

## CENTRES OF THE LATE ROMAN MILITARY SUPPLY NETWORK IN THE BALKANS: A SURVEY OF *HORREA*

*Beatitudine d(omini) n(ostri) Constantis victoris | ac triumfatoris semper  
Aug(usti) | provisa copia quae horreis deerat | postea quam condendis  
horrea deesse coeperunt | haec Vulc(atius) Rufinus v(ir) c(larissimus)  
praef(ectus) praet(orio) per se coepta || in securitatem perpetem rei an-  
nonariae dedicavit*<sup>1</sup>

»In the happy times of our lord Constans, the victorious and triumphant eternal Augustus. While supplies were anticipated that were insufficient to fill the warehouses, eventually the warehouses started to be insufficient for the goods to be stored. The vir clarissimus Vulcatius Rufinus, Praetorian Prefect, dedicated these (warehouses), which were commissioned by him, for the perpetual security of the annona.«

This inscription celebrates the dedication of new depots for storing the supplies of the army at the Pannonian city of Savaria (Szombathely; Kom Vas/H) in A. D. 347-350<sup>2</sup>. It seems that, although Savaria already had warehouses, increased annony imports caused a storage crisis and the old facilities came to be insufficient. Thus the text provides a unique reflection of a moment in the development of the infrastructure of the *annona militaris* in a province of the European frontiers of the empire. The *securitas perpetua rei annonariae* was an important concern for the praetorian prefectures which managed this immense logistics system. In the frontier provinces, where large quantities of imported and locally produced military supplies were accumulated, there was an urgent need for *horrea*, and such buildings must have been a priority in the building agenda of the state and the army. The warehouses of Savaria have not been located by archaeology, but the inscription provides perhaps the most explicit testimony to the fact that the numerous late Roman public storehouses/granaries known from the Danube and the Rhine provinces are associated with the *annona*. Indeed, most of them were built and functioned in the period of the late Roman annony system's establishment and most intensive function – the tetrarchy and the 4<sup>th</sup> century. Their uniform architecture, which followed the early Roman building tradition of hangar-like military granaries, is also indicative of these buildings' connection to a central building policy designed to provide infrastructure for the military supply network<sup>3</sup>. Among the best-known late Roman *horrea* are those of Milan, Aquileia and Trier, and the more recently excavated Building XV at the fort of Housesteads – all ascribed to the period of the tetrarchy<sup>4</sup>.

<sup>1</sup> CIL III 4180; Tóth 2011, Cat. Nr 8. Translation by the author.

<sup>2</sup> PLRE 1 (1971), 782 (Rufinus 25).

<sup>3</sup> On military granaries of the imperial period in the West, see: Salido Domínguez 2011; Rickman 1971, 213-290.

<sup>4</sup> Aquileia (prov. Udine/I): Mirabella Roberti 1965. – Milan: A. Ceresa Mori in: Sena Chiesa 1990, 102 f. – Trier: Eiden/Mylius 1949; Luik 2001; Rickman 1971, 264-265. – Housesteads (Northumberland/GB): Crow 2004, 92-94. 98 f.; Rushworth 2009, 307-311.

They were oblong gable-roofed buildings divided into aisles by rows of pillars, with raised floors and strong walls, often buttressed<sup>5</sup>. Several centuries after the end of Antiquity, their architecture was revived in the late medieval tithe barns of northern Europe<sup>6</sup>.

As a permanent logistics network, the *annona militaris* entailed immense demands in both institutional and material infrastructure. Its bureaucratic organisation is amply documented in late Roman legislation and has been studied in considerable detail<sup>7</sup>. By contrast, its material traces and infrastructure have been studied only partially<sup>8</sup>. This article attempts to redress some of this imbalance through a survey of public granaries and warehouses (*horrea*) known from the Balkan provinces. Excavations since the 19<sup>th</sup> century have revealed several late antique public warehouses in these regions, which allow us to follow the infrastructure of the *annona* in remarkable detail. This rich architectural material can substantially promote our understanding of the supply network's functioning, development and transformations by the end of Antiquity, and its impact upon local economies and societies.

Here the examples are categorized chronologically and according to their settlement context. As we shall see, the vast majority dates from the late 3<sup>rd</sup> and 4<sup>th</sup> centuries, while those from the 5<sup>th</sup> and 6<sup>th</sup> centuries are much fewer. The large early group (late 3<sup>rd</sup> and 4<sup>th</sup> centuries) is discussed first, divided into three subcategories of settlement context (forts and small fortified settlements, villas and rural sites, and cities), while the few later examples are discussed in separate sections.

### **HORREA OF THE LATE 3<sup>RD</sup> AND EARLY 4<sup>TH</sup> CENTURIES IN MILITARY FORTS AND SMALL FORTIFIED SETTLEMENTS**

Several examples of military *horrea* come from forts of the Danube littoral where the *annona* was delivered from both the Mediterranean and the neighbouring provinces of Thrace and Illyricum. In the early Roman period, warehouses are known from forts and villas most of which were left in ruins after the 3<sup>rd</sup>-century crisis. The making of a new frontier on the Danube in the period between Aurelian and Constantine led to the restoration of many of the old defence centres and to the creation of several new ones. Tetrarchic and 4<sup>th</sup>-century *horrea* were found in a number of forts and settlements built or rebuilt during this period.

Capidava in Scythia Minor (jud. Constanța/RO; **fig. 29, 4**) was an important riparian fort on a bend of the Danube, which in Late Antiquity is attested as both a military and civil centre, listed among the legionary bases and cities of Scythia Minor. In the early 4<sup>th</sup> century, it received a circuit of very strong defences enclosing an area of about 1.5 ha. A three-aisled *horreum* was built against the south wall of this fortification (dimensions 16.25 × 32 × 18.75 m) (**fig. 1**). It was probably a granary, since it was equipped with a raised floor. It was rebuilt perhaps in the late 4<sup>th</sup> century, retaining its original use. There is no evidence for it falling out of use until the mid-6<sup>th</sup> century, when it was probably turned into a dwelling<sup>9</sup>.

<sup>5</sup> Rickman 1971, 213-250.

<sup>6</sup> Griswold 1999.

<sup>7</sup> General on the *annona militaris* in Late Antiquity: Mitthof 2001 (the most exhaustive monograph on the subject); van Berchem 1937; Carlà 2007; Carrié 1994; Jones 1964, 448-469; Karayanopoulos 1958, 94-112; Schmidt-Hofner 2008, 117-163; Kissel 1995; Rickman 1971, 264-290. – Local studies for Syria and Africa: Pollard 2000, 101-104; Pons Pujol 2008.

<sup>8</sup> On the built infrastructure of the *annona*: Rushworth 2009, 307f.; Fernández Ochoa/Morillo/Salido Domínguez 2011; Rickman 1971, 264-270; Whateley 2013. – On the ceramic evidence: Karagiorgou 2001; Konrad 1999; Swan 2007.

<sup>9</sup> Opreș 2003, 26-33. 229-231. Excavation reports by various teams working on the site (sector III of the Capidava excavations) from 1982-2012 can be consulted online at the website Archaeological Excavations in Romania, 1983 – 2012: Preliminary Archaeological Reports (<http://cronica.cimec.ro/>).

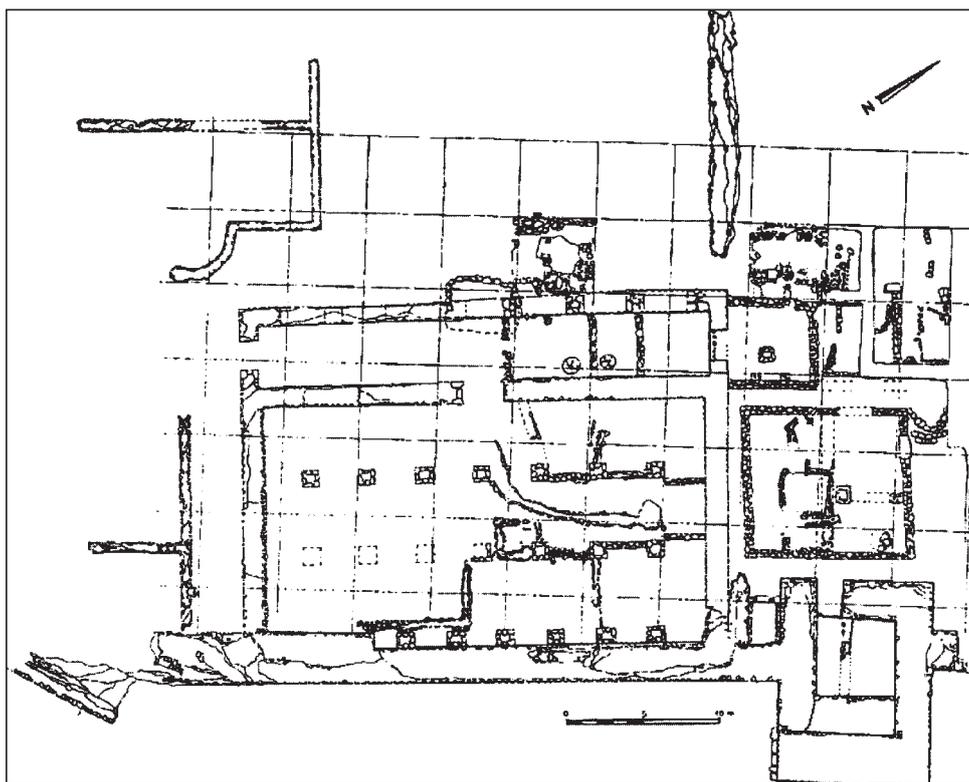


Fig. 1 Capidava (jud. Constanța/RO). Late Roman *horreum*. – (After Matei 2000).

Still in Scythia Minor, a probably 4<sup>th</sup>-century *horreum* was partially uncovered at the fort of Flaviana (Cetea Pătulului; jud. Constanța/RO)<sup>10</sup>.

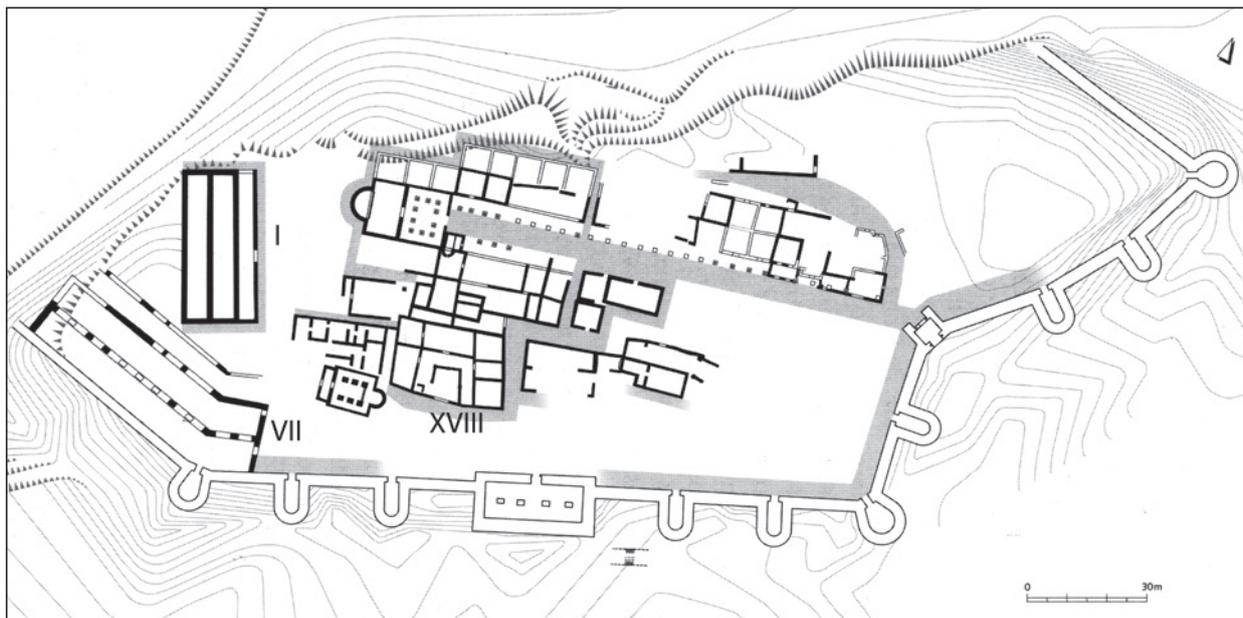
In the neighbouring province of Moesia Inferior, a warehouse was found in the northern part of the riparian fortress-city of Novae (near Svishtov; obl. Veliko Tarnovo/BG; fig. 29, 23). It was a simple, two-aisled building (13m × 33m), probably with a raised floor, but with relatively thin walls. On its south side, there was a room with hypocaust, interpreted by the excavators as a drying plant for grain. Built in the second quarter of the 4<sup>th</sup> century, it remained in use until the late years of the same century, when it was destroyed by fire and abandoned<sup>11</sup>. At least until the mid-5<sup>th</sup> century, Novae remained the base of the *Legio I Italica*, though, at the same time, it also acquired the status of a city. It was probably a recipient of *annona* supplies imported from the Mediterranean, which is also attested by inscriptions set up by *primipilarii* arriving from provinces of the Aegean and the Levant until A. D. 432<sup>12</sup>. At the same time, however, Novae must have been the gathering centre of supplies produced in the surrounding territory.

