953 — Ferma (villa rustica) din epoca sclavagista romana, *Materiale arheologice, I,* 743-754

Floca, O. and Valea, M. 1965 — Villa rustica si necropola daco-romana de la Cincis, *Acta Musei Napocensis* II, 163-192

Florea, G. 1998 — *Ceramica pictata dacica: Arta, mestesug si societate in Dacia preromana (sec. I a. Chr. - I p. Chr.)*, Cluj-Napoca

Florea, G. and Suciu, L. 1995 — Observatii cu privire la scutul de la Piatra Rosie, *Ephemeris Napocensis* 5, 48-61

Fox, C. 1933 — *The personality of Britain: its influence on inhabitant and invaders in prehistoric and early historic times* (2nd edition), Cardiff

Foxhall, L. 1996 — Feeling the earth move: cultivation techniques on steep slopes in classical antiquity, in Shipley, G. and Salmon J. 1996, 44-67

Frere, S.S. 1971 — *Verulamium excavations, vol. 1*, Oxford

Garnsey, P.D.A. and Whittaker, C.R. (eds.) 1978 — *Imperialism in the Ancient World*, Cambridge

Gaudefroy, S. Malrain, F. and Pinard, E. 2001 — Le département de l'Oise de La Tène 1 à La Tène III: approche micro-régionale, in Collis, J. (ed) 2001, 269-291

Gheorghiu, G.L. 2001 — *Asezari si fortificatii dacice in zona cursului mijlociu al Muresului sec.II i.e.n-I e.n.* (PhD thesis at the Babes-Bolyai University, Cluj-Napoca)

Gherasimov, I.P (ed.) 1960 — *Monografia geografica a Republicii Populare Romine. Vol* 1-2. Editura Academiei Republicii Populare Romane, Bucharest,

Glodariu I. 1981 — *Asezari dacice si daco-romane la Slimnic*, Bucharest

Glodariu I. 1983 — *Arhitectura dacilor -civila si militara*, Cluj Napoca

Glodariu I. 1993 — Les habitats daces et la politique romaine d'urbanisation, in Alicu and Boegli 1993, 15-16.

Glodariu I. and Iaroslavschi, E. 1979 — *Civilizatia fierului la daci,* Cluj-Napoca

Glodariu, I. Iaroslavschi, E. Rusu-Pescaru, A. Stanescu, F. 1996 — *Sarmizegetusa Regia capitala Daciei preromane*, Acta Musci Devensis, Deva

Grahame, M. 1998 — Rome without romanization: cultural change in the pre-desert of Tripolitania (first-third centuries AD), Oxford Journal of Archaeology 17(1), 93-111

Grumazescu, C., 1975 — *Depresiunea Hategului. Studiu geomorfologic*, Bucharest

Gudea, A. I. and Gudea N, 1999 — Contributii la cunoasterea faunei domestice la daci inainte de cucerirea romana, *Apulum* 36, 145-173

Gudea, A. I. and Gudea N, 2000 — Despre cresterea animalelor, cunostinte de zootehnie si medicina veterinara in provinciile dacice (106-275). O incercare metodologica pentru stadiul actual al cercetarilor, *Apulum* 37, 241-78

Gudea, N. and Motu, I. 1994 — Die Landliche Besiedlung und Landwirtschaft im Römischen Dakien, in Bender and Wolff 1994, 511-516

Gudea, N. 1997 — Der Dakische Limes: Materialen zu seiner Geschichte,

Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz 44, 1-113

Hanson, W.S. 1994 Dealing with Barbarians: the Romanization of Britain in Vyner, B. (ed) *Building on the Past*, London, 149-163

Hanson, W.S. forthcoming Civilians on frontiers, in Visy forthcoming

Hanson, W.S. and Haynes, I.P. (eds) 2004 *Roman Dacia: the making of a provincial society*, JRA Supplementary Series 56, Portsmouth, Rhode Island

