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ROMAN AGRICULTURAL TOOLS IN THE AGER OF VIMINACIUM

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Abstract. – The several decades long rescue excavations of the ancient city of *Viminacium* have brought to light a large number of finds with very varied functions. In this paper, we will focus our attention on the remains of agricultural tools. They can be grouped according to their application: tools for clearing plants and preparing the soil for cultivation, tools used for tillage, implements for shredding and preparation for planting, as well as those used for mowing, harvesting, soil cleaning, and haymaking. The finds of agricultural tools that we present in this paper, although small in number, represent the most reliable indicators of agricultural activities in the period from the 2nd to the beginning of the 4th century, when *Viminacium* went through its period of greatest prosperity.

Key words. – Roman agricultural tools, Roman farming, *villae rusticae*, ager of *Viminacium*

The northern parts of the Roman province of *Moesia Superior* belong to a wider geographical area, the Middle and Lower Danube Valley. After the conquest of this territory in the process of Roman expansion in the 1st century AD and the establishment of Roman administration in the newly-created provinces, organised urbanisation emerged, alongside autochthonous rural settlements, which continued to exist for some time. The Roman reign brought new organisational methods in economy and, thus, in agricultural production, as one of the most important economic activities, more or less successfully including the local population, which depended on the Romanisation level of the newly established Roman provinces. Due to insufficient historical data, we can only assume the role of the autochthonous element, not completely define it. The structure of agricultural properties is also insufficiently known, since the data provided by previous archaeological excavations refers to other parts of the Empire, where the agricultural organisation had to differ from that in the Balkan provinces due to different climatic

and other natural conditions and different levels of economic development.¹ Therefore, the reconstruction of agriculture in all its aspects represents one of the main factors for understanding the course of Roman influence in the provinces formed in the Balkans areas.

Roman government brought changes in the manner of working the land and cultivating the soil in conquered regions. Technological development and the improvement of tools used in agricultural production certainly resulted in an increase in yields on those agricultural estates where such innovations had been applied. It is difficult, however, to clarify in what manner this affected economic relationships between existing sections of the population. Even though parts of the public land (*ager publicus*) could have been given to members of the autochthonous population as well, this, however, was probably a rare occurrence, because the

¹ Lewit 2004, 91–166; Busanam, Forin 2020, 17–29; Tortosa 2020, 31–43.



Map 1. The position of Viminacium on the map of Roman provinces with the area of Stig plain (modify after: Mirković 2007, 8, Abb. 1)

Карта 1. Положај Виминацијума са издвојеном реијом равнице Сџиј (измењено према: Мирковић 2007, 8, Абб. 1)

largest portion of public land was given to landowners from Italy or earlier Romanised provinces in the west, or to Roman veterans. Colonists would get land within the ager of the colonies, and veterans usually received territories that were within the jurisdiction of legionary camps (*prata legionis*),² and which were located at a distance from a given camp.³ According to M. Mirković, in the 2nd–3rd century, veterans represented the middle class of landowners and it was probable that a considerable part of the territory at the limes belonged to them, even before the formation of the border militia – *milites limitanei*.⁴ On the basis of data provided by written sources, epigraphic and archaeological material, it is assumed that imperial domains comprehended large areas in the wider territory of the Balkans.⁵ There are indications that would suggest the existence of imperial properties in the vicinity of *Viminacium*: an imperial procurer mentioned in an inscription from *Vimi-*

nacium, dedicated to *Septimius Severus*, confirms this assumption.⁶

The least known factor in the system of Roman agriculture is the immediate workforce, and within it, the position of the autochthonous population. Tenant farmers were probably cultivating the land of the municipal aristocracy. Their existence during the period when the Romans came to these areas, but also later, certainly influenced the changes in the Roman production system,

² Mócsy 1972, 133–168; Zaninović 1985, 63–79; Mason 1988, 163–189; Bohec 2000, 219.

³ On the settlement of Roman veterans in the territory of the province of *Moesia Superior* cf. Ферјанчић 2002, 154–165.

⁴ Mirković 1968, 138.

⁵ Mirković 1996, 58–61.

⁶ Mirković 1968, 138, note 12.

but they also slowed down the spread of slave-ownership. Afterwards, with the progress of Romanisation, their numbers diminished, first and foremost because of their ever increasing participation in military service. It can be assumed that, in time, slave labour began to be used for agricultural activities. This is supported by epigraphic data from the 3rd century, where it is stated that when land was assigned to soldiers, they would also receive, at the same time, slaves and cattle.⁷

When the city gained the status of a *municipium* (117 AD), its territory covered a larger part of the plain in the lower course of the Mlava River, on the Stig plain, while, after acquiring the status of a colony (239 AD), *Viminacium* expanded to cover the entire Stig plain and Veliko Gradište (*Pincum*).⁸ The Stig plane was a very important agrarian area in the Antique period, just as it is today. It was the largest plain in the province of *Moesia Superior*, with its northern border along the Danube, to the west the Mlava River, and in the east and south-east it borders the Homolje ranges (Map 1). The fertile valley at the confluence of the river Mlava into the Danube provided conditions for intensive settling activity in this area even during prehistory, as well as later, during Antiquity. The valley of the Danube was often flooded, thus turning the flood plain into fertile ploughable land.

Archaeological excavations have established the existence of a communication that led from the northern gate of the legionary camp, along the valley of the former Klepečka river, to Lederata. In the immediate vicinity of this communication, five *villae rusticae* were explored at the Rit sites and two at the Nad Klepečkom site.⁹ Such a large number of villas in the suburban parts of *Viminacium* indicates the dense population of this area in the period of Roman administration, which can be brought into connection with the fertile land suitable for farming, especially the cultivation of cereals. Good communications with other city centres, first and foremost *Singidunum* on one side and the Morava river valley on the other, as well as the fortification system along the Danube limes, enabled the continuous transit of merchandise and safe markets.

The several decades long rescue excavations of the antique city of *Viminacium* brought to light a large number of finds of very varied functions. Since archaeological excavations are conditioned by works on the surface mine “Drmno”, the discoveries of city necropolises and other urban structures have provided the most visible results so far.¹⁰ The formation of agricultural estates outside the city is linked to economic prosperi-

ty during the 2nd and the first half of the 3rd century, when most of the inhabitants of the wider city territory lived and worked on them. Relative political security in this period enabled, among other things, the development of farming, which was one of the basic activities in the area of the fertile plain of Stig in the province of *Moesia Superior*. The marginalisation of topics regarding rural settlements (*vici, villae rusticae*), economics of agricultural estates, agricultural production, economic aspects of life etc. has been partially lessened in the last few years through discoveries of villas on several sites in the wider area of the city territory of *Viminacium* (Fig. 1).¹¹ These discoveries in the immediate urban surroundings are indicative of the importance that agriculture had for the inhabitants of *Viminacium* and its surroundings, but they still do not provide answers to questions related to the scope and structure of the ager of the city.

In order to obtain more reliable data on the development of Roman agriculture in the ager of *Viminacium*, it is necessary to have an insight into a whole series of research, starting with research of the climate, relief, soil, archaeobotanical and archaeozoological analyses. However, this time we will focus our attention on the agricultural tools that are a clear indicator of agricultural activities in the wider urban area of *Viminacium*. They were found in various locations, often near buildings within an agricultural estate.

⁷ Mirković 1968, 138, note 14.

⁸ Popović 1968, 30.

⁹ Jovičić, Redžić 2014, 54–59; Redžić *et al.* 2014, 67–69; Danković, Petaković 2014, 60–63; Redžić *et al.* 2017a, 77–86; Korać *et al.* 2018, 62–63; Milovanović *et al.* 2019, 97–108; Milovanović *et al.* 2021, 101–114.

¹⁰ There are numerous papers dealing with the research activities at *Viminacium*. On this occasion, we would like to point out only some of the titles that provided new discoveries on this significant site: Љ. Зотовић, Лужне некрополе Виминација и погребни обреди, *Viminacium* 1/1986, Пожаревац 1986, 41–60; Љ. Зотовић, Ч. Јордовић, *Viminacium* I: некропола Више Гробаља, Београд 1991; М. Кораћ, С. Голубовић, *Viminacium: Више Гробаља 2*, Београд 2009; М. Кораћ, *Сликаство гробница у Виминацијуму*, Пожаревац 2000; М. Кораћ, *Oil-lamps from Viminacium (Moesia Superior)*, Београд 2018.

¹¹ Archaeological excavations on the wider territory of the city brought to life a significant number of agricultural estates, *villae rusticae*, which represented both residential, but also economic buildings that were the centres of agricultural and craft production, *cf.* Korać *et al.*, Research of Viminacium and its suburban zones, in: *Vivere Militare Est From Populus to Emperors – Living on the Frontier*, S. Golubović, N. Mrđić (eds.), Belgrade 2018, 62–63.