The neighbouring riparian fort of Iatrus (Krivina; obl. Ruse/BG; fig. 29, 11), some 10 km east of Novae, was built probably under Constantine, in order to host an element of the *Legio I Italica*. Warehouses have been located at it, but they belong to a secondary phase (the so-called period B), rather than to its original layout. Period B starts around A. D. 350, when the buildings of the original Constantinian fort started to decline and were gradually replaced by structures of a poorer nature. The only exceptions are two oblong two-aisled

<sup>10</sup> Zahariade 1996, 225.

<sup>11</sup> Dyczek 1997; 2002, 130-133.

<sup>12</sup> Sarnowski 2005; 2013; Łajtar 2013; Bresson/Drew-Bear/Zuckerman 1995; entries by U. Gehn in: LSA 1102-1103. 2445. 2590. 2596-2598 (Last Statues of Antiquity, online database at <http://laststatues.classics.ox.ac.uk>).



**Fig. 2** Iatrus (Krivina; obl. Ruse/BG). General plan of the fort in phase B/C. Buildings I and VII are seen on the left. The position of the later Building XVIII is indicated in the centre (for its plan see fig. 25). – (After von Bülow 2007).

buildings (Buildings I and VII), a bath, a peristyle complex (interpreted as the *principia* or praetorium) and a Christian basilica. All these buildings stood at the west end of the fortified area, behind the *principia* of the fort<sup>13</sup>. Buildings I and VII were most probably warehouses. Building I (14.90 m × 38.90 m, with 1.30-1.35 m thick walls) was two-aisled with a portico along its east façade, and stood immediately next to the bank of the Yantra, thus being readily accessible from the river. It replaced an oblong structure of similar dimensions from the original Constantinian phase (Building XLVI), the use of which is unclear, but it is very likely to have been also a *horreum*. Building VII was identical in plan, but larger and stood against the fortification walls, following an angle in the walls (20.80 m × 48.20 m + 13.30 m with 1.25 m thick walls). Its plan and size are strikingly similar to those of a *horreum* excavated within the Diocletianic fort of Palmyra. It has been suggested that Building VII included an upper floor with rooms for barracks (fig. 2)<sup>14</sup>. The buildings were probably built around A. D. 350, and may be related to a fragmentary building inscription with the names of the emperors Constantius II and Constans (co-emperors in 340-350). A coin of the same period (345-354) found in the foundation of Building VII served as *terminus post quem* for their dating. The two warehouses were destroyed and abandoned perhaps in the first decade of the 5<sup>th</sup> century<sup>15</sup>. Iatrus commanded the confluence of the river Yantra (ancient Iatrus) into the Danube, by which it was connected to the territory of Nicopolis ad Istrum. It was thus a point where the network delivering supplies from the Mediterranean through the Danube met the regional supply resources of the Danubian plain.

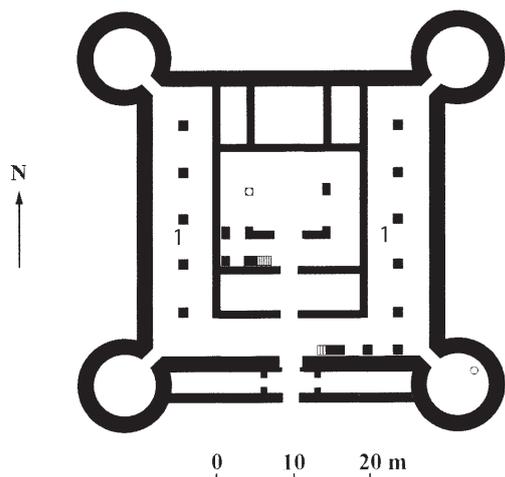
The importance of supply bases behind the riparian frontier line proper is also demonstrated by warehouses found at small fortifications in the interior areas like Storgosia in Moesia Inferior (Pleven/BG; fig. 29, 33). The site was a road-station under the Principate, but, in the late 3<sup>rd</sup> or early 4<sup>th</sup> century, it became a strong

<sup>13</sup> On the site of Iatrus (Krivina; obl. Ruse/BG) and its phases, see: von Bülow 2007; Herrmann/Wachtel 1979, 9-25.

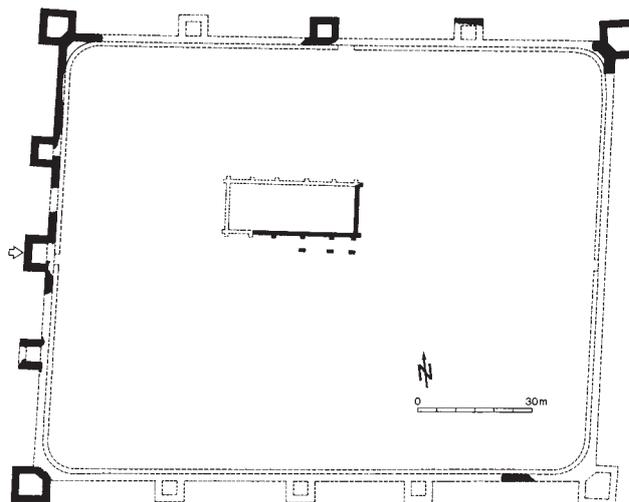
<sup>14</sup> Excavation reports by B. Döhle in: *Klio* 47, 1966, 57-151; B. Döhle in: *Iatrus-Krivina 1* (Berlin 1979) 53-62. For Building XLVI, see Döhle 1999, 143. Cf. Dintchev 1999, who expresses doubts

about the use of Building VII as a *horreum* proposing its interpretation as a barracks. – On the *horreum* of Palmyra, see note 88.

<sup>15</sup> Excavation report by B. Döhle, *Klio* 47, 1966, 88. – On the inscription: Wachtel 1999.



**Fig. 3** Castra Martis (Kula; obl. Vidin/BG). *Quadriburgium* with possible storage rooms (1). – (After Dintchev 2006).



**Fig. 4** Timacum Minus (Ravna; Zaječarski okrug/SRB). 4<sup>th</sup>-century phase of the fort with the *horreum*. – (After Petrović 1986).

fortification associated with the *Legio Italica* of *Novae*. A granary with strong buttressed walls stood in the centre of the settlement. A large Christian basilica was built next to it in the 5<sup>th</sup> century, without causing any damage. This may suggest that the *horreum* remained in use<sup>16</sup>.

In neighbouring *Dacia Ripensis*, the tetrarchic *quadriburgium* of *Castra Martis* (Kula; obl. Vidin/BG; **fig. 29, 33**) was most probably also a supply base. This compact fortlet had two halls with rows of pillars on its ground floor, which could be used for storage (**fig. 3**). Perhaps under Constantine, the *quadriburgium* was extended through a larger fortress attached to it. Rescue excavation within this later fortress located a building with a layer of burnt grain, probably a granary. *Castra Martis* appears as a city in the administrative list of Hierokles (compiled under Theodosius II), suggesting that it was an autonomous fiscal district and production centre<sup>17</sup>. It lay at a small distance from the Danube and was readily approachable from the riparian civil and military centres of *Bononia* (Vidin/BG) and *Ratiaria* (Archar; obl. Vidin/BG).

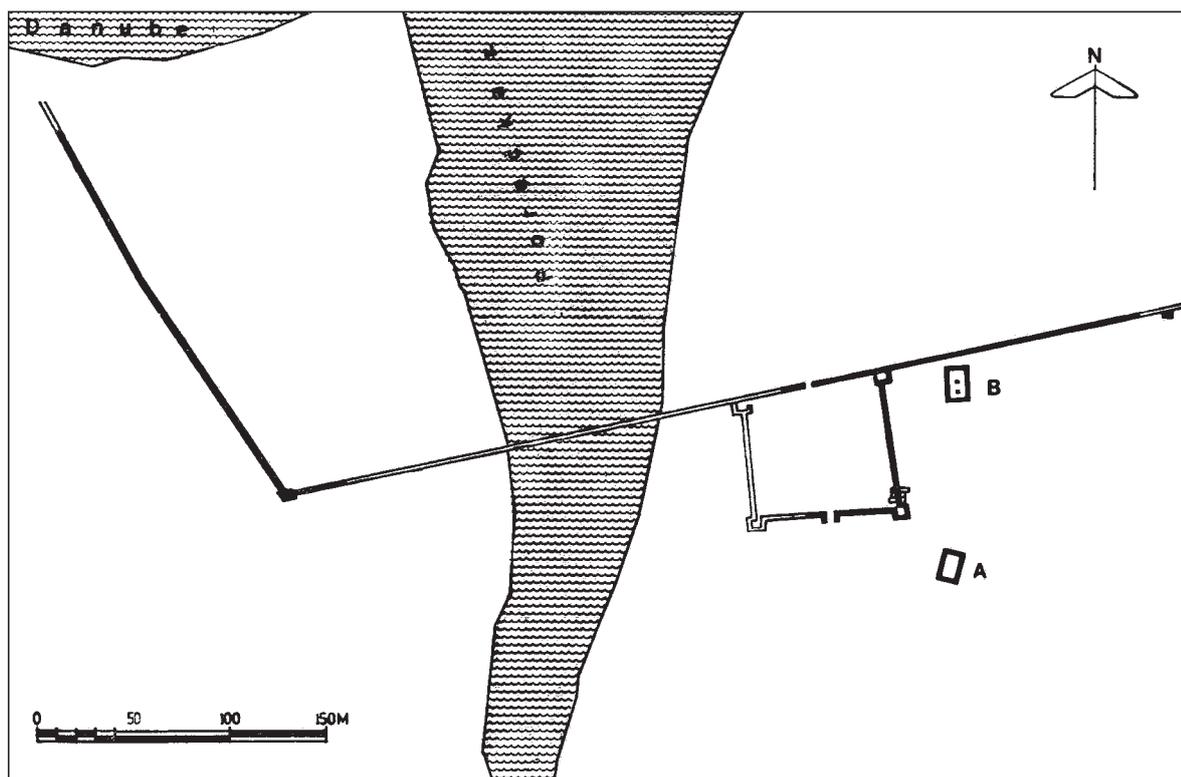
Another important artery of the late Roman military supply network in *Dacia Ripensis* was the *Timok Valley* (SRB), which, as we shall see later on, has produced several important examples of 4<sup>th</sup>-century *horrea*. One of them was the fort of *Timacum Minus* (Ravna; Zaječarski okrug/SRB; **fig. 29, 35**). Under the Principate, *Timacum Minus* consisted of a small auxiliary fort (c. 1.5 ha) and a civilian municipium. In the late 3<sup>rd</sup> century A. D., the fort was rebuilt, and a *horreum* was erected in its centre. It had walls with buttresses and exterior porticoes (**fig. 4**)<sup>18</sup>.

Turning to *Moesia Superior*, an advantageous position comparable to that of *Iatrus* was occupied by the fortified settlement located at the confluence of the river *Porečka Reka* (SRB) into the Danube (**fig. 29, 27**). The site is right at the middle of the *Iron Gates* district, just south of the riparian fort of *Taliata* (Veliki Gradac/Donji Milanovac; Borski okrug/SRB Serbia). The settlement, probably tetrarchic or Constantinian, was protected by a long wall crossing the valley and isolating it from the riparian area. Behind the wall stood a

<sup>16</sup> Kovacheva 1980; Kovacheva/Gerasimova-Tomova 1983, 105. 111-116. – The site and building are visible on Google Earth, coordinates: 43 22 58 N, 24 37 46 E.