Hanson, W.S. and Oltean, I.A. 2000 A multi-period site on Uroi Hill, Hunedoara: an aerial perspective, *Acta Musei Napocensis* 37/1, 43-49

Hanson, W.S and Oltean, I.A. 2002 Recent aerial survey in Western Transylvania: problems and potential, in Bewley and Raczkowski 2002a, 109-115 and 353-5

Hanson, W.S. and Oltean, I.A. 2003. The identification of Roman buildings from the air: recent discoveries in Western Transylvania, *Archaeological Prospection* 10, 101-17

Hamilton S. and Manley, J. 2001 Hillforts, monumentality and place: a chronological and topographic a chronological and topographic review of first millennium BC hillforts of south-east England, *European Journal of Archaeology* 4/1, 7-42

Hanley, R. 2000 *Villages in Roman Britain* (2nd ed.), Shire Archaeology

Haselgrove, C. 1999 The Iron Age, in Hunter, J. and Ralston, I.B.M. (eds.) *The Archaeology of Britain - An Introduction from the Upper Palaeolithic to the Industrial Revolution*, London, 113-34

Haselgrove, C. 2001 Iron Age Britain and its European setting, in Collis 2001, 37-72

Haynes, I.P. and Hanson, W.S. 2004 An introduction to Roman Dacia, in Hanson and Haynes 2004, 11-31

Hingley, R. 1996 The "legacy" of Rome: the rise, decline and fall of the theory of Romanization, in Webster, J. and Cooper, N. (eds) *Roman imperialism: post-colonial perspectives*, Leicester, 35-48

Husar, A. and Man, N. 1998 The rural settlement at Cristesti, in Baumann 1998, 57-77

Iaroslavschi, E. 1997 *Tehnica la daci,* Cluj Napoca

Iliescu, V. Popescu, V.C. and Stefan, G. 1964 *Izvoare privind istoria Rominiei*, I: *De la Hesiod la Itinerarul lui Antoninus*, Bucharest

Isac, D. forthcoming Vicus Samum on the Northern frontier of Dacia in Visy forthcoming

Jones, G.D.B. and Mattingly, D. 1990 *Atlas of Roman Britain*, London

Knapp, A. B. 1990 Production, Location, and Integration in Bronze Age Cyprus, *Current Anthropology*, 31/2. 147-176

Knapp A. B. 1997 *The archaeology of late bronze age Cypriot society: the study of settlement, survey and landscape*, Glasgow

Knapp, A.B. and Ashmore, W. 1999 Archaeological landscapes: constructed, conceptualized, ideational in Ashmore and Knapp 1999, 1-30

Kolendo, J. 1994 La relation ville/campagne dans les provinces danubiennes. Réalité et son reflet dans la mentalité, in Bender and Wolff 1994, 87-99

Lepper and Frere 1988 *Trajan's Column: a new edition of the Cichorius plates : introduction, commentary and notes*, Gloucester

Lica, V. 2000 *The Coming of Rome in the Dacian World,* Konstanz

Lockyear, K. 2004 The iron age background to Roman Dacia, in Hanson and Haynes 2004, 33-74

Macrea, M. 1969 *Viata in Dacia Romana,* Bucharest, Editura stiintifica

Macrea, M. and Glodariu, I. 1976 *Asezarea dacica de la Arpasu de Sus*, Bucharest

MacKendrick, P. 1975 *The Dacian stones speak*, Chapel Hill

Marghitan, L. 1970a Micia a fost un "pagus" in tot timpul stapanirii romane? in *Studii si Cercetari de Istorie Veche si Arheologie 21/4,* 579-

Marghitan, L. 1970b — Vestigii dacice de pe cursul mijlociu al Muresului, *Sargetia* 7, 11–19

Marghitan, L. 1998 — Reflectii asupra romanizarii Daciei. Sapaturile arheologice de la Deva, *Sargetia* XXVII/1, 1997-1998, 303-352

Martian, J. 1910 — Archäologisch-prähistorishces Repertorium für Siebenbürgen, *Mitteilungen der Antropologischen Gesellschaft* 39-40, 1909-1910, 321-358