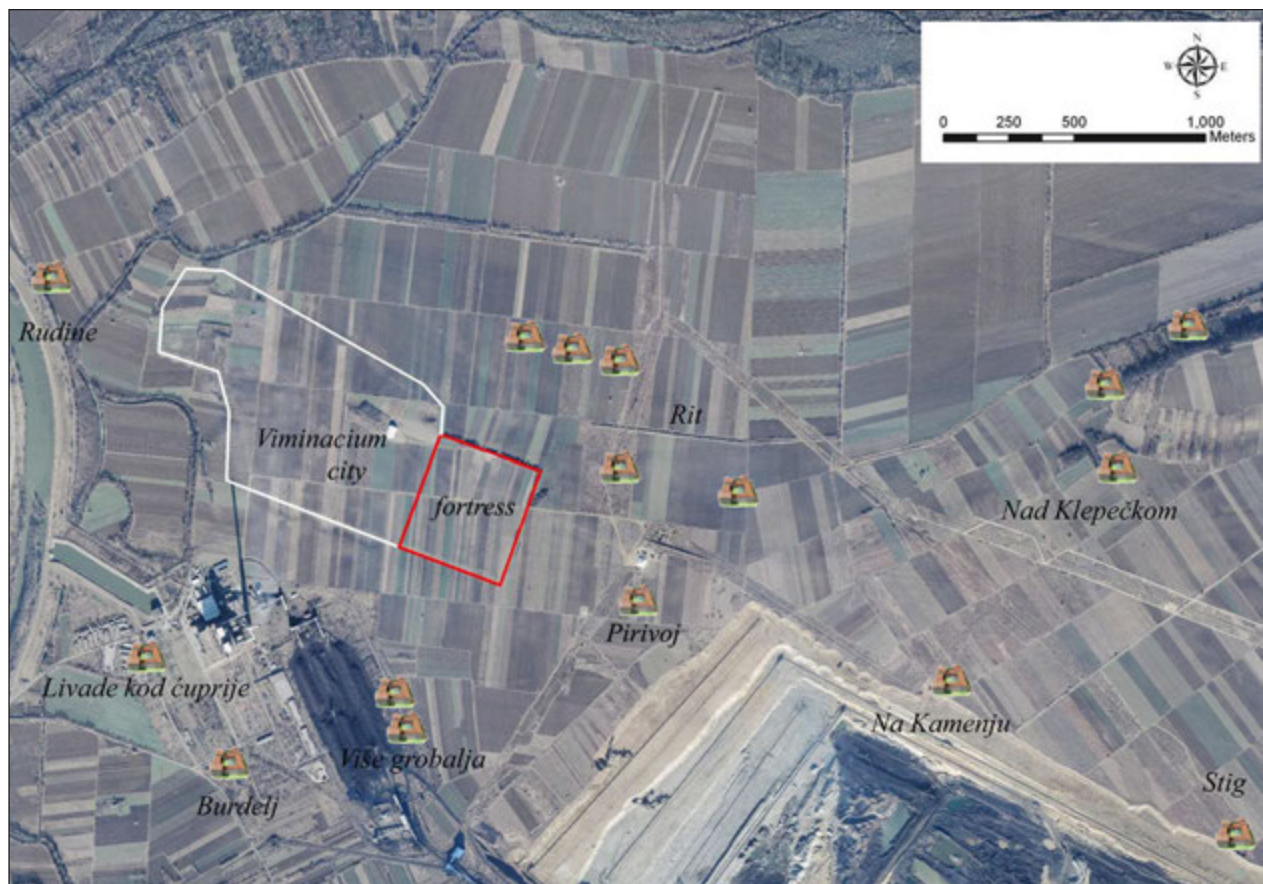


Fig. 1. *Villae rusticae* at Viminacium and its surroundings
(Doc. of the Institute of Archaeology, Belgrade, Project Viminacium)

Сл. 1. *Villae rusticae* у Виминацијуму и његовој околини
(Док. Археолошкој инстџицији у Београду, *Viminacium* пројекат)

AGRICULTURAL TOOLS

Agricultural tools from *Viminacium* can be grouped according to their application: tools for clearing plants and preparing the soil for cultivation (pickaxe, mattock), tools used for tillage, implements for shredding and preparation for planting (spade, drag hoe), as well as those used for mowing, harvesting, soil cleaning, and haymaking (pruning hook, sickle).

Pickaxe

One example of tools intended for clearing vegetation and preparing the soil for cultivation has been identified in the wider territory of *Viminacium* (No. 1). Strictly speaking, these tools were not used for tilling the soil but rather to prepare the terrain for further cultivation, so we can classify them as tools used for farming. According to their type, they are pickaxes, men-

tioned in sources as *dolabra*.¹² They are combined tools, consisting of an axe on one side and a pick on the other. As a multi-purpose tool, depending on its shape, size and weight, it was used in agriculture, silviculture, mines and quarries, and it was a part of the standard equipment of a Roman soldier, being used, among other things, for building wooden-earthen fortifications. As an agricultural tool, the pickaxe was used for clearing and preparing the soil for further cultivation, to remove roots and stumps and cut dry branches, as well as to hill up vineyards. Depending on their function, these tools had several shapes. Finds of pickaxes are numerous along the Iron Gates section of the Roman limes and deeper in the hinterland. Examples similar to

¹² White 1967, 61–65.

finds from *Viminacium* originate from Boljetin (*Smorna*), Krakul Jordan, Rudna Glava, Grocka, Salakovac near Požarevac,¹³ a hoard of tools from Poljane near Požarevac,¹⁴ a hoard of tools from Melnica near Petrovac na Mlavi,¹⁵ from Caričin Grad,¹⁶ and from Gornji Streoc in Kosovo.¹⁷

Finds similar to our example are numerous in the neighbouring areas, in Bosnia and Herzegovina, in the remains of a Roman villas in Stup near Sarajevo, Mogorjelo near Čapljina,¹⁸ in Slovenia,¹⁹ in Bulgaria, in a hoard of tools from the Early Byzantine fortification in the village of Žeglica,²⁰ and in a hoard of iron items from Elenovo.²¹

Mattock

Two specimens were discovered in the territory of *Viminacium* that we can identify as a mattock (No. 2, 3). It was used, in most cases, for removing bushes and roots in gardens, but also for crushing earth. In mountainous areas, heavy mattocks were used instead of ploughing utensils. Terminological dilemmas regarding a precise term for this type of tools have not yet been resolved. The general term used in written sources for tools belonging to mattocks and hoes is *sarculum*.²² However, as their functions are partly intertwined, it is not possible to distinguish exactly the tools *sarculum*, *ligo* and *marra* on the basis of data from ancient sources. There are numerous variations in terms of the weight, shape and length of the cutting edge, which are indicative of the composition of the soil and the need to adjust the tools and use them in the best manner possible in agricultural activities. In the territory of the Central Balkans, especially in the section along the Danube limes, findings of mattocks are common, which indicates a multi-purpose use of this tool in earthworks. We found corresponding analogies for these tools from the site of Ušće near Obrenovac,²³ and Gornji Streoc in Kosovo.²⁴ Similar specimens in Serbia come from: Sremska Mitrovica, Kostol (*Pontes*), Karataš (*Diana*), Veliki Gradac, Golubac, Dražaj near Grocka, Paraćin, Caričin Grad,²⁵ and Gradina na Jelici.²⁶

A considerable number of typologically different examples, conditioned by differences in the quality and structure of the soil, come from Roman sites in Bosnia and Herzegovina: a Roman villa in Mogorjelo, in Stup near Sarajevo, Japra – Majdanište, Krnjeuša, Prisoja, Stoc, Hrvaćani near Banja Luka, and Dračeva Strana.²⁷ They have also been found on sites in Bulgaria: Sadovec (Sadovsko Kale), Krivina (*Iatrus*), Svištov (*Novae*), and Razgrad (*Abritus*).²⁸

Spade

Agricultural tools also encompass spades, used for many purposes. One specimen was discovered in the territory of *Viminacium* (No. 4). Several types of this tool are mentioned in written sources: *pala*, *bipalium*, *vanga*, *fossorium*, *ferrea*, or *scudicia*.²⁹ They were used in gardening, for drainage works, for cutting out and for turning the earth. The quality and composition of the soil conditioned the shape of the cutting edge, so the Mediterranean type differed significantly from the Middle-European ones. The type most commonly found on our territory was the Middle-European one, whose cutting edge usually had a rectangular or trapezoidal shape, while the Mediterranean type was lighter, with a triangular cutting edge.

The finds of spades in the territory of today's Serbia have not been very numerous, which would suggest that wooden shovels, reinforced by iron, were also in parallel use in this region. We encountered corresponding analogies for this object from the Brović hoard near Obrenovac, which are chronologically determined into the period from the 3rd up to the 4th century.³⁰

A very close analogy to the example from *Viminacium* comes from Bosnia and Herzegovina, from the site of Grude near Ljubuški.³¹ Similar examples have been found in Hungary,³² Bulgaria: Razgrad (*Abritus*),³³ a hoard in Elenovo, and in Thrace.³⁴

¹³ Popović 1988, 59–61.

¹⁴ Шпехар, Јацановић 2015, 293, Т. I/2–3.

¹⁵ Живковић, Арсенијевић 2007, 217, кат. 1–2, Т. I/1–2.

¹⁶ Stamenković 2013, 84, sl. 71.

¹⁷ Ivanišević, Špehar 2006, 145, fig. 6/4.

¹⁸ Busuladžić 2014, 66, Т. 47/ P. 23.

¹⁹ Pflaum 2007, 302, Pl. 3/23.

²⁰ Любенова 1981, 164, обр. 104/2.

²¹ Кајумов, Минчев 2013, 331, fig. 5.

²² White 1967, 36–37.

²³ Popović 1988, 37, Т. I/5.

²⁴ Ivanišević, Špehar 2006, 143, fig. 6/2.

²⁵ Popović 1988, 36–38.

²⁶ Milinković 2002, 104, Abb. 28/9, 12.

²⁷ Busuladžić 2014, 61–63, Т. 37–42/ P. 19–20.

²⁸ Динчев Чолаков 2010, 70, фиг. 77/1, 87/1–2.

²⁹ White 1967, 17.

³⁰ Popović 1988, 34, Т. I/2.

³¹ Busuladžić 2014, 60, Т. 35.

³² Thomas 1964, 151, Abb. 79, 2a, 2b.

³³ Динчев Чолаков 2010, 39, фиг. 27/4.

³⁴ Кајумов, Минчев 2013, 333, fig. 7.

Drag hoe

The term *rastrum* comprehends tools with several prongs. Tools with two prongs are known by the term *bidens*, while drag hoes belong to tools with four or six prongs – *rastrum*.³⁵ Drag hoes were used for clearing the terrain and gathering hay, and in mountainous, difficult to access terrains they also had the function of a plough. One example has been found at Viminacium (No. 5). In the territory of the Central Balkans, the finds of a metal four-prong drag hoe (*quadridens*) are very rare. This justifies the assumption that wooden tools – pitchforks (*rastelli*) were used for clearing the terrain and gathering hay.

Finds of drag hoes from the Roman period have not been registered on the territory of *Moesia Superior*; except of this specimen from Viminacium. When it comes to the wider area of the Balkan Peninsula, in Bosnia and Herzegovina, finds of Roman drag hoes have been discovered on the sites in Halapić near Glamoč and on the site of a Roman villa in Žabljak near Doboj, which were very broadly dated into the period from the 1st up to the 6th century.³⁶ A somewhat older find of a four-prong drag hoe (*rastrum quadridens*) was discovered at the site of Unec near Rakek in Slovenia, and it was dated to the end of the La Tène period.³⁷

Pruning hook

Pruning hooks are widely used farming tools and similar to sickles and scythes. They belong to the group of tools under the general term of *falces*. Depending on their specific purpose, Roman writers distinguished twelve types.³⁸ Hooks were used for cutting and pruning in general, within different activities: for clearing out weeds, different vegetation, cutting thorns or pruning grapevines, for picking different types of fruit and grape clusters.

Examples of pruning hooks from *Viminacium* (No. 6–12) have a semi-circular bent cutting edge, with a triangular cross-section, bent almost at a right angle in the upper part. The lower part of the cutting edge turns into an insertion tang with a rectangular cross-section. In some examples, the insertion tang has a flat end, and in others, it is bent in the shape of a loop.