<sup>17</sup> Hierokl., *Synekdemos* 655, 5; Atanasova 2005, 31 f. 42. 46; Dintchev 2007, 505. – The site and building are visible on Google Earth, coordinates: 43 53 26 N, 22 31 26 E.

<sup>18</sup> Petrović 1986; Mladenović 2012, 183 f. cat. nr. 1288. – The site and building are visible on Google Earth, coordinates: 43 38 29N, 22 15 17 E.



**Fig. 5** Porečka Reka (SRB). General plan of the site with the two warehouses (**A** and **B**). – (After Petrović 1982-1983).

*quadriburgium* (probably left unfinished) and a set of unidentified buildings including a bath-house and two identical rectangular buildings (15 m × 9 m) with very strong internal pillars and walls (1.5-1.8 m thick), which are thought to be *horrea* (fig. 5). Their walls are too thick for their modest dimensions, and most probably point to a tall, tower-like construction. If that is true, they may have served as watch-towers too. The site is believed to have been a fortified supply base serving the entire region of the Iron Gates. Very probably it was the gathering centre of grain and other goods produced in the valley of the Porečka Reka. The life of the settlement seems to have been short, not exceeding the late 4<sup>th</sup> century<sup>19</sup>.

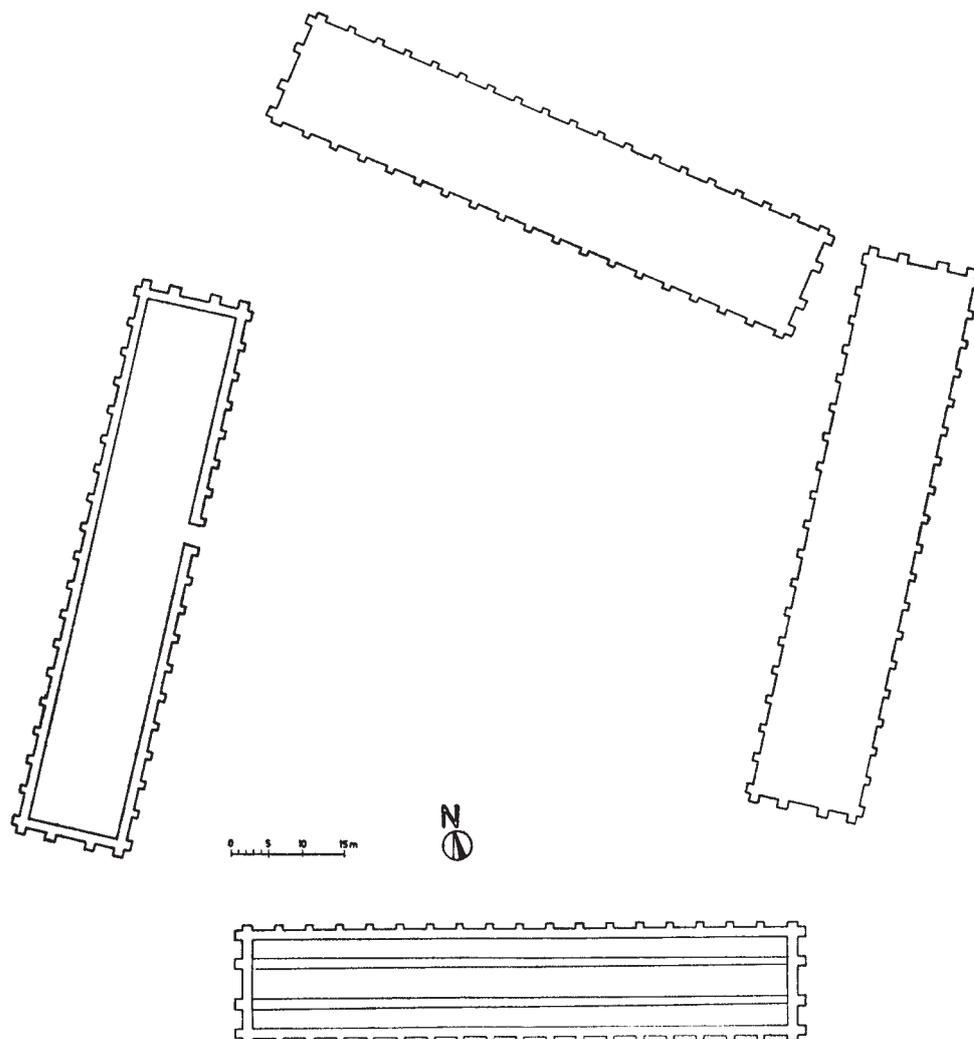
Still in the Iron Gates district, a crucial point of the Danube was Trajan's bridge with its twin forts of Drobeta (Turnu Severin; jud. Mehedinți/RO) and Transdrobeta/Pontes (Kostol; Borski okrug/SRB). A *horreum* was built during the restoration of Transdrobeta/Pontes (fig. 29, 26) as a military base, which took place surprisingly late, after the mid-4<sup>th</sup> century. A part of the *horreum* was located directly inside the east gate of the fort: it was strongly built with buttressed walls and had its floor covered with hydraulic mortar. The building was in use for a very short period of time and is thought to have been destroyed and abandoned in the late 4<sup>th</sup> century<sup>20</sup>.

Finally, in Dardania, an important supply-base was located on the site of Gradina near Peć (RKS; fig. 29, 25). It consisted of four large warehouses (c. 12 m × 75 m each, with 1.20 m thick buttressed walls) within a fortified settlement of about 1.3 ha (fig. 6)<sup>21</sup>.

<sup>19</sup> Petrović 1977; 1980; 1982-1983.

<sup>20</sup> Vasić 1999, 31-33. – Mladenović 2012, 129 cat. nr. 745.

<sup>21</sup> Srejović 1982/1983, 35-43. – Mladenović 2012, 170 cat. nr. 1155.



**Fig. 6** Gradina (Peć/RKS). Partly hypothetical plan of the *horrea* (mostly unexcavated). – (After Srejšović 1982/1983).

Warehouses at military forts can hardly be described as a novelty in Late Antiquity. Forts were the final destination of the *annona militaris* which, after all, was created for their provisioning in the first place. *Horrea* can therefore be expected at most military sites of the Danube. Yet some of the sites described here are very likely to have been storage bases not only receiving imported supplies, but also locally produced ones from their own productive territories. One should note their location in valleys or near tributaries of the Danube, which most probably played an important role in the transport and distribution of the supplies.

### **HORREA OF THE LATE 3<sup>RD</sup> AND EARLY 4<sup>TH</sup> CENTURIES AT VILLAS AND RURAL SITES**

A substantial number of early Roman *horrea* and some of the largest late Roman ones are known from villas. The rebuilding of the Danubian provinces after the 3<sup>rd</sup>-century crisis included the partial restoration of the villa network which had been a major provider of supplies for the early Roman army. However, the restoration focused on the largest villas only, while most of the smaller and middle-sized rural establishments

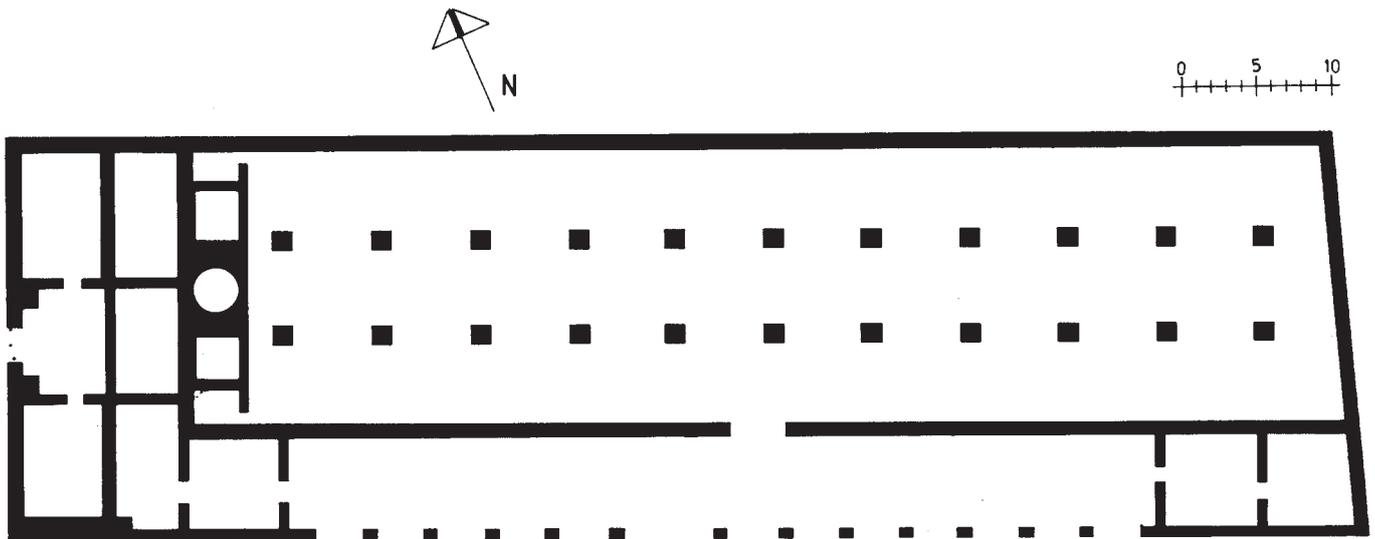


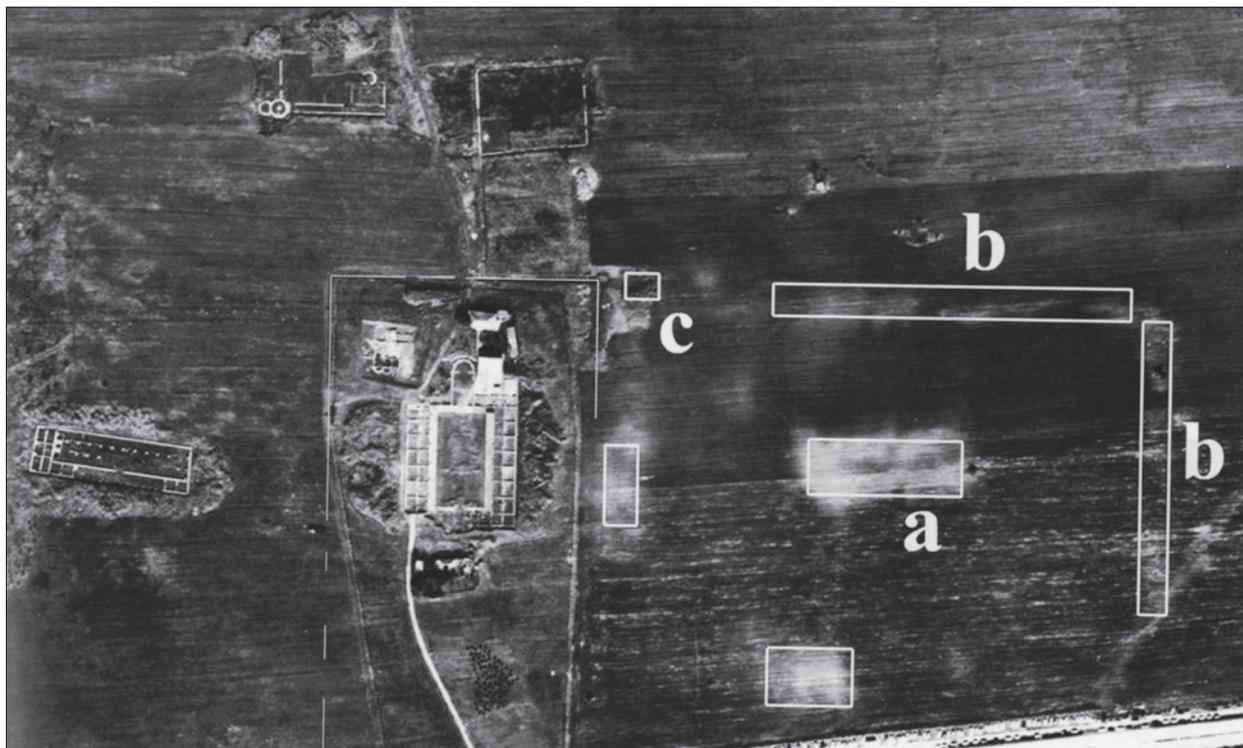
Fig. 7 Mediana (Niš; Nišavski okrug/SRB). The excavated *horreum*. – (After Srejšović 1993).

of the earlier period were abandoned for good. The new villas appearing around A. D. 300 are very few and large, and some of them may have been bases of imperial or senatorial estates. The richest evidence for this development comes from the provinces of Dacia Mediterranea and Dacia Ripensis where extensive parts of the countryside were agriculturally exploited as imperial estates in Late Antiquity.