Marza, I. 1997. — Andezitul utilizat de daci in constructiile sacre de la Sarmizegetusa Regia - petrografia si provenienta, *Acta Musei Napocensis* 34/1, 819–23

Mattingly, D.J. 1995 — *Tripolitania*, London

Maxfield, V.A. and Dobson, M. (eds) 1989 — *Roman frontier studies 1989*, Exeter

Millett, M. 1990 — *The Romanization of Britain. An Essay in Archaeological Interpretation*, Cambridge

Millett, M. 2001 — Roman interaction in north-western Iberia, *Oxford Journal of Archaeology* 20(2), 157-170

Mitrofan, I. 1973 — Villae Rusticae in Dacia Superioara I, *Acta Musei Napocensis* X, 127-150

Mitrofan, I. 1974 — Villae Rusticae in Dacia Superioara II, *Acta Musei Napocensis* XI, 41-59

Mitrofan, I. 1976 — Villae rusticae pe teritoriul Sarmizegetusei, *Sargetia XIII*, 291-297

Mitrofan, I. 1998 — Les villae rusticae dans la Dacie Romaine, in Baumann 1998, 169-172

Mitrofan, I. 1999 — Marele centru de ceramica de la Micasasa, in *Napoca - 1880 de ani de la inceputul vietii urbane*, 166-173

Mocsy, A. 1974 — *Pannonia and Upper Moesia : a history of the middle Danube provinces of the Roman Empire*, London

Moga, V. 1995 — Recherches sur l'epoque romaine à Ghirbom, in Baumann 1995, 161-168

Moga, V. and Ciugudean, H. (eds) 1995 — *Repertoriul arheologic al judetului Alba*, Alba Iulia

Morariu, T. Cucu, V. and Velcea, I. 1966 — *The geography of Romania*, Bucharest

Mulvin, L. 2002 — *Late Roman Villas in the Danube-Balkan Region* BAR International Series 1064, Oxford

Nandris, J. G. 1976 — The Dacian Iron Age. A comment in a European context, in *Festschrift für Richard Pittioni*, Vienna, 723–36

Nandris, J.G. 1981 — Aspects of Dacian economy and highland zone exploitation, *Dacia, (Nouvelle Series) XXV*, 231-54

Oexle, J (ed) 1997 — *Aus der Luft - Bilder unserer Geschichte: Luftbildarchäologie in Zentraleuropa*, Landesamt für Archäologie mit Landesmuseum für Vorgeschichte. Dresden

Oltean, I. A. 2002 — The use of satellite imagery for the transcription of oblique aerial photographs, in Bewley and Raczkowski 2002a, 224-232

Oltean, I. A. 2004 — Rural settlement in Roman Dacia: some considerations, in Hanson and Haynes 2004, 143-164

Oltean, I.A and Hanson, W.S. 2001 — Military *vici* in Dacia: an aerial perspective, *Acta Musei Napocensensis* 38.1, 123-34

Oltean I.A., Radeanu, V. and Hanson W.S. forthcoming — New discoveries in the military *vicus* of the auxiliary fort at Micia, in Visy forthcoming

Oprean, C. 2000 — Relationship of Forts to Town Origins in Roman Dacia, in Ciugudean and Moga 2000, 79-89

Palmer, R. 1984 — *Danebury: an Iron age hillfort in Hampshire. An aerial photographic interpretation of its environs*, London

Palmer, R. 1995 — What an opportunity! in Luftbildarchaologie in *Ost- und Mitteleuropa-Aerial Archaeology in Eastern and Central Europe*, Sonderdruck aus Forschungen zus Archaologie im Land Brandenburg 3, 23-32

Palmer, R. 1996 — Air photo interpretation and the Lincolnshire Fenland, *Landscape History* 18, 5-16

Parker Pearson M., Mulville J., Sharples N. and Smith H. 2001 — Decoding dirt and deposition: the Iron Age broch settlement of Dun Vulan, Outer Hebrides, Scotland in Collis 2001, 125-135