We found corresponding analogies for the pruning hooks from *Viminacium* in the territory of Serbia in: Saldum,³⁹ Poljane near Požarevac (hoard of tools)⁴⁰ and the early Byzantine fortification Gradina na Jelici.⁴¹

Apart from direct parallels, similar specimens were discovered on sites along the Iron Gates limes, but also in the hinterland and deeper in the interior of the Central

Balkans: *Singidunum*, Čezava – *Novae*, Boljetin – *Smor-na*, Ravna – *Camps*, Karataš – *Diana*, Kraku lu Jordan, Hajdučka Vodenica, Gamzigrad – *Romuliana*, *Mediana*,⁴² and Caričin Grad.⁴³

Pruning hooks of various types have been registered in all parts of the Empire, from Rome, Great Britain in the west, up to the Near East.⁴⁴ It was because of the wide application of this tool in different fieldwork that it was in mass use. In countries neighbouring ours, pruning hooks similar to our examples have also been identified in large numbers in Bosnia and Herzegovina – in villas in Višiči, Dračeva Strana, Proboj, Lisičići, Stup, Grude, Ljubuški, Krehin Gradac, Tasovčići and Mogorjelo,⁴⁵ in Hungary,⁴⁶ in Romania,⁴⁷ in Bulgaria, on numerous sites, from Roman cities of *Ratiaria*, *Augusta*, fortification of *Castra Martis*, Late Antique villa in Pernik, etc.⁴⁸

Sickle

The repertoire of agricultural tools is completed at *Viminacium* with sickles (*falx messoria*) (No. 13–14). They were widely used in farming for harvesting activities. Sickles have an arched cutting edge, with a short handle, located along the axis of the cutting edge. The curve of the cutting edge varies, from a shallow arch to a semi-ellipse. The sickles originating from *Viminacium* indicate that the inhabitants were collecting grain from the harvest fields in the vicinity of the city.

Two iron sickles with differently shaped blades were found in the surroundings of *Viminacium*. This tool is frequently encountered on archaeological sites in the territory of the provinces of the Central Balkans from the entire Roman period. Sickles similar to our specimens have been found from the building complex at Ušće near Obrenovac, in the hoard of Brović near

³⁵ White 1967, 52–53.

³⁶ Busuladžić 2014, 80, P. 32, sl. 96, 97.

³⁷ Gabrovec 1955, sl. 4.

³⁸ White 1967, 73–74.

³⁹ Jeremić 2009, 168, fig. 81, cat. 500.

⁴⁰ Шпехар, Јацановић 2015, 293, Т. I/4.

⁴¹ Milinković 2002, 123–124, Abb. 37/1; 38/1.

⁴² Popović 1988, 77–78.

⁴³ Stamenković 2013, 84, sl. 71.

⁴⁴ More about pruning hooks cf. Popović 1988, 76–77.

⁴⁵ Busuladžić 2014, 78, T. 65–71, P. 30.

⁴⁶ Thomas 1964, 70–72.

⁴⁷ Protase 1980, 60, fig. 12.

⁴⁸ Динчев Чолаков 2010, 41–51, фиг. 46.



Fig. 2. Map of the site Nad Klepečkom with the location of excavated villas, rural settlement, and necropolis (Doc. of the Institute of Archaeology, Belgrade, Project Viminacium)

Сл. 2. Карта локалитета Наг Клепечком са локацијама ископаних вила, сеоског насеља и некрополе (Док. Археолошког института у Београду, Viminacium пројекат)

Obrenovac, and at the sites along the Danube limes: Čezava – *Novae*, Boljetin – *Smorna*, Kostol – *Pontes*, Caričin Grad,⁴⁹ and Saldum.⁵⁰

Analogies for our examples of sickles are numerous in neighbouring regions: in Bosnia and Herzegovina, on Roman agricultural estates, most prominently *villae rusticae* in Novi Šeher, Ljusina, Stup, Tutnjevac, Proboj, Mogorjelo;⁵¹ in Hungary,⁵² on numerous sites in Bulgaria, of which a certain number originate from villas, from Razgrad (*Abritus*), Krivina (*Iatrus*), etc.⁵³

ARCHAEOLOGICAL CONTEXT OF AGRICULTURAL TOOL FINDS

The agricultural tools presented in the paper come from different sites from the *ager* of *Viminacium*.

The largest number of finds registered so far comes from the site of Nad Klepečkom (No. 1–3, 5–7, 13),

which is located to the east of the legionary camp and the city. Even though it had been known from before in archaeological literature,⁵⁴ more recent archaeological research of the site, which began in 2004, brought new discoveries, which indicate the scope and importance of Roman farming in this area.⁵⁵ Being located on the route planned for the exploitation of the surface

⁴⁹ Popović 1988, 83–84, type A/a.

⁵⁰ Jeremić 2009, 168, cat. 498.

⁵¹ Busulađić 2014, 74, T. 57–60, P. 27–28.

⁵² Thomas 1964, 138, 151.

⁵³ Динчев Чолаков 2010, 52–53, фиг. 58–60.

⁵⁴ Mirković 1986, 31, note 25.

⁵⁵ Archaeologists from the Institute of Archaeology in Belgrade, under the leadership of the head of the Viminacium project, Dr Miomir Korać, participated in these excavations.

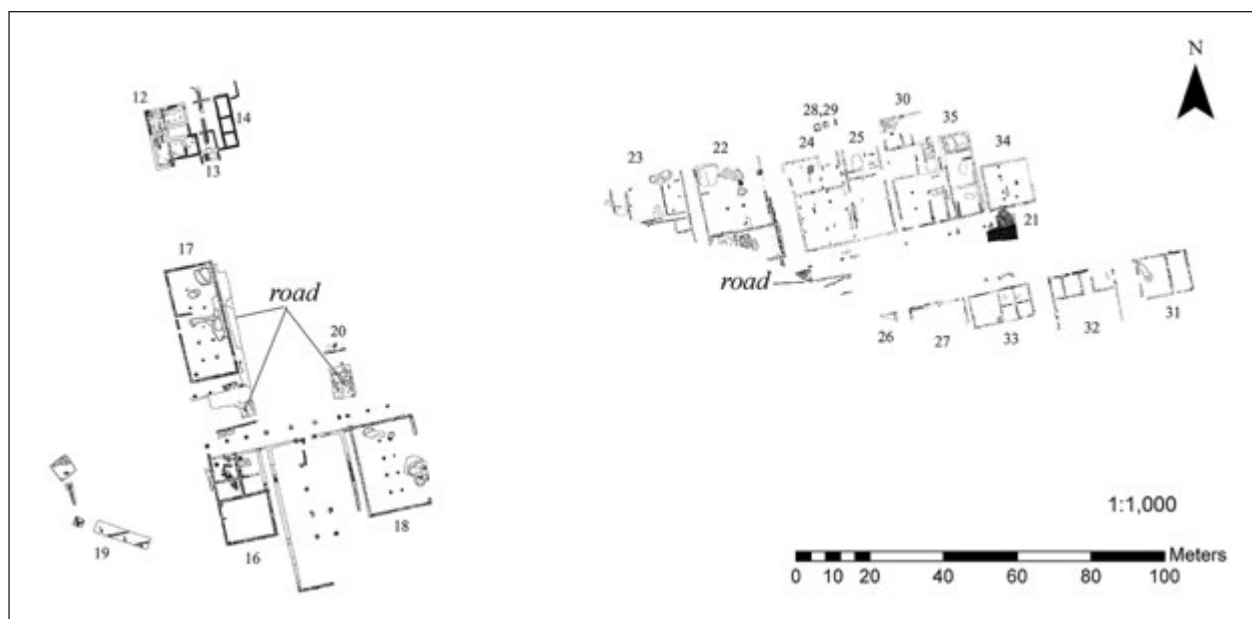


Fig. 3. Plan of the rural settlement from the site Nad Klepečkom (after: Mrđić, Jovičić 2012, 53, Sl. 2)

Сл. 3. План сеоској насеља на локалитетуу Над Клепечком (према: Mrđić, Jovičić 2012, 53, Sl. 2)

mine “Drmno”, rescue excavations were performed in the period from 2008 to 2013.⁵⁶ On this occasion, remains of two necropolises with cremated and inhumed deceased individuals were researched, as well as a rural-type settlement and two separate *villae rusticae* (Fig. 2, 3). One of the villas, with impressive dimensions, represents the largest complex of this type researched so far at *Viminacium* (average dimensions of villas researched so far were ca 500 m², while this complex was over 2,500 m²). It was a villa that was most probably the centre of a larger agricultural estate. According to the researchers, the rooms to the east and south of the central courtyard were rooms for the accommodation of the owner of the villa and his family, while the rooms to the west of the courtyard were intended for economic activities (Fig. 4, 5).⁵⁷ On the basis of a preliminary analysis of mobile finds, the villa can be dated to the period of the 2nd century.⁵⁸ The necropolis and another, smaller villa, discovered somewhat earlier, also belong to this period.⁵⁹ All the *villae rusticae* registered so far at *Viminacium* were mostly dated to the period of the 3rd and the 4th century,⁶⁰ thus, the villas discovered to the east of the city, at the site of Nad Klepečkom, represent the oldest buildings of this type registered in the area of the province of *Moesia Superior* and provide precious data for the future research of this topic.

Two finds of agricultural tools came from the site of Rit (No. 8, 9). The site of Rit is located to the north and north-east of the urban centre of the city and the legionary camp of *Viminacium* (Fig. 6). Rescue archaeological excavations at the site of Rit began in 2004, they were resumed in 2012 and continue today.⁶¹ On the basis of archaeological results obtained so far, the existence of two Antique roads was established in the vicinity of buildings with a residential character.

Four villas have been researched so far, of which three were located along the road from the northern gate of the legionary camp that, after about 400 m, went to north, and then turned towards the east, while one villa was located along the road which lead from the northern gate of the legionary camp to the east. Along this second road, a workshop complex with the remains of a workshop for dyeing and processing fabrics – *fullonica*

⁵⁶ Mrđić, Jovičić 2012, 50–53; Jovičić, Redžić 2014, 54–59; Redžić et al. 2014, 66–69; Milovanović et al. 2021, 101–114.

⁵⁷ Jovičić, Redžić 2014, 55.

⁵⁸ Jovičić, Redžić 2014, 59.

⁵⁹ Redžić, et al. 2014, 67–69.

⁶⁰ Jovičić, Redžić 2012.

⁶¹ Mikić et al. 2006, 21–26; Redžić et al. 2014, 66–69; Redžić, et al. 2017a, 77–86; Milovanović et al. 2017, 71–76; Milovanović et al. 2021, 101–114.