The main base of landownership in the region of Naissus (Nišavski okrug/SRB; fig. 29, 21) seems to have been Mediana, a suburb of Naissus which was used by campaigning emperors as a temporary residence and gathering point of troops in the 4<sup>th</sup> century. Archaeology has located an extensive early 4<sup>th</sup>-century villa complex which has been associated with Constantine. The site centred on a sumptuous peristyle residence flanked on the east and west by two compounds consisting of *horrea* and rows of barracks, the whole complex being enclosed by a light precinct wall (figs 7-8). The west *horreum*-barracks compound has been excavated, while its eastern counterpart has been located by aerial photography. The excavated west *horreum* is one of the largest known late Roman warehouses (27 m × 91 m)<sup>22</sup>. It was three-aisled and contained massive dolia, about 2 m tall<sup>23</sup>. The building had a porch along its south façade and a complex of smaller rooms on its west end, including a large wine-press with masonry-built vats. The press and the dolia suggest that the building was used both for storage and for industrial production and fermentation of wine, revealing the main productive activity of this estate. Several early Roman parallels can be found in wine-producing villas of Gallia Narbonensis, like the villas of Le Molard at Donzère (dép. Drôme/F), Les Toulons at Rians (dép. Var/F), and Vareilles at Paulhan (dép. Hérault/F)<sup>24</sup>. The villa of Mediana is thought to have been functional until the late 4<sup>th</sup> century AD, after which it was gradually transformed into a rural settlement, perhaps suggesting that the imperial estate ceased to be exploited. It is significant that the site is located on the left bank of river Nišava, through which the products could probably be shipped down to the Velika Morava (Margus) and the Danube.

22 Milošević 2011 (with earlier bibliography). – The site and building are visible on Google Earth, coordinates: 43 18 39 N, 21 56 47 E.

23 Brandl/Vasić 2007, 101. – Mladevonić 2012, 44. 76 Nr. 209.  
24 Brun 2005, 45-55.



**Fig. 8** Mediana. Aerial photograph showing the excavated parts (left, including the *horreum* on the extreme left) and unexcavated buildings east of the residential complex (a possible *horreum*). – (After Milošević 2011).

Two mostly unexcavated buildings within the fortified enclosure of the imperial villa of Gamzigrad (Zaječarski okrug/SRB; fig. 29, 9) are probably *horrea*. They occupied the area south and west of the temple with the crypt. The south one was an oblong rectangular structure with a porch along its north façade (51.2 m × 19.4 m) and had a raised floor suggesting that it was a granary. The west *horreum* was larger (30 m × 45.1 m) and had 5 aisles divided by four rows of pillars, and buttressed outer walls (fig. 9). Both buildings seem to belong to the original Galerian phase of Gamzigrad and can be dated to the first decade of the 4<sup>th</sup> century. A third *horreum* (44 m × 16 m) was excavated about 200 m west of the fortification, which recent geophysical prospection has shown to belong to a small extramural settlement. The same geophysical survey located another extramural quarter, stretching over 7 ha north of the fortification, which was enclosed by a light precinct and comprised rows of barracks, an oblong three-aisled *horreum* (106 m × 23 m) and other buildings, probably constituting the extramural *partes rustica* and *fructuaria* of the villa (fig. 10). This quarter looks very similar to the *horrea*-barracks compounds of Mediana, suggesting that they were perhaps contemporary and served similar functions<sup>25</sup>.

Based on the investigation of the residential complexes, the villa of Gamzigrad is thought to have been left unfinished after Galerius' death in A. D. 311<sup>26</sup>. Given the isolated position of the complex, it is plausible to think that no emperor or high official ever spent time there, so the palace lost its *raison d'être*. Yet does this mean that the local imperial estate ceased to function as well? With its four storehouses/granaries, Gamzigrad is one of the largest storage bases in the northern Balkans, suggesting that this great estate was

<sup>25</sup> Von Bülow et al. 2009, 113-116. The authors believe that the extramural structures predate the construction of the fortified complex, dating from the 2<sup>nd</sup> or early 3<sup>rd</sup> century.

<sup>26</sup> Petković 2011, 114-128 (with earlier bibliography).

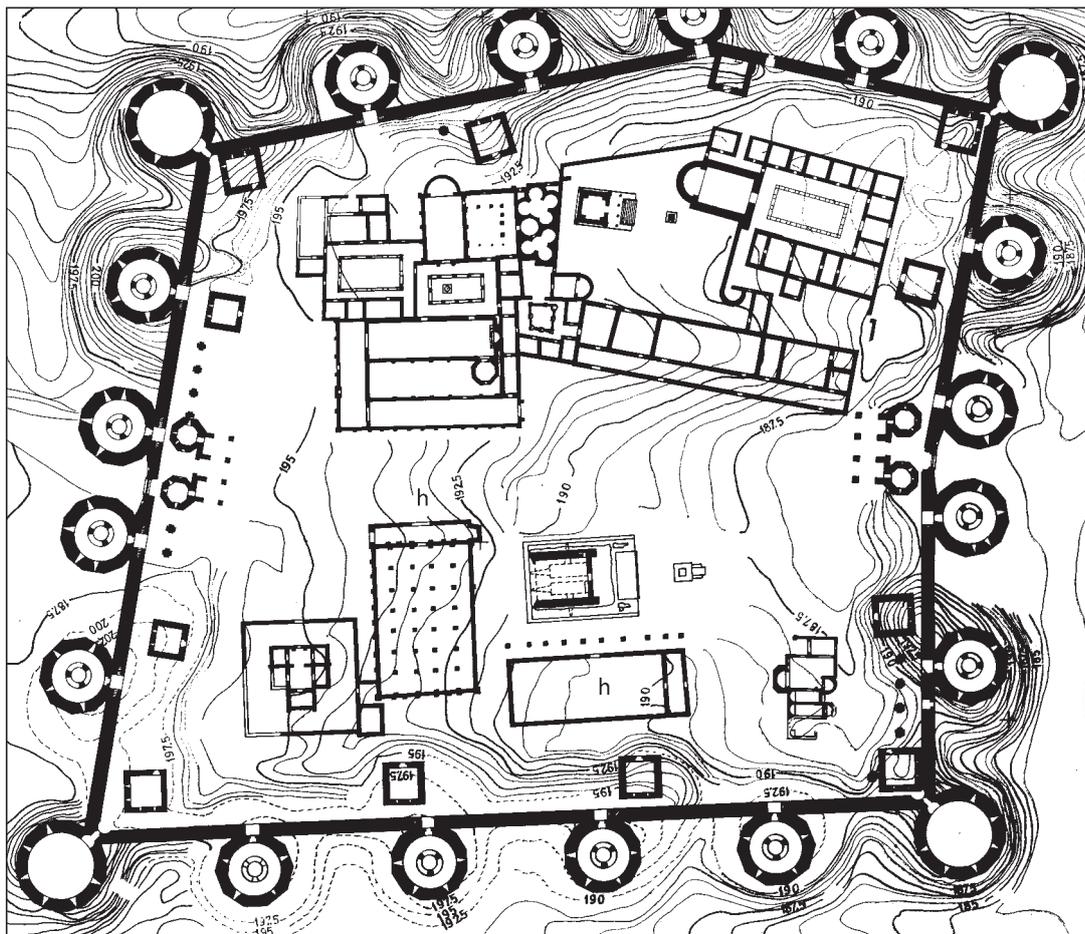
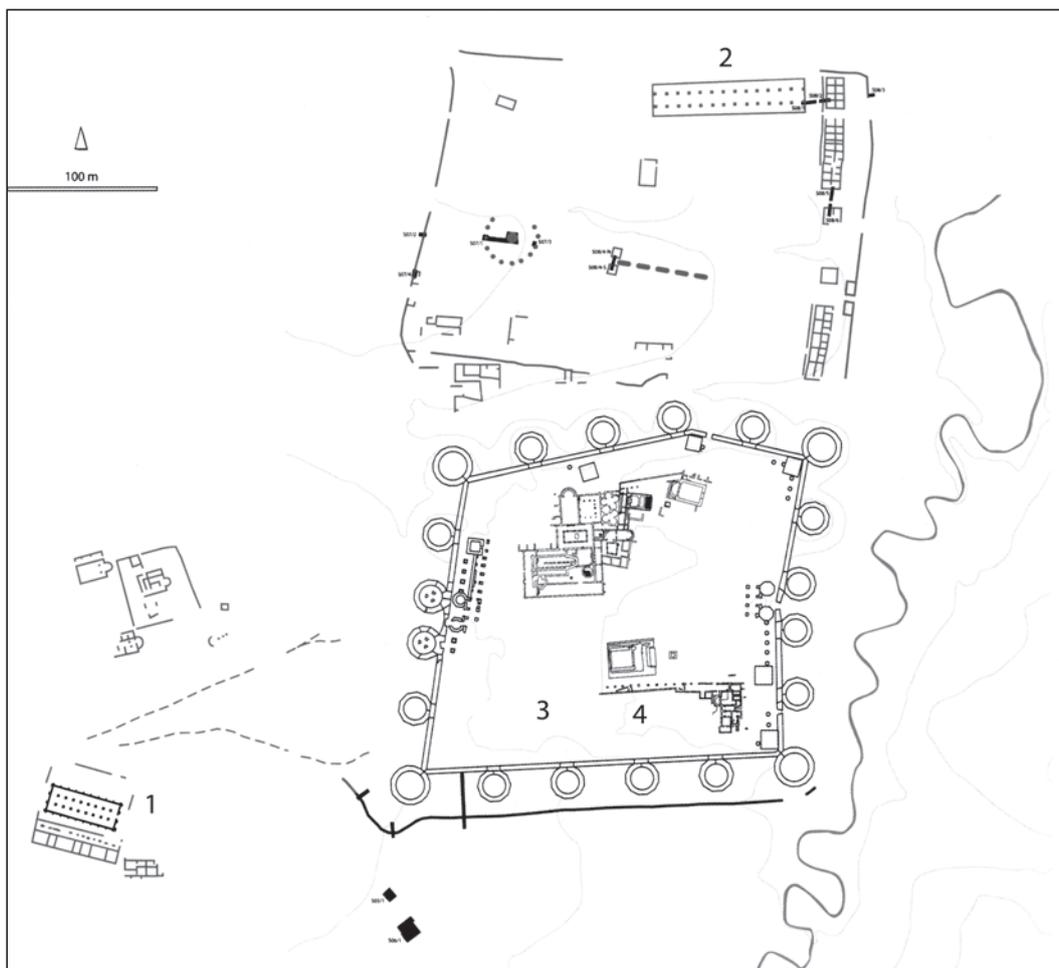


Fig. 9 Gamzigrad (Zaječarski okrug/SRB). The fortified imperial villa with the two intramural *horrea* denoted by **h**. – (After Srejović 1993).

a major producer which probably supplied the forts of the area. This means that Gamzigrad, far from being merely the megalomaniac project of Galerius for his own retirement palace, was also an integral part of the provisioning system of the army – a function which is unlikely to have been given up after the emperor’s death. It is therefore possible that the site, both inside and outside the fortification, continued to function as a storage base throughout the 4<sup>th</sup> century, even if the palace proper had been abandoned. This will only be possible to confirm through the excavation of the *horrea* and agricultural installations, which has not taken place yet. Like Mediana, the fortification of Gamzigrad was taken over by a rural settlement towards the end of the 4<sup>th</sup> century.