Piso, I. 1991 — Die Inschriften von Pfaffenberg und der Bereich der Canabae legionis, *Tyche* 6, 131-169

Piso, I. 1993a — *Fasti povinciae Daciae*, Antiquitas 1, Bonn

Piso, I. 1993b — Die Soziale und Ethnische Zusammensetzung der Bevölkerung in Sarmizegetusa und in Apulum, in Eck, W. (ed.) *Prosopographie und Sozialgeschichte. Studien zur Methodik und Erkenntnismöglichkeit der kaiserzeitlichen Prosopographie. Kolloquium Köln 24-26 November 1991*, Böhlau, Köln 315-337

Piso, I. 1995 — Le territoire de la Colonia Sarmizegetusa *Ephemeris Napocensis* 5, 63-82

Popa, D. 2002 — *Villae, vici, pagi. Asezarile rurale din Dacia romana intracarpatica*, Bibliotheca Septemcastrensia II, Bucharest

Popa, R. 1972 — Sapaturi intr-o villa rustica de langa Hateg, *Acta Musei Napocensis* IX, 439-447

Popa, O. 1987 — *Contributii la repertoriul arheologic al Judetului Hunedoara –Tara Hategului. Lucrare Metodico-stiintifica in vederea obtinerii gradului I,* Universitatea Babes-Bolyai, Cluj Napoca

Popa, C.I. and Totoianu, R. 2000 — Cateva probleme ale epocii Latène in lumina descoperirilor recente de la Lancram (or. Sebes) -"Glod" (Jud. Alba), in Gaiu, C. and Rustoiu, A. (eds) *Les celtes et les Thraco-Daces de l'est du bassin des Carpates –Les actes du colloque national qui a eu lieu a Bistrita le 16-17 octobre 1998*, Cluj Napoca

Popescu, D. 1970 — Sapaturile arheologice din Republica Socialista Romania in anul 1969, *Studii si Cercetari de Istorie Veche* 21/3, 1970, 493-522

Protase, D. 1968 — Observatii in legatura cu asezarile rurale din Dacia Romana, *Acta Musei Napocensis,* V, 505-512

Protase, D. 1980 — *Autohtonii in Dacia, 1, Dacia Romana*, Bucharest

Protase, D. 1998 — Un village daco-romain de IIe-IVe siécles á Obreja en Transylvanie, in Baumann 1998, 79-99

Rada, M. Cochina N. and Manea, D 1989 — Identificari arheologice cu ajutorul fotografiilor aeriene, in *Thraco-Dacica,* X 1-2, 203-204

Rada, M. and Cochina, N. * — Localizarea a doua asezari antice prin aerofotointerpretare, in *Analele Institutului de Geodezie, Fotogrammetrie, Cartografie si Organizarea Teritoriului* VI, 67-74

Rada, Cochina and Corcodel ** — Vicina isi dezvaluie urmele pe fotografia aeriana, in *Analele Institutului de Geodezie, Fotogrammetrie, Cartografie si Organizarea Teritoriului* VIII, 97-103

Rorison, M. 2001 — *Vici in Roman Gaul*, BAR International Series 933, Oxford

Rotea, M. 1993 — Asezarile culturii Wietenberg, *Ephemeris Napocensis* 3, 25-36

Ruscu, D. 1999 — Das Verteidigungssystem Dakiens in frühantoninischer Zeit in Gudea N. (ed.) *Roman frontier studies. Proceedings of the XVIIth International Congress of the Roman Frontier Studies*, Zalau, 477-484

Ruscu, D. 2003 — *Provincia dacia in istoriografia antica*, Cluj Napoca

Ruscu, D. 2004 The supposed extermination of the Dacians: the literary tradition, in Hanson and Haynes 2004, 75-85

Ruscu, L. 2002 *Relatiile externe ale oraselor grecesti de pe litoralul romanesc al Marii Negre*, Cluj Napoca