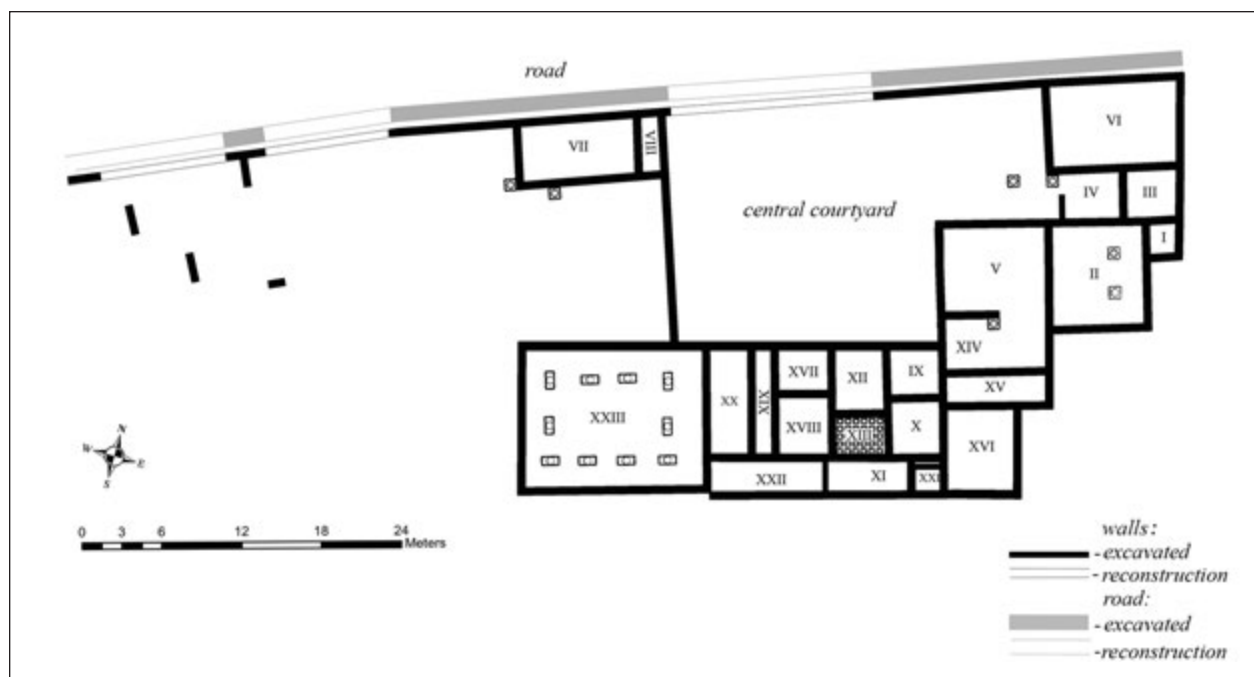


Fig. 4. Plan of the villa rustica No. 2 from the site Nad Klepečkom (after: Jovičić, Redžić 2014, 55, Sl. 2)

Fig. 5. Remains of the Roman villa during excavation, site Nad Klepečkom (after: Jovičić, Redžić 2014, 54, Sl. 3).

Сл. 4. План русџичне виле бр. 2, на локалџијеџу Наг Клеџечком (џрема: Јовиџић, Реџић 2014, 55, Сл. 2)

Сл. 5. Снимак остџајака римске виле џоком искоџавања, локалџијеџу Наг Клеџечком (џрема: Јовиџић, Реџић 2014, 54, Сл. 3)

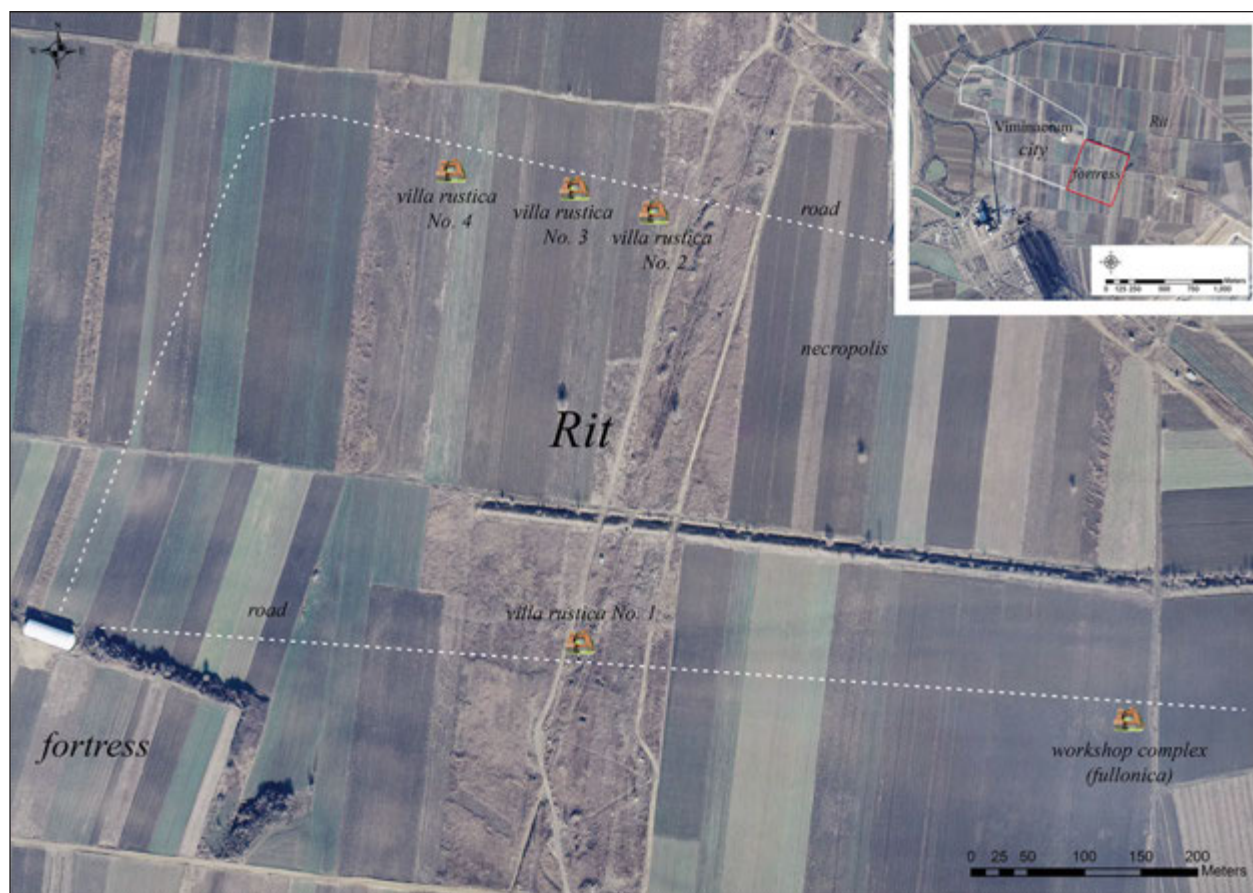


Fig. 6. Map of the site Rit with the location of excavated villas and necropolis (Doc. of the Institute of Archaeology, Belgrade, Project Viminacium)

Сл. 6. Карта локалитета Рит са локацијама ископаних вила и некрополе (Док. Археолошкој институцији у Београду, Viminacium пројекат)

was discovered (Fig. 7).⁶² On the basis of mobile finds and coins discovered inside the villas, and the dating of the necropolis that was formed accordingly (coins of Caracalla, Severus Alexander, Philip the Arab, Saloninus, Gallienus, Claudius Gothicus, Aurelianus and Probus), it was established that the villas at the site of Rit were inhabited during the 3rd century.⁶³ Archaeological excavations conducted so far indicate that life at the site of Rit ended during the last decades of the 3rd century, which was most probably the consequence of the failure of the drainage system. This area became very prone to flooding, turning into wetland filled with marshes, as confirmed by the modern toponym for this place.⁶⁴

Several finds of agricultural tools came from the territory of the southern necropolis (No. 4, 10–12, 14). During the several decades long rescue excavations, the area of the southern necropolis was subdivided into

several sites, which were termed “necropoles” in the older literature,⁶⁵ according to local toponyms: Više Grobalja, Pećine, Kod Grobalja, Burdelj, Velika Kapinja, Carine and Kod Bresta (Fig. 8).⁶⁶

⁶² Redžić, *et al.* 2017a, 80–83.

⁶³ Redžić, *et al.* 2017a, 78–84.

⁶⁴ Danković, Petaković 2013, 63. In Serbian, *Rit* is one of the terms for a swamp.

⁶⁵ On the necropoles of *Viminacium*, cf. Љ. Зотовић, Ч. Јордовић, *Viminacium I: некропола Више гробалја*, Београд 1991; М. Кораћ, С. Голубовић, *Viminacium: Više Grobalja 2*, Београд 2009; М. Кораћ, *Stikarstvo grobnica u Viminacijumu*, Поžаревац 2000.

⁶⁶ Since the previously used term of “necropoles” for each of the areas of the southern necropolis could cause confusion, it was decided that all the aforementioned sites belong to the southern necropolis of *Viminacium* (according to the oral communication of one of the researchers, Dr Snežana Golubović).



Fig. 7. Workshop complex at the site Rit. Orthogonal projection of a 3D model
(after: Redžić et al. 2017a, 80, Sl. 3)

Сл. 7. Радионички комплекс на локалитету Рит. Ортогoнална пројекција 3D модела
(према: Redžić et al. 2017a, 80, Sl. 3)

The necropolis at the site of Pećine, which is located to the south-west of the civilian settlement, is relatively well-known in scientific literature, and archaeological research on it has lasted, with some long and short breaks, for over a century. The first steps in the research of this necropolis were taken by Mihajlo Valtrović at the end of the 19th century, when he registered the existence of a necropolis in this area.⁶⁷ In 1970s, within the preparations for the building of the thermal power plant “Kostolac B”, intensive rescue excavations began on the site, lasting all the way until 1990. During the mentioned period, ca 7,000 graves were researched at the site of Pećine, dated to the period from the 1st to the 4th century,⁶⁸ but also one necropolis dated to the second half of the 4th century and the beginning of the 3rd century BC, the La Tène period,⁶⁹ one Early Medieval (9th century), and one Late Medieval (12th to 14th century).⁷⁰ Aside from the units of a funereal character, workshop activities were also registered on the site, confirmed by the discovery of eleven brick and fourteen pottery kilns.⁷¹

In the period from 2015 to 2019, new research activities of the necropolis at the site of Pećine were performed and, on this occasion, a part of the necropolis was discovered that had been unknown until then, which can be determined, according to the finds, as Late Antique.⁷²

CONCLUSION

The favourable geographical micro-region in the extremely mild and fertile valley of Stig, in which *Viminacium* was located, represented a suitable location for agricultural production. Judging by the scope of the city ager, it is clear that the inhabitants of rural areas beyond

⁶⁷ Korać, Mikić 2014, 12.

⁶⁸ Golubović 2004, 10–11, 14.

⁶⁹ Jovanović 2018, 204.

⁷⁰ Спасић 1990, 157–175.

⁷¹ Јордовић 1994, 95–105.

⁷² Jovičić et al. 2017, 56–61; Redžić et al. 2018, 79–90.