In this context, it is perhaps worth pointing out another, less famous, villa complex which should be examined alongside the imperial complexes of Gamzigrad and Mediana, since it is comparable to them in size and luxury. That is the partially excavated villa of Kostinbrod (BG), fifteen kilometres northwest of Sofia, which probably served as a great estate-base, imperial or senatorial. No warehouses were located by the limited excavations which focused on the residential complex, but, by analogy to the villas of Mediana, Gamzigrad and Montana (see below), they are likely to have existed. The villa of Kostinbrod was functional into the early 5<sup>th</sup> century when it was destroyed by fire. In the following centuries, it was taken over by a poor rural settlement which in the 6<sup>th</sup> century was turned into a small fortified village<sup>27</sup>.

<sup>27</sup> Dintchev 2003.

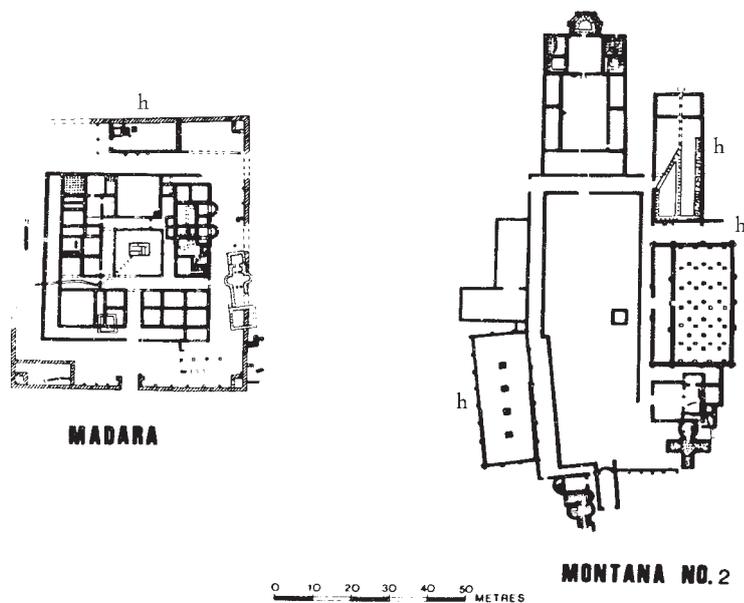


**Fig. 10** Gamzigrad. Plan including the extramural sectors revealed by excavation and geophysical survey. The two extramural *horrea* (1-2) are seen at the top and bottom left. The intramural ones (3-4) are not shown on this plan (see fig. 9). – (After von Bülow et al. 2009).

A major villa cluster was located at Montana (Montana/BG; formerly Mihailovgrad; fig. 29, 19), a settlement which in the imperial period included an auxiliary fortress and a civilian community epigraphically attested as *municipium Montanensium*. Under the tetrarchy, the local fort was rebuilt as a mighty hilltop citadel<sup>28</sup>. Montana had three large villas which probably functioned from the 2<sup>nd</sup> to the 4<sup>th</sup> centuries and included several *horrea*. The largest of these country houses, villa 2, had no less than three granaries/warehouses of significant size, two of which had raised floors (fig. 11). A villa with *horreum* was also excavated in the vicinity of Ratiaria, near the village of Makresh (obl. Vidin/BG; fig. 29, 16). All of these establishments can be classified as large villas and present a remarkable continuity of occupation from the 2<sup>nd</sup> century A. D. Despite suffering damage during the 3<sup>rd</sup> century, they were repaired and continued their life into the late 4<sup>th</sup> century<sup>29</sup>.

<sup>28</sup> CIL III Suppl. 12376. – Binev 2003, 160-182. – Wendel 2005, 45f. cat. nr. 1225 (with earlier bibliography). The results of excavations are published in *Montana I* (Sofia 1987).

<sup>29</sup> Dintchev 1997, 25f. 32-40. – Mulvin 2002, 92. 95f.



**Fig. 11** The villa of Madara (obl. Shumen/BG) and villa 2 of Montana (BG): **H** *horrea*. – (After Poulter 1983/1984).

Granaries of the early 4<sup>th</sup> century have been located on unfortified sites of unclear character, perhaps villas, at Knjaževač (Zaječarski okrug/SRB; region of Timacum Maius in the Timok valley; **fig. 29, 13**) and Maskar (Šumadijski okrug/SRB)<sup>30</sup>.

Turning to the province of Moesia Inferior, great estates probably existed also on the plain of Pliska, which lies half-way between Marcianopolis and Abrittus. It has been suggested, that the villa of Madara (obl. Shumen/BG; **fig. 29, 15**), existing since the 1<sup>st</sup> century A. D., may have been the base of an imperial estate under the Principate. The villa was damaged during the 3<sup>rd</sup> century and in the 4<sup>th</sup> it was partially rebuilt. That phase included at least one *horreum* (18.8 m × 8.6 m × 19 m × 8.5 m) built against the north precinct wall (**fig. 11**). The warehouse included a wine press and dolia, showing that it was used for wine production, like the much larger warehouse of Mediana (**fig. 12**). The buildings were destroyed and abandoned in the late 4<sup>th</sup> or early 5<sup>th</sup> century, and the site subsequently became a village which was inhabited into the end of Antiquity<sup>31</sup>.

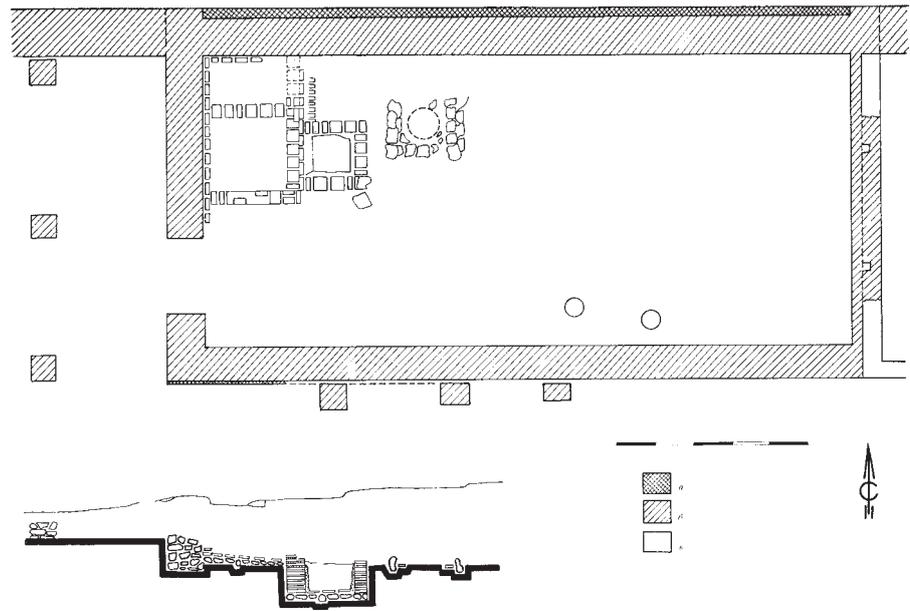
The restoration and building of villas after the 3<sup>rd</sup>-century crisis demonstrates that the frontier areas retained their role as chief suppliers of the army, and that the economic relationship between legions and estates in the north Balkans was revived. The revival, however, was only partial and the villa landscape was not restored to its original complexity<sup>32</sup>. Instead it underwent a process of nucleation and centralisation, the new villa network consisting mainly of very large estates. The close coexistence of *horrea* and residential buildings at the great imperial villas of the 4<sup>th</sup> century is a testimony to the complex character of these residential complexes as centres of both power and production.

Great villas like these are known from many parts of Roman Europe in the 4<sup>th</sup> century, but are almost unknown in East. It is perhaps no coincidence that the most numerous, largest and most sumptuous examples of the villas listed here come from a part of the Balkans which belonged to the West Empire until A. D. 395, namely north Illyricum. They therefore may represent a social and agrarian reality chiefly pertaining to the

<sup>30</sup> Srejšović 1982/1983, 35-43. – Mladenović 2012, 124. 151 cat. nrs. 697. 958.

<sup>31</sup> Dremisizova-Nelchinova 1984. – Mulvin 2002, 90-91. – Dintchev 1997, 79-74.

<sup>32</sup> Henning 1987, 22-34.



**Fig. 12** Madara villa. *Horreum* with wine press and dolia (also see **fig. 11**). – (After Dremsizova-Nelchinova 1984).

Roman West. Scholarship and excavations on such sites – not only in the Balkans – have focused on their sumptuous residential buildings and mosaics, an approach leading to substantial misconceptions of their character, overemphasising their residential and political aspects and underplaying their economic role<sup>33</sup>. For example, earlier scholarship postulated that the Villa del Casale at Piazza Armerina (prov. Enna/II) had no *pars rustica* and *fructuaria*, but was merely a pleasant country house of a senator or emperor. Recent research, however, located two large *horrea* southwest of the residential complex, showing that the villa was indeed the centre of an estate<sup>34</sup>. The great villas of the northwest Balkans probably played a similar role.

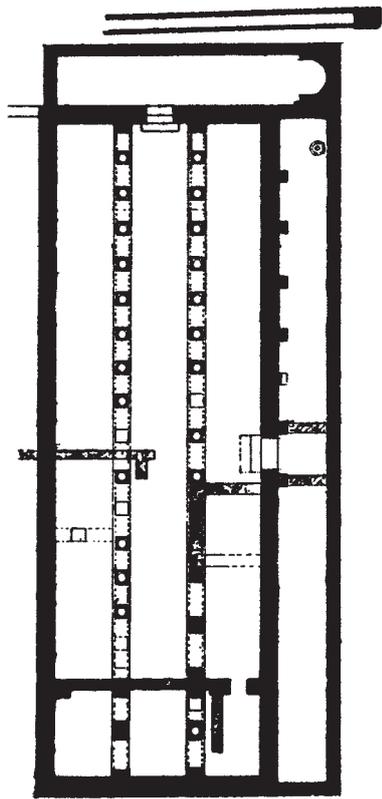
### **HORREA OF THE LATE 3<sup>RD</sup> AND EARLY 4<sup>TH</sup> CENTURIES IN CITIES**

One of the salient features of the post-crisis restoration of the northern Balkans was the building of *horrea* in cities. Early Roman *horrea* in the region are known almost exclusively from forts and villas. By contrast, the majority of late Roman ones has been found at cities. This demonstrates that something changed in the provisioning system, with the addition of cities as a new major player – indeed as the main annony centres. In areas near the frontier, cities took on an active role in the military organisation of the Late Empire<sup>35</sup>: written accounts about the defensive role of new or newly-fortified cities like Amida (Diyarbakır/TR) in Mesopotamia, Karin/Theodosiopolis (Erzurum/TR) in Armenia and Dara/Anastasiopolis (Mardin ili/TR) in Mesopotamia demonstrate that the army relied on them for its provisioning and used them as strongholds in times of war. They had to be prepared to withstand sieges and, at the same time, they were major producers and gathering bases of grain and other supplies. Storehouses and fortifications are two categories of infrastructure provided in support of these functions – warehouses are explicitly mentioned for Dara and Theodosi-

<sup>33</sup> The role of the great villas of Spain as annony producers has been suggested by Fernández Ochoa/Morillo/Salido Domínguez 2011, 284.

<sup>34</sup> Pensabene 2010, 1-12.

<sup>35</sup> On the role of cities in defense, see: Pollard 2000, *passim*; Crow 2007.



**Fig. 13** Tropaeum (Adamclisi; jud. Constanța/RO). Central *horreum* («*basilica forensis*») of the late Roman city. – (After Tocilescu 1900).

opolis<sup>36</sup>. The combination of sophisticated fortifications and *horrea* in the period of the tetrarchy and Constantine can be archaeologically observed on several sites in the Danube and Rhine provinces, especially at Keszthely-Fenekpuszta (Kom. Zala/H), Kapospula-Alsóheténypuszta (Kom. Tolna/H), Ságvar (Kom. Somogy/H), Trier, Strasbourg and Maastricht<sup>37</sup>. A connection between urban fortifications and the *annona* system has also been suggested for strongly fortified cities in north and west Spain and south-west Gaul, even though no *horrea* have been located there so far<sup>38</sup>. The Middle and Lower Danube provinces and their direct neighbours clearly fit this model, since warehouses and walls were indeed the most prominent kinds of infrastructure provided to cities of that region in the late 3<sup>rd</sup> and 4<sup>th</sup> centuries.