Russu, I.I. 1975 *Inscriptiile Daciei Romane vol. 1, Introducere istorica si epigrafica. Diplomele Militare. Tablitele cerate*, Bucharest

Russu, I.I., Floca, O. and Wollmann, V. 1984 *Inscriptiile Daciei Romane III/3, Dacia Superior: zona centrala*, Bucharest

Rusu, A. and Pescaru, E. 1993 Germisara daco-romaine, in Alicu and Boegli 1993, 201-213

Rusu-Pescaru, A. and Alicu, D, 2000 *Templele romane din Dacia*, I, Deva

Salway, P. 1967 *The frontier people of Roman Britain*, Cambridge

Sanie, S. 1995. *Din istoria culturii si religiei geto-dacice*, Iasi

Sarbu, V. 1993 *Credinte si practici funerare religioase si magice in lumea geto-dacilor*, Galati

Scurtu, E.F. 1997 Radiografia geofizica a unei parti a orasului roman Porolissum, in *Studii si Cercetari de Istorie Veche si Arheologie* 48/4 (octombrie-decembrie), 361-372

Shipley, G. 1996 Ancient history and landscape histories, in Shipley and Salmon 1996, 1-15

Shipley, G. and Salmon, J. 1996 (eds) *Human landscapes in classical Antiquity. Environment and culture*, London, New York

Smith, J.T. 1997 *Roman Villas. A study in social structure*, London

Snape, M.E. 1989 Roman and native; *vici* on the north British frontier, in Maxfield and Dobson 1989, 468-71

Sommer, C.S. 1988 Kastellvicus und Kastell. Untersuchungen zum Zugmantel im Taunus und zu den Kastellvici in Obergermanien und Rätien, *Fundberichte aus Baden-Württenberg* 13, 457-707

Sommer, C.S. 1989 Life beyond the ditches: housing and planning of the military *vici* in Upper Germany and Raetia, in Maxfield and Dobson 1989, 472-76

Sommer, C.S. 1999 The Roman army in SW Germany as an instrument of colonisation: the relationship of forts to military and civilian *vici*, in Goldsworthy, A. and Haynes, I. (eds) *The Roman army as a community*, Portsmouth, Rhode Island, 81-93

Sommer, C.S. forthcoming Canabae und Kastellvici in Obergermanien in Reddé, M. (ed) *Manuel d'archéologie préhistorique, celtique et gallo-romaine* (2nd edn.)

Southern, P. 1997 *Domitian: tragic tyrant*, London

Stahl, P.H. 1986 *Household, village and village confederation in southeastern Europe*, East European Monographs 200, New York

Stefan, G. 1964 Introducere, in Iliescu *et al.*1964

Stoertz, C. 1997 *Ancient landscapes of the Yorkshire Wolds:aerial photographic transcription and analysis*, Swindon

Strobel, K. 1998 Dacii. Despre complexitatea marimilor etnice, politice si culturale ale istoriei spatiului Dunarii de Jos (II), *Studii si Cercetari de Istorie Veche si Arheologie* 42/2, 207-227

Teposu-Marinescu, L. 1985 Cu privire la urbanizarea Miciei, *Sargetia* 18-19 (1984-1985), 125-28

T.I.R. L-34, 1968 *Tabula Imperii Romani. Aquincum-Sarmizegetusa-Sirmium. L-34 Budapest*, Amsterdam

T.I.R. L-35, 1965 *Tabula Imperii Romani. Drobeta, Romula, Sucidava. L-35 Bucharest*, Bucharest

Talbert R.J.A., *et al.* (eds) 2000 *Barrington atlas of the Greek and Roman world*, Princeton

Tatu, H. Popa, O. and Kalmar, Z. 1991 Contributii la repertoriul arheologic al Tarii Hategului (Judetul Hunedoara), *Sargetia, XXI-XXIV, 1988-1991*, 93-106