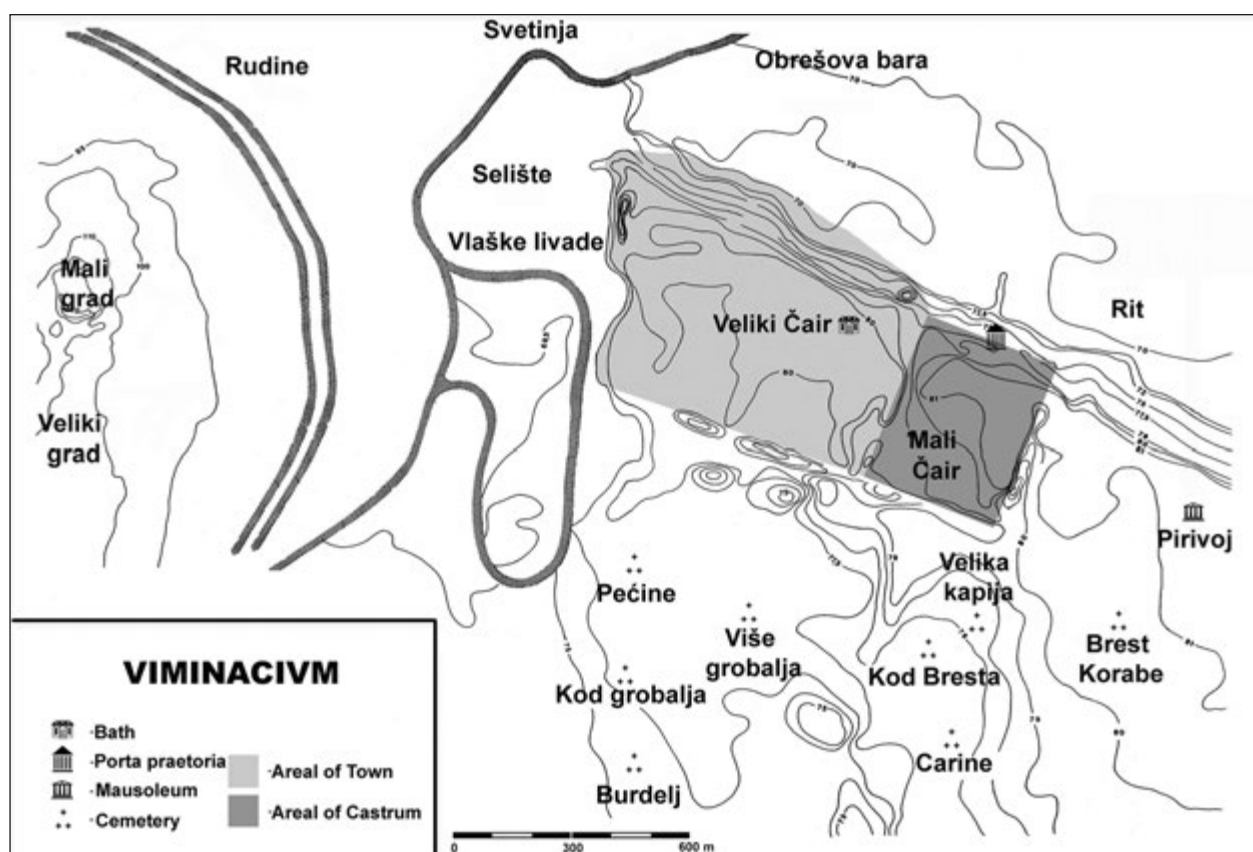


Fig. 8. Plan of Southern Necropolis at Viminacium
 (Doc. of the Institute of Archaeology, Belgrade, Project Viminacium)

Сл. 8. План јужне некрополе у Виминацијуму
 (Док. Археолошкој инстџиуиуија у Београду, Viminacium пројекат)

the city borders represented the majority of the population of *Viminacium*. The city, however, having the role of the main marketplace, depended on its rural area. Finds of agricultural tools that we present in this paper, although small in number, are the most reliable indicators of agricultural activities in the period from the 2nd to the 4th century, when *Viminacium* went through its period of greatest prosperity.

Even though we are still far from having a complete overview of the actual scope and structure of the *ager* of *Viminacium*, more recent research of the wider city territory does shed new light on agricultural activities and the importance of the rural economy in supplying provisions for the city population during the Roman period. Aside from the development and improvement of tools intended for the cultivation of cereals, more information on the development of farming activities in the wider city territory of *Viminacium* is also provided by the results of archaeobotanical anal-

yses performed within archaeological research in the last few years.⁷³

The first analyses have shown that the area around *Viminacium* was very suitable for plant economy. Even though the main goal of these archaeobotanical analyses was to show which type of timber had been used for the construction of the amphitheatre, the analysis provided data on the presence of cereals and weeds as well. The results showed the presence of five cereals (loose six-row barley, rye, bread wheat, oats and broomcorn millet) and one cultivated pulse crop, lentil. Three fruit species were identified: woodland strawberries (*Fragaria vesca*), hazel (*Corylus avellana*) and common fig (*Ficus carica*). The list of weeds includes 25 plant names.⁷⁴ All of these plants, with the exception

⁷³ Medović 2014, 95–99.

⁷⁴ Medović 2014, 97, T.1.

of millet, can be seen even today in the ploughland of the valley of Stig. This ancient crop was suppressed, over just a few centuries, by maize and, thus, virtually vanished from ploughlands. These types of analyses have a special importance, for they can show if there had been any changes in the regional vegetation, which, in turn, could point to a continuity or discontinuity in the settling and usage of a given area.

Unfortunately, we cannot provide, for the time being, a precise answer to the question regarding how the mentioned cereals were cultivated in *Viminacium*. In the wider territory of *Viminacium*, there were no ploughing implements found, ploughs, or any transitional more complex forms of ploughing devices that have been found were in the fortifications along the Iron Gates section of the Roman limes, in Mačva or Srem.⁷⁵ We can only assume, bearing in mind the similar pedological and climatic conditions in these regions, that similar forms of ploughing devices and similar methods of their application in agriculture were used in the territory of *Viminacium* as well.

As we have mentioned before, the fertile valley of Stig, where *Viminacium* is located, represents an ideal place for farming and creating agricultural estates of the *villae rusticae* type. One of the two villas at the site of Nad Klepečkom, which is located to the east of the urban core of the city and the *castrum*, represents the largest complex of this type discovered so far, not only in *Viminacium*, but also in the wider territory of the Central Balkans. It was built on a slope of the hill of Nosak and indicates, with its impressive dimensions, that it was the centre of a larger agricultural estate (the surface of the complex is over 2500 m²). In addition to villas, a rural settlement consisting of a large number of buildings was found at the same site. The character of the settlement was certainly of a mixed type, but it could be divided, generally speaking, into at least two units. The first is the one closer to the city, where buildings of large dimensions dominate. Those were most probably warehouses, with some of them having been used perhaps as workshops as well. The other unit in the east could have had a residential function.

Aside from the *villa rustica* at the site Nad Klepečkom, agricultural tools registered in the wider territory of *Viminacium* come from another villa, from the site of Rit, which is located to the north-east of the urban core of the city, which represented not only a residential, but also a production and crafts centre, as was also witnessed by the discovery of a workshop for dyeing and processing – *fullonica*.

Most of the *villae rusticae* registered so far from the area of Roman provinces in the territory of the Central Balkans have been dated into the Late Antique period,⁷⁶ hence, the villas built at the site of Nad Klepečkom, which are chronologically determined into the 2nd century on the basis of finds, represent the oldest buildings of this type. The appearance of such large complexes of villas at *Viminacium* indicate that with the establishment of Roman government in conquered areas, especially those in the area of the Roman limes at the Danube, a rapid Romanisation of those conquered territories took place. The settling of Roman veterans occurred in the wider territory of Roman cities and military fortifications, but colonists from Italy and merchants from the East also came to be settled here. According to epigraphic data, the largest number of veterans from the Upper Moesian legions *IV Flavia* and *VII Claudia* remained in settlements near the encampments of *Singidunum* and *Viminacium*.⁷⁷ The oldest veteran monuments from the territory of *Viminacium*, which belong to legion *VII Claudia*, come from the first half of the 2nd century.⁷⁸ Aside from this, in the epigraphic documentation preserved so far we encounter higher ranks of the urban population which comprehended, in the first period, settled Roman citizens, who were later joined by Romanised members of the local population as well.⁷⁹ This oldest category of colonists obtained large properties, where spacious villas dominated, as residential-economic complexes. We assume that the owner of the large villa built on the slope of the hill of Nosak, at the site of Nad Klepečkom, could have been one such settler from higher social ranks, considering the size of the object, but also the fact that the walls of the villa were decorated with fresco paintings, and the rooms heated with a system of floor and wall heating.⁸⁰ A similar situation can be seen in the neighbouring territories of the Balkan Peninsula as well, first and foremost in Bulgaria, where a considerable number of finds of agricultural tools (pickaxes, mattocks, spades, pruning hooks, sickles, etc.) was found in villas from the areas of Roman cities and fortifications on the Lower Danube Limes: *Ratiaria*, *Abritus*, *Novae*, *Iatrus*, and *Castra Martis*.⁸¹

⁷⁵ Поповић 1986, 73–86.

⁷⁶ Васић 1985, 124–141.

⁷⁷ Ферјанчић 2002, 154–165.

⁷⁸ Ферјанчић 2002, 161, кат. 357–359.

⁷⁹ Мирковић 1981, 81–83.

⁸⁰ Јовић, Redžić 2014, 55–59, sl. 4.

⁸¹ Динчев Чолаков 2010.

In Romania, in the region of Transylvania, which was a part of the Roman province of Dacia, agricultural tools were found in a number of villas explored so far, including ploughshares, sickles and other specifically agricultural artefacts such as millstones (Hobița-Hobeni hill, Aiudul de Sus, Deva 1, Hobița-Delinești hill 2, and Cinciș). Chronologically, the mentioned sites belong to the 2nd and 3rd century, which covers the range of Roman rule in that region.⁸²

When it comes to Bosnia and Herzegovina, most finds also come from agricultural estates – *villae rusticae*, some of which represented large production-craft centres. Roman villas on the sites of Višići, Panik, Tutnjevaca, Brodac, Proboj, Strupnić, Mogorjelo, Tišina, Ljusina, and Založje were areas of agricultural activities, the cultivation of cereals, grapevines, olives, etc.⁸³ They were also the areas in which new agro-technical measures were introduced by the Roman government. The large number of agricultural tools, shovels, spades, mattocks, hoes, two-pronged hoes, pickaxes, hatchets, ploughs, coulter, sickles, scythes, and hooks, show that agricultural production had a significant role in the period of the Roman domination in the territory of today's Bosnia and Herzegovina.

Aside from most of the finds presented in the catalogue, which originate from Roman agricultural estates, three agricultural tools were also registered at *Viminacium* (two hooks and a sickle), which come from the area of the southern necropolis at the site of Pećine. One hook and the sickle come from a waste pit, while the other hook was found in the area of the necropolis outside of a grave space. Their find locations provide possibilities of different interpretations. One of the possible assumptions could be their use keep the graves in order, i.e. to take care of the vegetation there, since Roman cemeteries were well managed and taking care of the dead was common in the Roman Empire, bearing in mind the great importance of the cult of the dead that existed in Rome.⁸⁴ Rescue excavations at *Viminacium* performed in the past few years have contributed in a significant manner to gaining new knowledge on the suburban zones of the Antique *Viminacium* and life in this area. We believe that veterans, colonists and merchants from the East, whose inflow to *Viminacium* began from the 2nd century, settled in the periphery of the city, as shown by numerous villas discovered in the last few years. Results obtained are certainly not final, but they do enable a more precise overview of the wider territory of *Viminacium*, providing precious information for studying this topic in the future.