In the early 1880s, Grigore Tocilescu, one of the fathers of Romanian archaeology, discovered a robust rectangular building (56 m × 20 m) with three aisles and buttressed walls (c. 1.6 m thick), standing on the central crossroad of the city of Tropaeum in Scythia Minor (Adamclisi; jud. Constanța/RO; **figs 13; 29, 36**)<sup>39</sup>. Due to the early date and unsophisticated character of the excavation at Tropaeum, no certain conclusions can be drawn about the duration of the building's life. Later additions included a narrow oblong room with an eastward apse, resembling a chapel, which was built along the north side of the building, taking over some of the adjacent street. A portico along the east side – also a later addition – contained large *dolia*, over 1.5 m high and 1.2–1.5 m in diameter. Buildings of uncertain date and function took over the interior of the structure when it fell out of its original

use<sup>40</sup>. Tocilescu, interpreted it as a forum basilica of the age of Trajan. Later research abandoned the idea that a forum existed on the site and established that the building belonged to the tetrarchic period, when Tropaeum was rebuilt and fortified after its destruction during the 3<sup>rd</sup>-century crisis. Its interpretation as a basilica, however, was not questioned until Andrew Poulter and more recently Ventsislav Dintchev correctly argued that the structure had all the features of a late Roman granary<sup>41</sup>. The discovery of this important building by Tocilescu took place in a time when the architecture of Roman granaries and warehouses was little known. Besides, its location at the centre of the city also created expectations for civil buildings, thus leading its excavator to his erroneous interpretation. As we shall see later on, however, this is not the only example of a *horreum* built within an urban settlement in the early 4<sup>th</sup> century. The city of Tropaeum was so radically redesigned and rebuilt after its mid-3<sup>rd</sup>-century destruction, that it came to be regarded as a newly-built city, representative of a new understanding of urbanism. The dedicatory inscription from one

<sup>36</sup> Amida (Diyarbakır/TR): Amm. 18.9.1-3. – Theodosiopolis: Moses of Chorene 3.59, quoted by Adontz 1970, 119. – Dara (Mardin ili/TR): Procopius, Buildings 2.1; Ps.-Zachariah of Mitylene, Syriac Chronicle 7, 6 (see Greatrex et al. 2010). See also the discussion in Crow 2007.

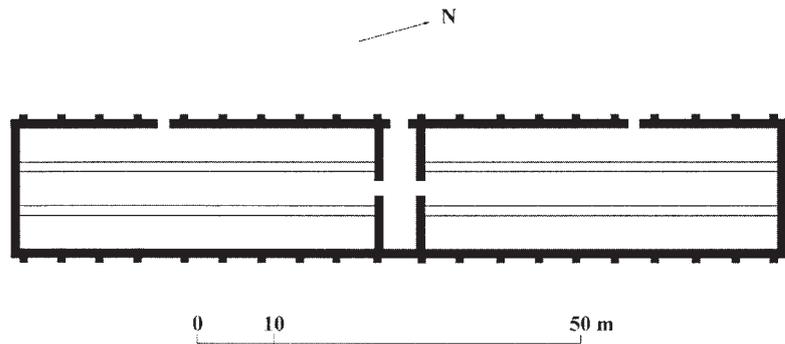
<sup>37</sup> Pannonia: Borhy 1996; Heinrich-Tamáská 2011, 655-658. 677. 679-681 (with earlier bibliography on the sites). – Strasbourg: Gisinger 2002. – Trier: see note 4. – Maastricht: Panhuysen 1996. – General on the Rhine and Upper Danube fortifications with occasional references to warehouses: Johnson 1983, 137-195.

<sup>38</sup> Fernández Ochoa/Morillo/Salido Domínguez 2011; cf. criticism by Arce 2011.

<sup>39</sup> Tocilescu 1900, 91. On Tocilescu and his role in the birth of archaeology in Romania, see: Niculescu 2011, 400-403.

<sup>40</sup> Pârvan 1912, 138-143. – Barnea 1968, 467f.; 1979, 20. 251. – The site and buildings is visible on Google Earth, coordinates: 44 05 30 N, 27 56 39 E.

<sup>41</sup> Poulter 1983/1984, 119. – Dintchev 2005, 283. – Zahariade 2006, 107-108.



**Fig. 14** Zaldapa (near Abrit; obl. Dobrich/BG). Partly hypothetical plan of the *horrea* in the centre of the fortified city. – (After Dintchev 2005).

of the gates declares that the *civitas Tropaeensium* was built *ad confirmandam limitis tutelam* – a civilian settlement with a strong supportive role in the defence of the frontier<sup>42</sup>. The strong defences and central position of the *horreum* explain the meaning of this statement and are evocative of the centrality of defence and the *annona* in the life of the community.

A few years after Tocilescu's excavations at Tropaeum, the »father of Bulgarian archaeology«, Karel Škorpil, found parts of a similar building on the site which he thought was Abrittus, but which was later identified as the late-antique town of Zaldapa in Scythia Minor (near the village of Abrit [formerly Aptaat]; obl. Dobrich/BG; **fig. 29, 38**). It consisted of two longitudinally linked three-aisled halls which formed a complex of overall dimensions 101 m × 18 m (48 m × 18 m each warehouse, with an intermediate common antechamber) (**fig. 14**)<sup>43</sup>. Its very thick walls (1.2-1.5 m) were strengthened with buttresses. The building stood at the centre of the settlement. Following Tocilescu's ideas about Tropaeum, Škorpil believed that his find was also a basilica, but he never published anything about his excavation, and, in the meantime, the buildings he uncovered have completely disappeared. Luckily, his notes and plans survived, and, almost a century after the dig, Sergei Torbatov used them to produce a short monograph about the site, accompanied by plans based on Škorpil's sketches and on recent fieldwork. Torbatov, following the original excavator's view, also interpreted the central building as a basilica. His views, however, received convincing criticism by Dintchev who proposed that the building was a granary<sup>44</sup>. The same issues discussed about Tropaeum apply at Zaldapa. The settlement seems to be a newly-founded city of the tetrarchic or Constantinian periods, very similar and contemporary with Tropaeum, but significantly larger (25 ha) (**fig. 15**). The granary at its centre shows that it had a similar role as a settlement supporting the provisioning of the frontier forces.

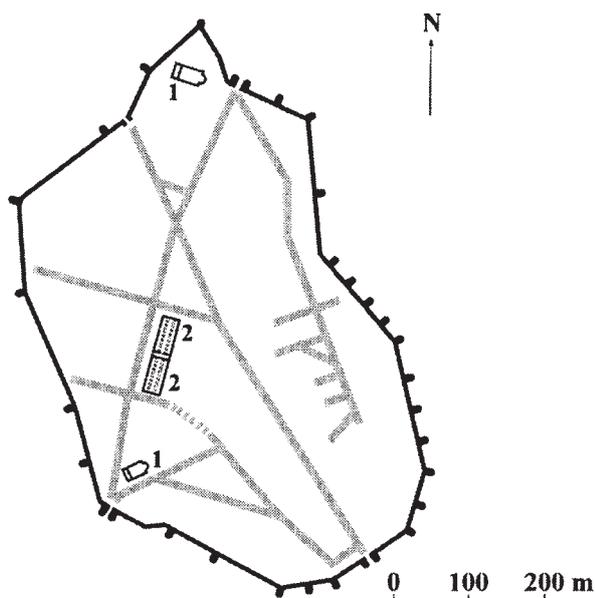
In the 4<sup>th</sup> century, the walled area of the city of Istrus (or Histria) in Scythia Minor (Istria; jud. Constanța/RO; **fig. 29, 12**) was dominated by four irregularly rectangular buildings, three of which were three-aisled and one two-aisled (dimensions 25.75/24.8 m × 12.62/12.7 m; 17.5 m × 17.3 m; 16.65 m × 11.8 m; 24.1/23.75 m × 7.25/6.05 m) (**fig. 16**)<sup>45</sup>. They stood near the main gate and were accessed through a street leading to a small porticoed courtyard. On the east side of the courtyard there was an apsed hall with a spacious rectangular antechamber, whose form and size recall the principia building at the fort of Iatrus. The buildings were initially interpreted as civil basilicas of the 6<sup>th</sup> century. Stratigraphic observations led later excavators of Istrus to propose a dating to the 4<sup>th</sup> century without questioning the interpretation of their use. The

<sup>42</sup> CIL 3 13734; also see discussion by Poulter 1983/1984, 119; 2007a, 35.

<sup>43</sup> The same plan can be seen at the *horrea* of the villa of Piazza Armerina (prov. Enna/I; see note 34).

<sup>44</sup> Torbatov 2000, 37-47; 2003, 96-99. – Dintchev 2005, 282 f.

<sup>45</sup> G. Florescu in: Histria I, 1954, 114. 116. 122. – Suceveanu/Scorpan 1970. – The site and buildings are visible on Google Earth, coordinates: 44 32 50 N, 28 46 24 E.



**Fig. 15** Zaldapa. General plan of the city: **1** Christian basilicas. – **2** *horrea*. – (After Dintchev 2009b).

(17 m × 13.4 m × 15.5 m × 14 m) built with its narrowest side against the north walls of the city (fig. 17). It was accessed through an enclosed courtyard, on the east side of which stood a suite of three rooms with a small veranda. The finds are mostly unpublished and the phases of the complex are only very roughly known. In the late 5<sup>th</sup> or 6<sup>th</sup> century, the complex was refurbished, and perhaps converted to some official use; a peristyle was built on the courtyard and marble decoration was added. Small storage rooms with *dolia* were created in the south part of the warehouse. The building was interpreted as a public building, bath, Christian basilica or private house<sup>47</sup>. Once again, however, the form, size and position have more parallels in warehouses than civil or ecclesiastical buildings. Its positioning perpendicularly against the fortifications, in particular, is also observed at the *horrea* of el-Lejjun (gouv. Kerak/JOR), Tokod (Kom. Komárom-Esztergom/H) and Cluijk (prov. Noord-Brabant/NL)<sup>48</sup>.

The strongly fortified town of Abrittus in Moesia Inferior (Razgrad/BG; fig. 29, 1) was also equipped with a *horreum* (56.25 m × 20.2 m), similar to those of Tropaeum and Zaldapa (fig. 18). Located directly south of the west gate of the city, it was three-aisled with rows of pillars and strong buttressed walls. Its position and design are strikingly similar to those known from the inner fortifications of Pannonia<sup>49</sup>. At some point, probably later in the 4<sup>th</sup> century, a second warehouse was built north of the west gate, just opposite the already existing one. Unlike the first *horreum*, which stood about 5 m from the wall, this was built directly against the defences. The substructure of its walls show that it was also three-aisled, but smaller (34 m × 17 m), without buttresses and probably divided by continuous walls rather than rows of piers. The two buildings, which were correctly recognized by their excavators as *horrea*, are believed to have been destroyed and abandoned in the late 4<sup>th</sup> or mid-5<sup>th</sup> century<sup>50</sup>.

evidence about the period of their function is virtually lost, but they are thought to have functioned at least during the 4<sup>th</sup> century<sup>46</sup>. Recently, V. Dintchev suggested that the interpretation of these buildings should be reconsidered, suggesting that they were actually granaries/warehouses. Their architectural type and positioning next to the walls and near the gate support this interpretation. If this hypothesis is correct, they constitute one of the most remarkable clusters of late Roman *horrea* in the entire region. Istrus, as a port on the Black Sea, may have been one of the points where the *annona* from the Mediterranean was delivered, but at the same time it must also have been the gathering centre for supplies produced in the surrounding plain.