Tamba, D. 1997 *Das Römergrenzkastell von Romanasi-Largiana. Castrul*

roman de la Romanasi-Largiana, Zalau

Tentea, O. and Marcu, F. 1997 Die handgearbeite Keramik aus dem Römerkastell von Gilau, in Gudea, N. (ed.), *Römer und Barbaren an den Grenzen des Römisches Daciens* Acta Musei Porolissensis XXI, Zalau, 221-233

Trogmayer, O. 1980 Pannonia before the Roman conquest, in Lengyel, A. and Radan, G.T.B. (eds) *The archaeology of Roman Pannonia*, Budapest, 65-82

Trohani G. 1994 Asezari geto-dacice aparate natural si fortificate din Muntenia, *Sargetia* XXV, 1992-1994, 397-400

Trump, D. 1991 'Nuraghi as social history: a case study from Bonu Ighinu, Mara (SS)', in B. Santillo Frizell (ed.), *Arte militare e architettura nuragica. Nuragic architecture in its military, territorial and socio-economic context.* Proceedings of the first international colloquium on Nuragic architecture at the Swedish institute in Rome, 7-9 December, 1989, Rome, 163-168.

Tudor, D. 1968 *Orase, targuri si sate in Dacia romana*, Bucharest

Tudor, D. 1969 La ville et le village en Dacie Romaine, *Dacia* (Nouvelle Series) XIII, 319-328

van Dommelen, P 1999 Exploring everyday places and cosmologies, in Ashmore and Knapp 1999, 277-284

Vasiliev, V. 1995 *Fortifications de réfuge et établissements fortifiées de prémier age de fer en Transylvanie*, Bucharest.

Vasiliev V., Aldea, I. Al. and Ciugudean, H. 1991 *Civilizatia dacica timpurie in aria intracarpatica a Romaniei. Contributii arheologice: asezarea fortificata de la Teleac*, Cluj Napoca.

Vékony, G. 2000 *Dacians-Romans-Romanians,* Matthias Corvinus Publishing

Visy, Z. (ed.) forthcoming *Proceedings of the XIXth International Congress of Roman Frontiers Studies held in Pecs, Hungary (September 2003)*

Wells, P.S. 1999 *The Barbarians speak: how the conquered peoples shaped Roman Europe*, Princeton

Wells, P.S. 2001 *Beyond Celts, Germans and Scythians. Archaeology and Identity in Iron Age Europe*, London

Whittaker, C.R. 1990 The consumer city revisited: the *vicus* and the city, *Journal of Roman Studies* 3, 110-118

Wightman, E.M. 1970 *Roman Trier and the Treveri,* London

Wightman, E.M. 1985 *Gallia Belgica*, London

Wilson, D.R. 2000 *Air Photo Interpretation for Archaeologists*, 2nd edition, Stroud

Williams, M. 2003 The agricultural cycle as metaphor in the later prehistoric period of Britain and North-Western Europe, *Journal of social archaeology* 3/2, 223–255

Wilmott, T. 2001 Cohors I Aelia Dacorum: a Dacian unit on Hadrian's wall, *Acta Musei Napocensis* 38/1 103-122

Winkler, I. Vasiliev, V. Chitu, I. and Borda, A. 1968 Villa rustica de la Aiud. Cateva observatii privind villae-le rusticae din Dacia Superior *Sargetia* V, 59-85

Wollmann, V. 1996 *Mineritul metalifer, extragerea sarii si carierele de piatra in Dacia Romana (Der Erzbergbau, die Salzgewinnung und die Steinbrüche im Römischen Dakien)* Bibliotheca Musei Napocensis XII / Veröffentlichungen aus dem Deutschen Bergbau-Museum Bochum Nr. 63, Cluj-Napoca

Woolf, G 1995 Beyond Romans and natives, *World Archaeology* 28/3, 339-350

Woolf, G 1998 *Becoming Roman. The Origins of Provincial Civilization in Gaul*, Cambridge

Zanoci, A. 1998 *Fortificatiile geto-dacice din spatiul extracarpatic in secolele VI-III a. Ch.*, Bucharest.