CATALOGUE

1. *Viminacium*, Nad Klepečkom site (Pl. I/1)

Roman *villa rustica*
Documentation Centre Viminacium (C 1667)
object 42, room VII
trench 83, depth 0.70 m
length 15.7 cm
iron, forging
dating 2nd century

The pickaxe was discovered within a large agricultural property at the site of Nad Klepečkom, in room VII, to the west of the central courtyard.⁸⁵ (Fig. 4) It is trapezoidal in shape and arched, while the axe has a slightly arched cutting edge. The head is composed of two uneven length spikes, arranged in opposite directions. The insertion hole for the handle is circular. The example from *Viminacium* belongs to type A/a, according to the typology by I. Popović.⁸⁶

A large number of mobile finds was discovered in the object, on the basis of which the pickaxe was dated: oil-lamps with volutes and an angled nozzle, with volutes and a rounded nozzle, as well as a certain number of oil-lamps with short, rounded nozzles, dated to the 1st–2nd century.⁸⁷ Aside from these, the chronologically sensitive material found also included fibulae with a button-shaped knob and with a hinge, similar to the *aucissa* fibulas, dated to the 2nd century.⁸⁸ Bronze coins of Hadrian also date this item into the 2nd century.

Unpublished.

⁸² Oltean, Hanson 2007, 122–123.

⁸³ Busuladžić 2014, 137–144.

⁸⁴ On Roman funerary customs and the cult of the dead cf. J. Bodel, Dealing with the dead in ancient Rome, in: *Death and disease in the ancient city*, (eds.) V. M. Hope, E. Marshall, London – New York 2000, 128–151; *Idem.*, The Life and Death of Ancient Roman Cemeteries: Living with the Dead in Imperial Rome, *Reconstruction and the Historic City: Rome and Abroad – an interdisciplinary approach*, (eds.) Ch. Häuber, F.X. Schütz, G. M. Winder, München 2014, 177–195. We would like to take this occasion to thank Dr Gordana Jeremić, senior research associate at the Institute of Archaeology, for the useful information regarding the maintenance of necropolises and the cult of the dead in the Roman Empire.

⁸⁵ Jovičić, Redžić 2014, 58, sl. 2.

⁸⁶ Popović 1988, 59.

⁸⁷ Korać 2018, 19–85; 121–153; 185–295.

⁸⁸ Redžić 2007, 13–14.

2. *Viminacium*, Nad Klepečkom site (Pl. I/2; V/1)

Roman *villa rustica*

Documentation Centre Viminacium (C 1673)

object 42, room V

trench 84, depth 0.90 m

length 19.7 cm

iron, forging

dating 2nd century

The mattock has a narrow cutting edge, widened at the end, with an elongated eyelet for inserting the handle. The mattock was found in room V, to the east of the central courtyard (Fig. 4).⁸⁹ This room was connected to room XIV, in which the previously mentioned hoard of 44 lamps, dated to the period of the 2nd century, was found.⁹⁰

Unpublished.

3. *Viminacium*, Nad Klepečkom site (Pl. I/3; V/2)

Roman rural settlement

Documentation Centre Viminacium (C 1141)

object 30

trench 54, depth 0.80 m

length 23.5 cm

iron, forging

dating 2nd century

The iron mattock has a flared fan-shaped cutting edge and a circular hole for the handle. The example from *Viminacium* belongs to type B/b, according to the typology by I. Popović.⁹¹ It was found in a layer in object 30 (Fig. 3), which was most probably a part of the residential complex at the site of Nad Klepečkom.⁹² Coins by Augustus and Antoninus Pius, an oil-lamp with volutes and a rounded nozzle, and an oil-lamp with a short, rounded nozzle were also found in the same building, dating this item to the period of the 1st–2nd century.⁹³

Unpublished.

4. *Viminacium*, Burdelj site (Pl. II/1; V/3)

Objects 1 and 2

Documentation Centre Viminacium (C 27)

trench 5, depth 0.60 m

length 32 cm

iron, forging

dating 4th century

The spade was found in a layer under the roof debris, in the area between the Late Antique buildings, determined as Objects 1 and 2 in the archaeological documentation. The spade had a trapezoidal cutting

edge, with an implement, profiled in the shape of the letter “U”. According to the typology by I. Popović, it belongs to type A/b.⁹⁴

Coins of Constantine II Caesar, Constantius Gallus and Constantius II were found in the same level, which could chronologically determine this finding to the middle of the 4th century.⁹⁵

Unpublished.

5. *Viminacium*, Nad Klepečkom site (Pl. II/2; V/4)

Roman rural settlement

Documentation Centre Viminacium (C 884)

object 22, room I

control trench 22, trap hole, 2.20 m

length 37 cm

iron, forging

dating 3rd century

An iron drag hoe with four partially preserved prongs and a circular hole in the middle for inserting the handle. The drag hoe was found inside object 22 within the settlement at the site of Nad Klepečkom (Fig. 3), which could have represented a craft building.⁹⁶ It was in a regularly dug trap hole with sealed edges, which was dug into the floor of the building. It was discovered in the same object as a hoard of iron tools (pickaxe, file, meat chopper, and axe?). According to finds of fibulas from the layer,⁹⁷ as well as the coins of Florian, this item was dated to the period from the middle up to the second half of the 3rd century.

Unpublished.

6. *Viminacium*, Nad Klepečkom site (Pl. III/2; V/5)

Roman rural settlement

Documentation Centre Viminacium (C 735)

object 18

trench 49, dug-out 2, depth 1.30 m

length 15.6 cm

⁸⁹ Jovičić, Redžić 2014, 58, sl. 2.

⁹⁰ Korać 2018, 19–85; 121–153; 185–295.

⁹¹ Popović 1988, 37.

⁹² Mrdić, Jovičić 2012, 53, sl. 2.

⁹³ Korać 2018, 121–153; 185–295.

⁹⁴ Popović 1988, 34, T. I/2.

⁹⁵ Documentation of the Institute of Archaeology in Belgrade.

⁹⁶ Mrdić, Jovičić 2012, 51.

⁹⁷ Redžić 2007, 29–31.

iron, forging
dating 2nd–3rd century

The pruning hook consists of a wide cutting edge, arched at the end, with a tang for insertion into a wooden handle. The tang is bent into the shape of a loop. The tool was found in a pit, in front of two bread ovens, which was filled in with cultural material at a later point. These ovens with the pit damaged a wall of object 18, possibly a *horem* (Fig. 3).⁹⁸

Fragments of ceramic material registered in object 18 are dated to the period from the middle of the 2nd up to the middle of the 3rd century.⁹⁹ The most recent coins discovered were those of Elagabalus, with Artemis of Ephesus on the reverse.

Unpublished.

7. *Viminacium*, Nad Klepečkom site

Roman rural settlement
Documentation Centre Viminacium (C 721)
object 18
trench 49, dug-out 2, depth 0.95 m
length 13.5 cm
iron, forging
dating 2nd–3rd century

A fragment of an iron pruning hook. The find was discovered in the same object as the previous pruning hook. On the basis of an analysis of ceramic material, as well as the find of coins discovered within object 18, it is dated to the period from the middle of the 2nd up to the middle of the 3rd century.¹⁰⁰ As this specimen is rather damaged, it was impossible to distinguish its type precisely.

8. *Viminacium*, Rit site (Pl. IV/3; V/6)

Roman *villa rustica* – workshop complex
Documentation Centre Viminacium (C 1273)
ditch in front of object 5
trench 26 m, depth 0.70 m
length 26.7 cm
iron, forging
dating 3rd century

A pruning hook with a semi-circular cutting edge and a triangular cross-section, bent almost at a right angle in the upper part. The lower part of the cutting edge turns into an insertion tang. The tip of the cutting edge is partially damaged. The pruning hook was found in the debris with which a ditch was filled, located in front of economic buildings 4 and 5 (Fig. 7). In the cultural layer of these objects, a large number of fragments of ceramic vessels and other archaeological material was

discovered.¹⁰¹ Numerous examples of bronze coins were found in the same level (Gordian III, Gallienus, Claudius II Gothicus, Aurelian and Probus), which date the pruning hook to the second half of the 3rd century.
Unpublished.

9. *Viminacium*, Rit site

Roman *villa rustica* – workshop complex
Documentation Centre Viminacium (C 1314)
object 5
trench 26, depth 0.55 m
length 15.1 cm
iron, forging
dating 3rd century

Fragmented pruning hook discovered in the southern annex of object 5 within the *villa* complex at the site of Rit (Fig. 7). Among the numerous pieces of archaeological material found in this layer, there were also four fragmented querns.¹⁰² Bronze coins discovered within object 5 (Gordian III, Gallienus, Claudius II Gothicus, Aurelian and Probus) chronologically determine this tool to the second half of the 3rd century, the same as the previous example.

10. *Viminacium*, Kod Bresta site (Pl. III/1)

area of the necropolis
National Museum, Požarevac (C 90)
depth 1 m
length 16.8 cm
iron, forging
dating 3rd century

A pruning hook with an arched cutting edge and a tang, ending in the shape of a loop. Partially fragmented. It was found in a layer with a ceramic oil-lamp with volutes and an angled nozzle, dated to the period from the 1st up to the beginning of the 3rd century at *Viminacium*.¹⁰³

Unpublished.

⁹⁸ Mrdić, Jovičić 2012.

⁹⁹ Raičković Savić, Mitić 2021, 243.

¹⁰⁰ Raičković Savić, Mitić 2021, 243.

¹⁰¹ Redžić *et al.* 2017a, 82.

¹⁰² Jovičić 2019, Br. 26, 27, 61, 178.

¹⁰³ Korać 2018, 30; For more details about the excavation at Kod Bresta site see: Redžić *et al.* 2017b.

¹⁰⁴ Jovičić, Redžić 2014, 58, sl. 2.

¹⁰⁵ Korać 2018, 19–85; 121–153; 185–295.

¹⁰⁶ Redžić 2007, 13, T. I/1.

¹⁰⁷ Korać 2018, 439.

11. Viminacium, Pećine site (Pl. III/3)

area of the necropolis
National Museum, Požarevac (C 12500)
quadrant XXIV,
surface layer in the area of the necropolis, depth
0.30 m
length 15.3 cm
dating 2nd–4th century

This example of a pruning hook had an arched cutting edge, partially damaged. The tang, used for insertion into a handle, has a rectangular cross-section. In the wider area of this part of the necropolis, graves were found of cremated deceased individuals from the 2nd century, and inhumed deceased individuals buried in constructions made of bricks from the 3rd–4th century. It is difficult to provide a more precise dating for the find; it was discovered at a small depth, and there was no material registered nearby that would provide a chronological determination for the tool.