Another example of a probably misinterpreted *horreum* can be found at the port-town of Callatis in Scythia Minor (Mangalia; jud. Constanța/RO; fig. 29, 3). It was a three-aisled trapezoid structure

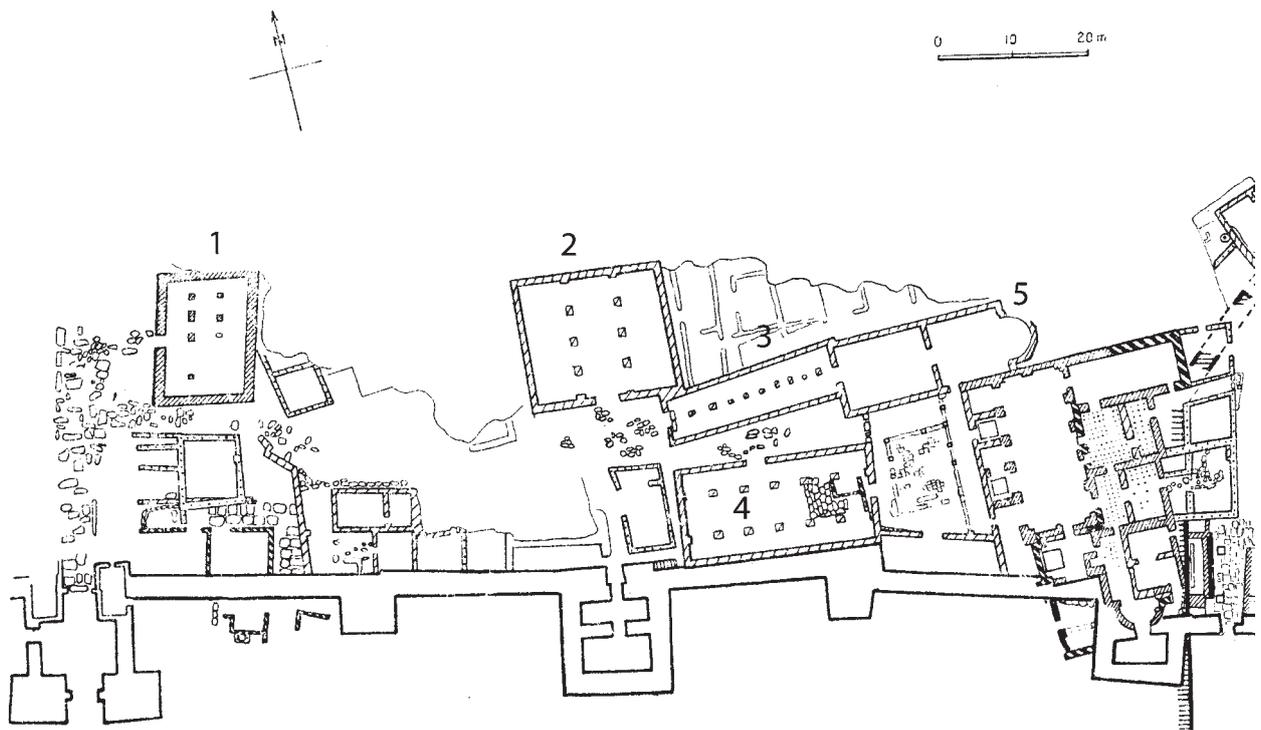
46 A. Suceveanu in: *Histria VI*, 1982, 86f. – Condurachi 1957; 1971. – Dintchev 2005, 280-282.

47 Barnea 1977, 128-134. – Condurachi 1971. – Zahariade 2006, 109.

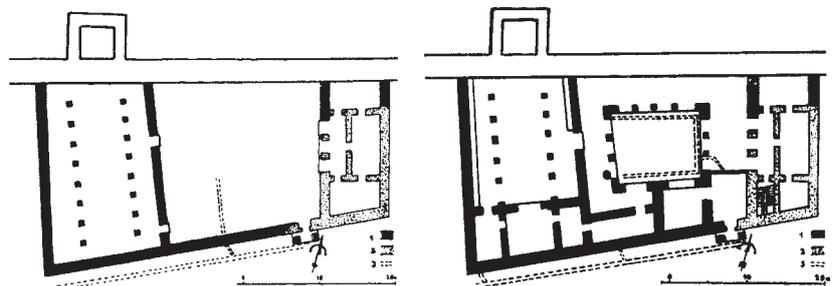
48 El-Lejjun (gouv. Kerak/JOR): Crawford 2006. – Tokod (Kom. Komárom-Esztergom/H): Visy 2003, 84-86. – Cluijk (prov. Noord-Brabant/NL): Johnson 1983, 146.

49 See note 37.

50 Radoslavova/Dzanev 2003, 133f.

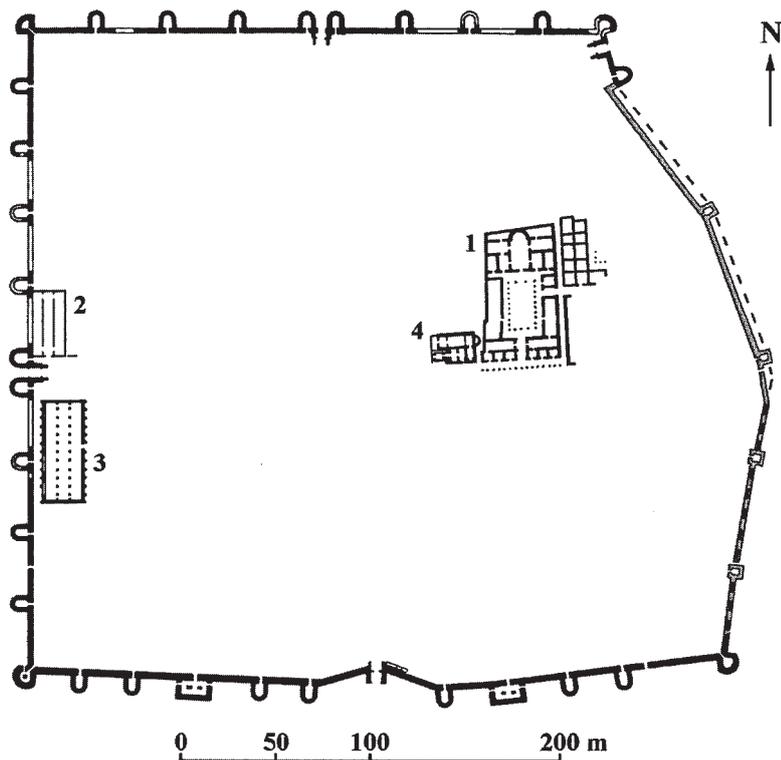


**Fig. 16** Istrus (Histria/Istria; jud. Constanța/RO). The late Roman warehouses sector: **1-4** *horrea*. – **5** apsidal building. – (After Histria I, 1954).



**Fig. 17** Callatis (Mangalia; jud. Constanța/RO). Late Roman *horreum* complex: **Left** 4<sup>th</sup>-century phase. – **Right** late 5<sup>th</sup> to 6<sup>th</sup>-century phase. – (After Barnea 1977).

Still in Moesia Inferior, a public warehouse can be found at the centre of Nicopolis ad Istrum (Nikjup; obl. Veliko Tarnovo/BG; **fig. 29, 22**). The north wing of the Trajanic/Hadrianic agora of the city consisted of a monumental Ionic stoa and a sumptuous hall of unknown functions, which were damaged during the 3<sup>rd</sup> century. In the subsequent period of repair they were replaced by two structures built with opus mixtum masonry, with outer dimensions 19 m × 43 m (west) and 19.45 m × 67.4 m (east) (**fig. 19**). These late antique buildings were divided into three aisles by rows of large pillars, and at least parts of them probably had wooden floors raised on a *suspensura* built of reused limestone blocks. A coin of Constantine found in the mortar of the masonry provides a *terminus post quem* for their construction. It is unclear when the life of the two buildings ended; the excavation reportedly produced 197 coins, dating from Gratian (367-383) to Leo I (457-474) and clay floors of later structures over the destruction layer. The two buildings were destroyed by an earthquake, perhaps in the late 4<sup>th</sup> or early 5<sup>th</sup> century. They are unlikely to have been functional later than the mid-5<sup>th</sup> century, when the early Roman city of Nicopolis declined and was gradually replaced by

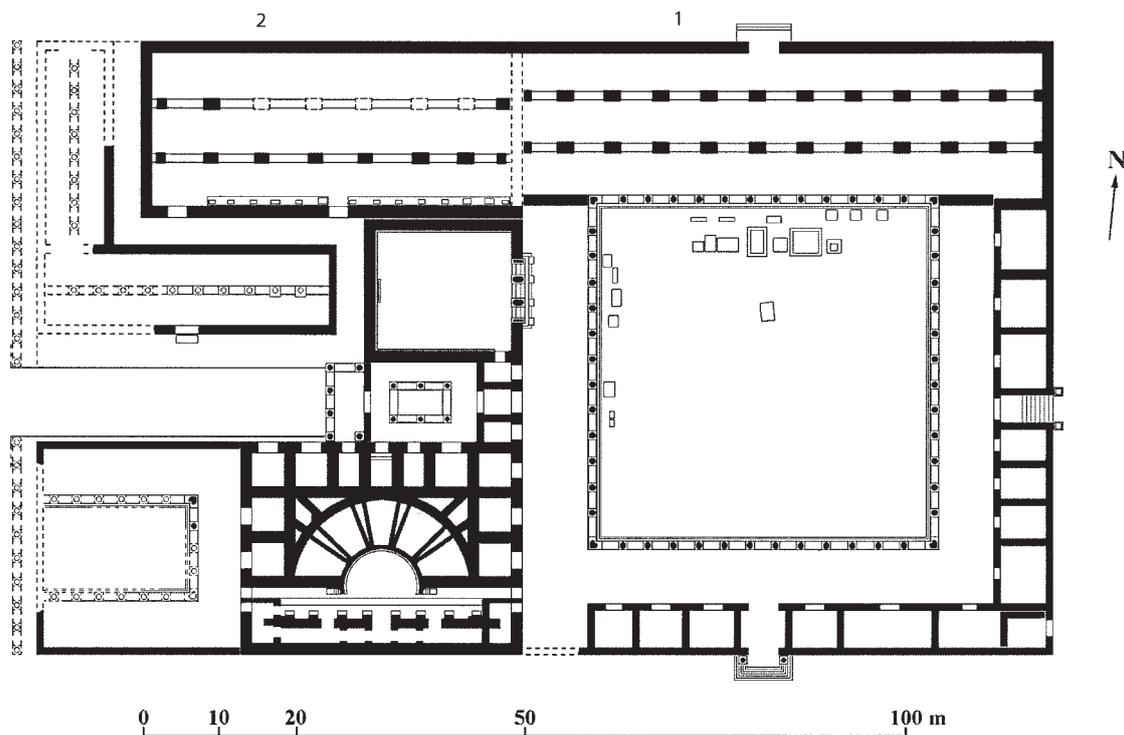


**Fig. 18** Abrittus (Razgrad/BG). General plan of the city: 2-3 horrea. – (After Dintchev 2009b).

the late antique fortified site<sup>51</sup>. Based on their position on the agora, both buildings were interpreted by their excavators as civic, the east one being regarded as a basilica. The thought is plausible, given the topographical context, but the architecture and austere utilitarian form of the buildings are incongruent with the setting. There was evidently no effort to integrate them in the monumental aesthetics of the agora. The so-called civil basilica does not even seem to have had access to the piazza; it had an entrance on the neighbouring street, while its south wall seems to have formed an uninterrupted new north limit of the agora. The construction of the two warehouses did not necessarily mean the end of administrative business on the agora of Nicopolis ad Istrum, although the replacement of the monumental Ionic stoa by the utilitarian *horreum* caused a substantial reduction of the space available and considerable aesthetic degradation. Nevertheless, an effort was made to keep up the monumentality of the civic ensemble, and five statues were relocated and set up in front of the south wall of the east *horreum* («civil basilica»)<sup>52</sup>. Given the fact that cities and settlements near Nicopolis received *horrea* rather than basilicas in the same period, it seems convincing that this city also went through the same process. It is, of course, remarkable that Nicopolis gave up such a fine structure to build a warehouse, but the choice can be understood, if we consider the advantages of accessibility through the *cardo* and *decumanus maximus*. The same reason seems to have dictated the building of *horrea* at the centre of Tropaeum and Zaldapa and, as we shall see later on, at Cabyle (Kabile; obl. Jambol/BG), Sirmium (Sremska Mitrovica/SRB) and Scupi (Skopje/MK).

Further south, in the Late Roman province of Thracia, the settlement of Cabyle (Kabile; **fig. 29, 2**) was organised as a city in the early 4<sup>th</sup> century, after several centuries of occupation as an auxiliary fort and village

<sup>51</sup> Ivanov/Ivanov 1994, 73. 97. – Vladkova 2007, 208-214. – <sup>52</sup> Ivanov/Ivanov 1994, 60. 63. Dintchev 2009a, 76-78.