Unpublished.

12. Viminacium, Pećine site (Pl. IV/2)

area of the necropolis
Documentation Centre Viminacium (C 12782)
quadrant XVIII
waste pit, depth 1.0 m
length 11.5 cm
iron, forging
dating 2nd–4th century (?)

A fragmented pruning hook with a cutting edge in the shape of a semi-ellipse, and part of the implement preserved, used for insertion into a wooden handle. It is hard to provide a more precise dating for the tool. The field documentation does mention fragments of amphorae in the dug-out and bowls, without any detailed description. In the wider area, there were graves discovered of cremated individuals from the 2nd and inhumed deceased individuals buried in constructions made of bricks from the 3rd–4th century. What is typical for this tool is the fact that it has smaller dimensions

compared to other similar tools, hence, the question remains as to whether was used in agriculture.

Unpublished.

13. Viminacium, Nad Klepečkom site (Pl. IV/4)

Roman *villa rustica*
Documentation Centre Viminacium (C 1768)
object 42, room XX
trench 84, depth 1.40 m
length 28 cm
iron, mintage
dating 2nd century

A sickle with an arched cutting edge, and a rectangular cross-section, for insertion into a wooden handle. The cutting edge turns into a tang at an obtuse angle.

The sickle was found in room XX of object 42 of the *villa rustica* (Fig. 4).¹⁰⁴ Alongside this tool, archaeological material was found that enables more precise dating, such as coins of Hadrian and a large number of oil-lamps with volutes and an angled nozzle, with volutes and a rounded nozzle, and oil-lamps with a short, rounded nozzle, which are dated into the 1st–2nd century.¹⁰⁵

Unpublished.

14. Viminacium, Pećine site (Pl. IV/1)

area of the necropolis
Documentation Centre Viminacium (C 3574)
waste pit
trench 234, depth 1.70 m
length 30 cm
dating 1st–2nd century

A fragmented sickle with a semi-circular cutting edge, with only a small part of the tool preserved, used for insertion into a wooden handle. Coins of Vespasian were found in the pit, as well as an *aucissa* fibula,¹⁰⁶ and a type of oil-lamp with the stamp of *Strobili*, which are dated, at *Viminacium*, to the period from Nero up to Hadrian.¹⁰⁷

Unpublished.

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Резиме: ОЛИВЕРА ИЛИЋ, Археолошки институт, Београд
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РИМСКО ПОЉОПРИВРЕДНО ОРУЂЕ У АГЕРУ ВИМИНАЦИЈУМА

Кључне речи. – римско пољопривредно оруђе, *villae rusticae*, агер Виминацијума

Северни делови римске провинције Горње Мезије у којој је био смештен Виминацијум, главни град провинције, припадали су широј географској области средњег и доњег Подунавља. Повољни географски и климатски услови плодне равнице Стиг, која се налази у источној Србији, у доњем току реке Млаве, представљали су идеално место за пољопривредне активности забележене још од праисторијског периода па све до средњег века. У периоду римске доминације, окакве природне погодности утицале су на формирање знатног броја пољопривредних имања типа *villae rusticae*, о чему сведоче открића у субурбаној зони Виминацијума последњих година. Једна од две виле на локалитету Над Клепечком, који лежи источно од урбаног језгра града и легијског логора, представља до сада највећи комплекс овог типа не само у Виминацијуму већ и на широј територији централног Балкана. Поред ове две виле, регистровано је и рурално насеље са великим бројем објеката. Карактер насеља био је мешовит и на основу прелиминарних резултата истраживања могао би се поделити у најмање две целине. У делу ближе градском језгру доминирају објекти већих димензија, који су највероватније представљали складишта, од којих су поједина могла служити и као радионице. Друга целина источно могла је имати стамбену функцију. Највећи број пољопривредних алатки до сада откривених на широј територији Виминацијума потиче управо са овог локалитета.

Поред пољопривредног оруђа које потиче са локалитета Над Клепечком, налази оруђа регистровани су и на локалитету Рит, који се простире североисточно од урбаног дела града. На овом локалитету до сада су регистроване четири

рустичне виле. Поред стамбеног комплекса, откривени су и делови занатског центра, о чему сведочи и откриће радионице за бојење и обраду тканина – *fullonica*.

Пољопривредно оруђе евидентирано на широј територији Виминацијума можемо груписати према њиховој примени у пољопривредним радовима на: алатке за крчење и припрему земљишта за култивацију (секира-крамп, будак, мотика), алатке за копање земље и припрему за садњу (ашов, грабуље), алатке које су коришћене за кошење, жетву, сечење и поткресивање биљака (косир, срп).

Потврду о развијеној пољопривредној активности у агеру Виминацијума пружају и резултати археоботаничких анализа. Различите житарице које су биле узгајане у римском периоду (јечам, раж, пшеница, зоб, просо) потврђују претпоставку о интензивној пољопривредној активности у периоду од 2. до почетка 4. века, када је забележен период највећег економског просперитета римског града.

Заштитна ископавања на Виминацијуму последњих година умногоме су допринела новим сазнањима о субурбаним зонама града и живота на овом простору. Већина до сада евидентираних вила са простора римских провинција на територији централног Балкана датована је у касноантички период, тако да виле подигнуте на локалитету Над Клепечком, које се на основу покретних налаза хронолошки опредељују у 2. век, представљају најстарије објекте овог типа. Резултати до којих су истраживачи дошли свакако нису коначни, али омогућавају прецизније сагледавање агера Виминацијума, пружајући драгоцене податке за изучавање ове теме у будућности.

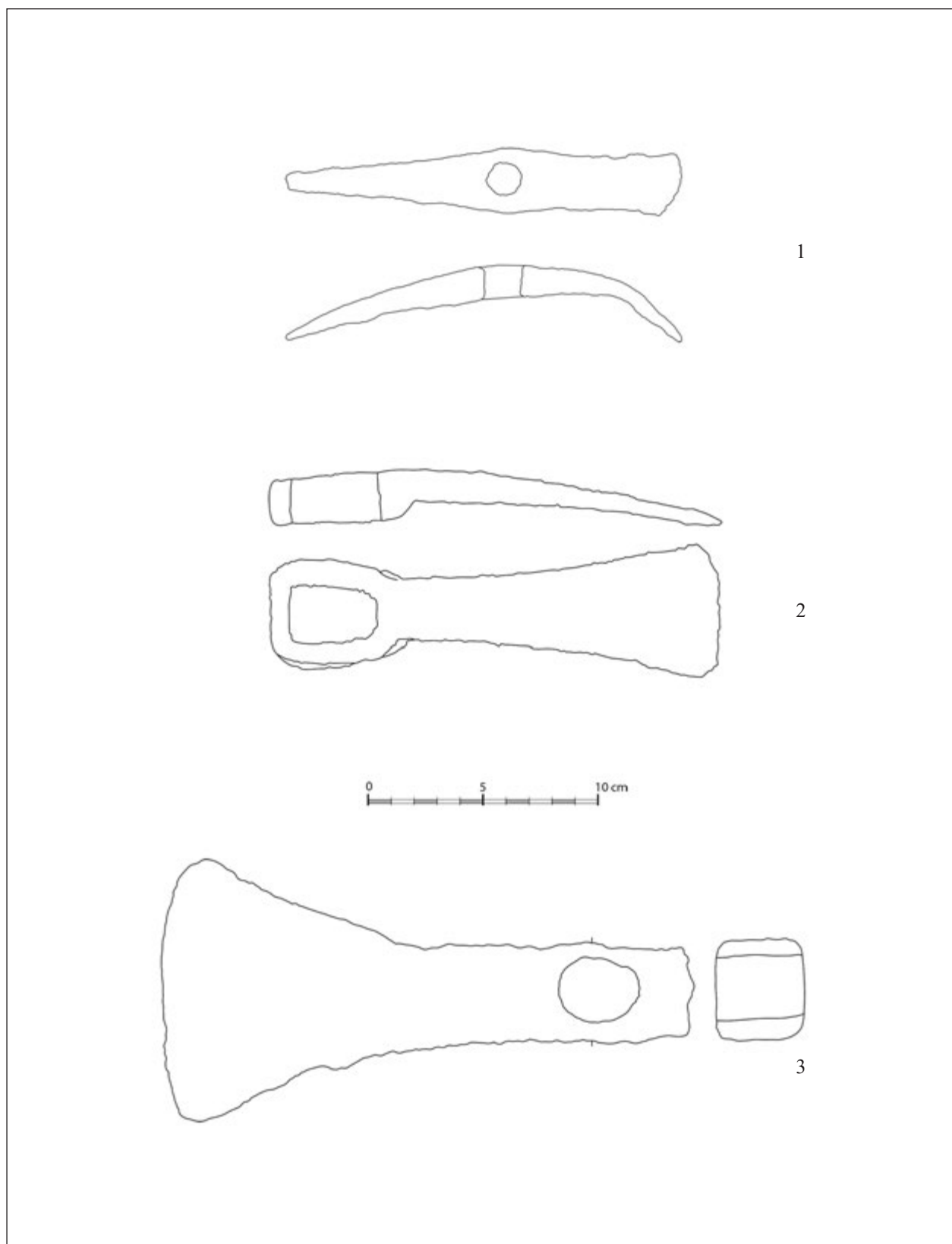


Plate I – Agricultural tools, site: Nad Klepečkom (1–3)

Табла I – Пољопривредно оруђе, локалности: Над Клејечком (1–3)

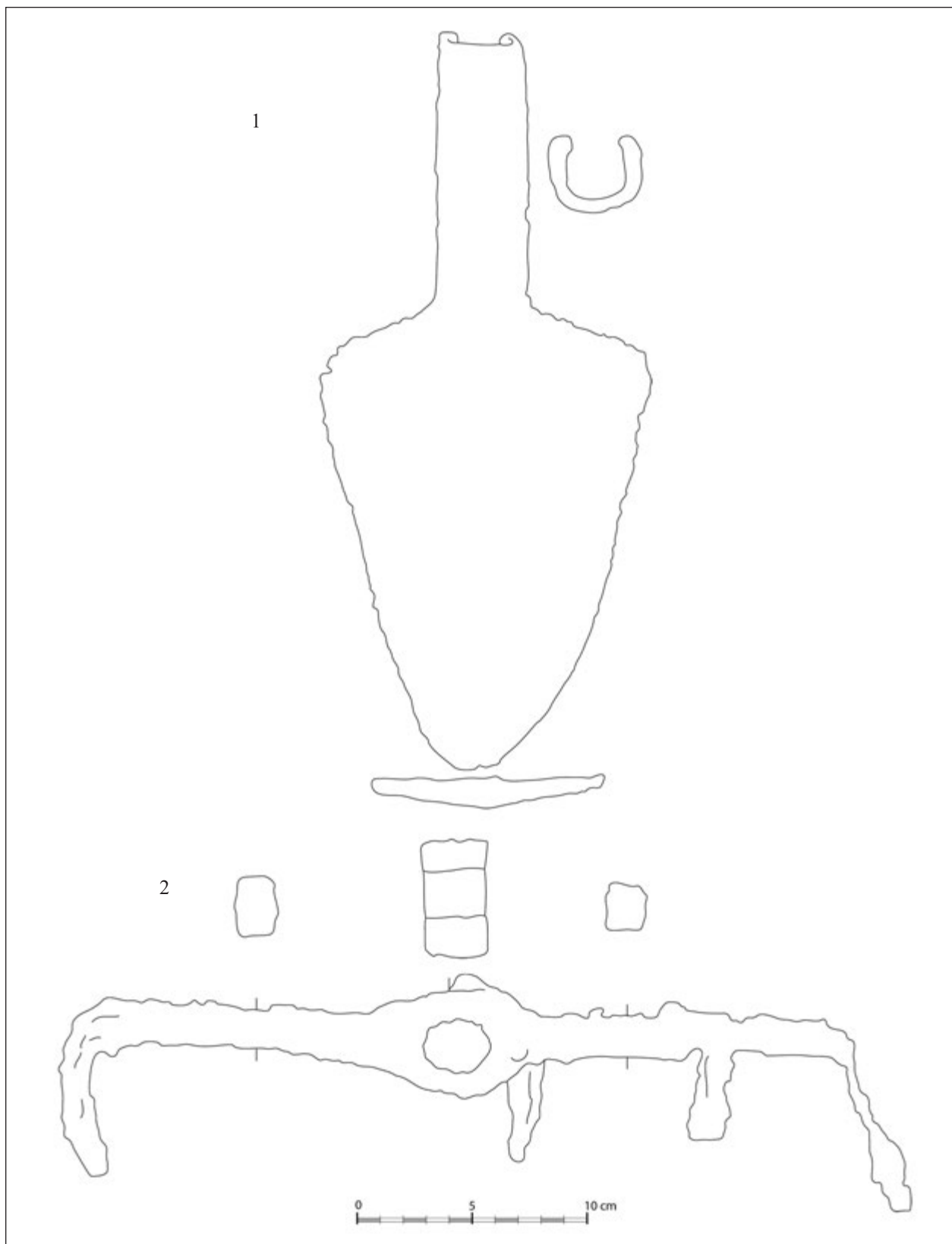


Plate II – Agricultural tools, sites: Burdelj (1), Nad Klepečkom (2)

Табла II – Пољопривредно оруђе, локалитети: Бурдељ (1), Над Клејечком (2)

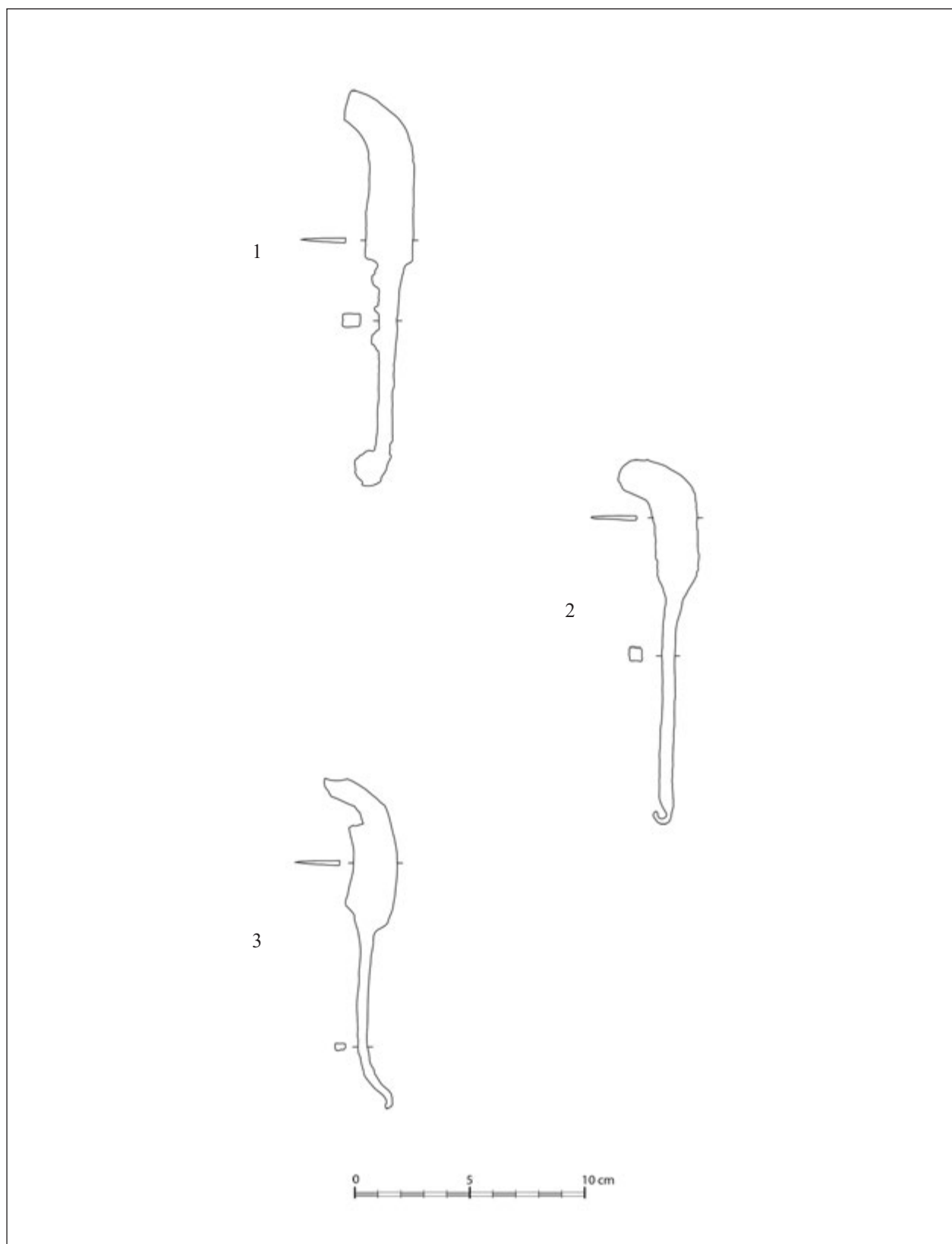


Plate III – Agricultural tools, sites: Kod Bresta (1), Nad Klepečkom (2), Pećine (3)

Табла III – Пољопривредно оруђе, локалитети: Код Брестца (1), Над Клејечком (2), Пећине (3)

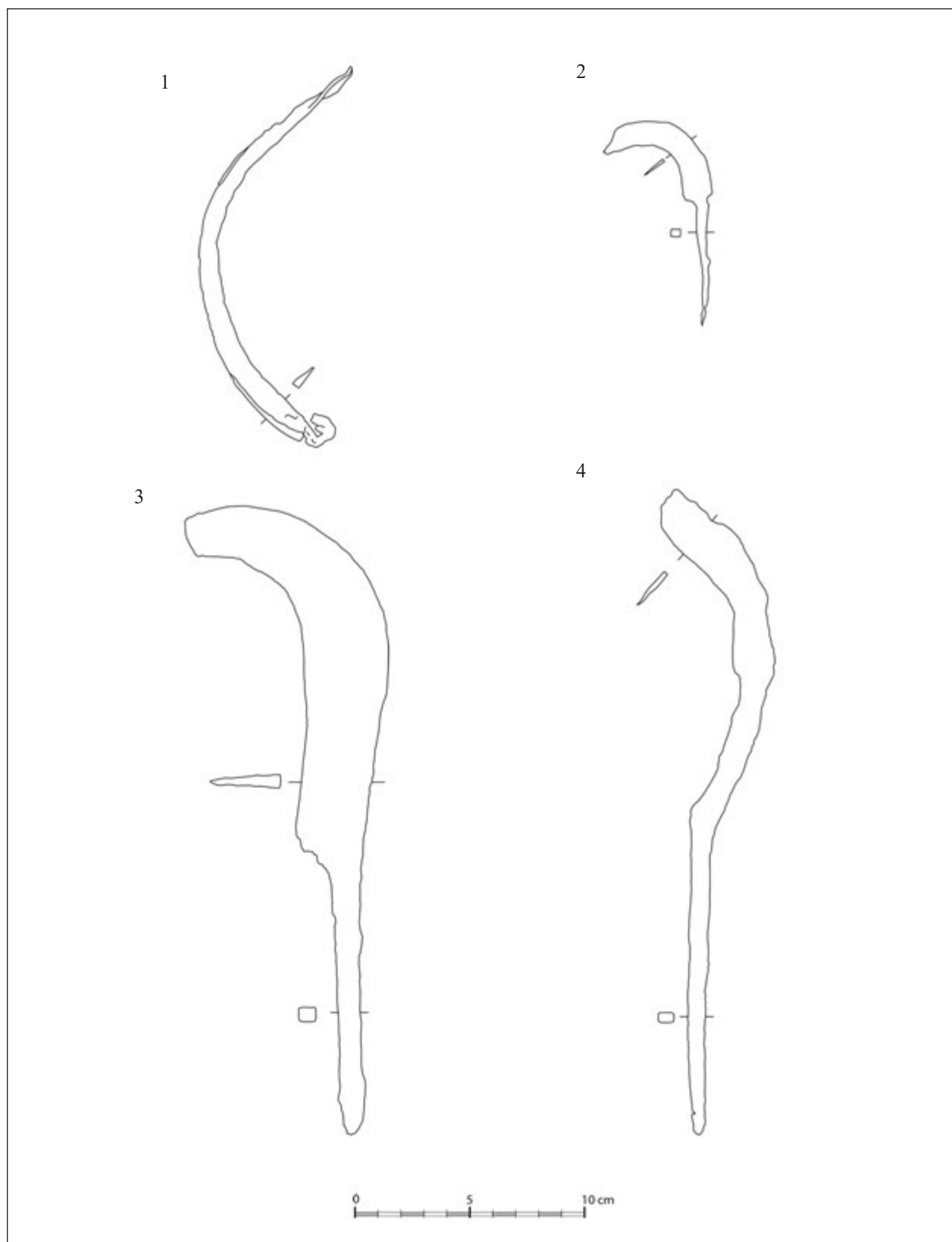


Plate IV – Agricultural tools, sites: Pećine (1–2), Rit (3), Nad Klepečkom (4)

Табла IV – Пољопривредно оруђе, локалитети: Пећине (1–2), Рит (3), Над Клејечком (4)



Plate V – Agricultural tools, sites: Nad Klepečkom (1–2), Burdelj (3), Nad Klepečkom (4–5), Rit (6)

Табла V – Пољопривредно оруђе, локалитети: Над Клејечком (1–2), Бурдeљ (3), Над Клејечком (4–5), Рит (6)