**Fig. 19** Nicopolis ad Istrum (Nikjup; obl. Veliko Tarnovo/BG). The Roman agora: **1** east *horreum* («basilica»). – **2** west *horreum* («aedes 7»). – (After Dintchev 2009a).

of veterans. Its fortifications were rebuilt and a large *horreum* (37.35 m × 12.45 m) was erected at the centre of the settlement. The excavation has not been published and little is known about the finds. Two buildings that were probably also *horrea* were built against the north and east wall of the fort of Cabyle (a separately fortified part of the late Roman town). These buildings also remain unpublished and their chronology cannot be defined with certainty<sup>53</sup>. Cabyle lay near the river Tonzus (mod. Tundzha), a tributary of the Hebrus (mod. Maritsa), which may have been used for transporting annony supplies.

Another newly-founded late Roman city in Thracia was Diocletianopolis (Hissar; obl. Plovdiv/BG; **fig. 29, 8**). A 4<sup>th</sup>-century *horreum* (23.4 m × 15.3 m) was excavated within the city's military quarter. It was a simple rectangular building used for storing goods in jars<sup>54</sup>.

Two storehouses were recently excavated at Maronea (Agios Charalambos; periferia Anatolikes Makedonias kai Thrakes/GR; **fig. 29, 17**) which was probably the only notable port in the western part of the Late Roman province of Rhodopa in the 4<sup>th</sup> century (**fig. 20**). The buildings were two parallel two-aisled halls, 8.9 m × 45 m, located near the port, in what seems to have been an area of monumental buildings. The excavator ascribed them to the early 3<sup>rd</sup> century and their abandonment the late 4<sup>th</sup>. Maronea must have been a gathering centre of the *annona* collected from Rhodopa, whence the goods were shipped to the frontier<sup>55</sup>.

One of the largest *horrea*-bases has been found at Serdica (Sofia/BG; **fig. 29, 29**), provincial capital of Dacia Mediterranea and one of the most important hubs of communications, defence and administra-

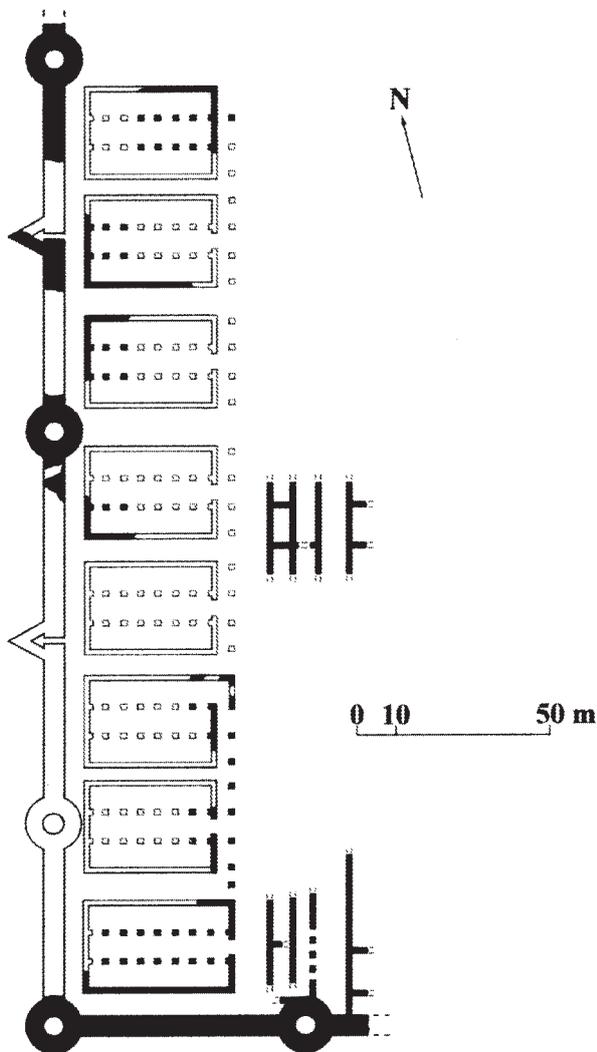
<sup>53</sup> Excavation reports in: Археологически Открития и Разкопки 1978, 67f.; Археологически Открития и Разкопки 1979, 70; Nikolov 2003, 318-323. – The site and buildings are visible on Google Earth, coordinates: 42 32 58 N, 26 28 59 E.

<sup>54</sup> Madzharov 1993, 150f.

<sup>55</sup> Kokotaki 2003, 14f. – The site and buildings are visible on Google Earth, coordinates: 40 52 27 N, 25 30 40 E.



**Fig. 20** Maronea (Agios Charalambos; periféria Anatolikes Makedonias kai Thrakes/GR). View of the excavated warehouses. – (Photo E. Rizos).



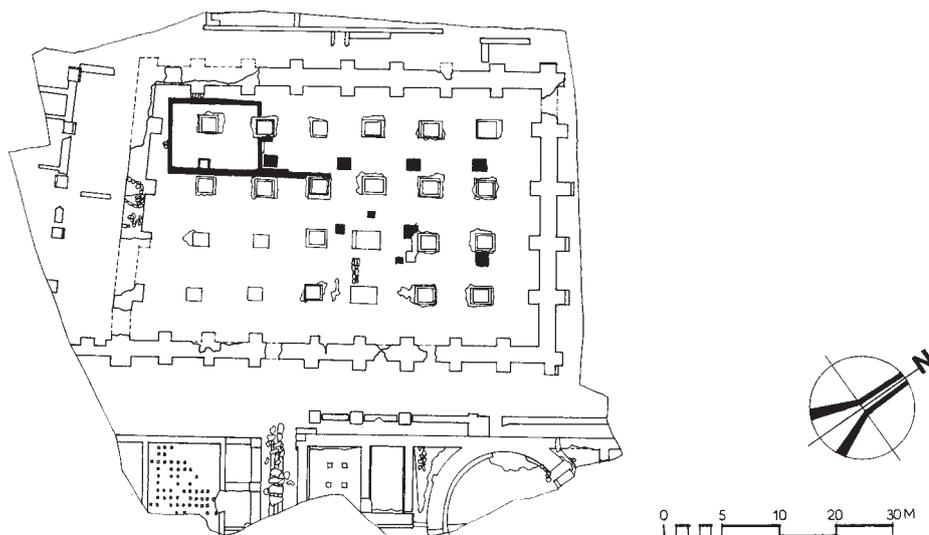
**Fig. 21** Serdica (Sofia/BG). Warehouses along the southwest walls. – (After Dintchev 2005).

tion in the central Balkans. Rescue excavations in central Sofia revealed a row of at least eight *horrea* filed along the western city-wall (fig. 21). The warehouses were three-aisled with an approximate average size of 20 m × 35 m each and were dated to the early 4<sup>th</sup> century. Once again, these buildings were initially misinterpreted as civil. As Dintchev has already argued, they have the architectural features and typical position of late Roman warehouses<sup>56</sup>. Serdica was probably a supply-centre of regional importance, connected to the Danube by the valley of the river Iskur (Oescus).

A central location, on the crossing of the main streets, was chosen for the building of a large warehouse at Sirmium (Sremska Mitrovica/SRB; fig. 29, 31), probably under the tetrarchy. The building (44 m × 22 m) was 5-aisled with 4 rows of 6 pillars and probably had a raised floor. It seems that it stood near monumental buildings (fig. 22)<sup>57</sup>. Sirmium's role in defence and administration was extremely important, since until the 440s it was the main residence-city of the Praetorian Prefects of Illyricum. Built on the river Sava (Savus) it was easily approachable from the Danube.

<sup>56</sup> Dintchev 2005, 279 f.

<sup>57</sup> Bosković et al. 1974, 608-610. – M. Jeremić in: Srejić 1993, 113 f.



**Fig. 22** Sirmium (Sremska Mitrovica; Sremski okrug/SRB). Central *horreum*. – (After Bosković et al. 1974).

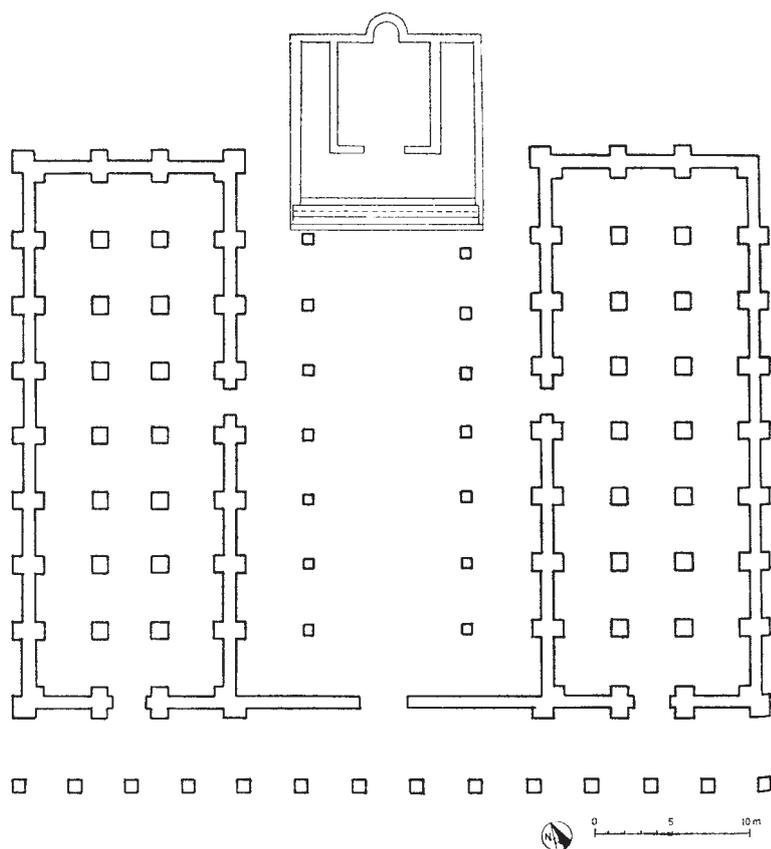
A large 4-aisled *horreum* (15 m × 65 m) occupied a central position on the decumanus maximus of Scupi (fig. 29, 28), provincial capital of Dardania. The building is very similar and probably contemporary with the *horrea* of Gamzigrad, Mediana and Sirmium. A small public bath was built within the *horreum* after its abandonment. The bath's plan recalls the 6th-century bathhouses found at Caričin Grad (Jablanički okrug/SRB)<sup>58</sup>. Scupi may have been a supply-centre of regional importance for forts in south Dardania and north Macedonia, which seem to have been densely garrisoned regions in Late Antiquity. The river Vardar (Axis), on whose left bank Scupi lay, must have been used for the transport of the goods.

In north Dardania, a notable-supply base was Sočanica (RKS; fig. 29, 20). Under the Principate, it was epigraphically attested as »*Municipium DD (Dardanorum?)*«, a civil centre closely related to the mines of the area. In Late Antiquity, the site is not mentioned by the sources or inscriptions, but it is likely to have preserved its civic/municipal status until the late 4<sup>th</sup> century, when it was destroyed and abandoned. With a sizeable unfortified settlement of about 30 ha, Sočanica played an important role in the *annona* network and was equipped with a complex of two three-aisled *horrea* with strong buttressed walls (43.3 m × 16 m and 42.7 m × 15.5 m). The buildings took over what seems to have been the forum and religious centre of the early Roman town, respecting a pre-existing temple which stood on the rear side of the courtyard between them. The complex was accessible from the street through a portico, in an arrangement reproducing the plan of the twin *horrea* of Trier, Milan and Aquileia (fig. 23). A very thin layer of abandonment was discerned under the debris of the collapsed *horrea*, but it produced no dating finds. The buildings are unlikely to have continued their life beyond the destruction and abandonment of the town in the late 4<sup>th</sup> century<sup>59</sup>. Finally, a 4<sup>th</sup>-century *horreum* was found within the fortified city of Horreum Margi in Moesia Superior (Čuprija; Pomoravski okrug/SRB; fig. 29, 10)<sup>60</sup>. Horreum Margi and »*Municipium DD*« were probably two of numerous supply-bases that used the river Velika Morava (Margus) and its tributaries to send their products to the Danube.

<sup>58</sup> Korakević 2002, 65-74. – Interestingly, a bath was built within an abandoned part of the *horreum* at Housesteads during the 4<sup>th</sup> century: Rushworth 2009, 311.

<sup>59</sup> Čerškov 1970, 14-46; Mladenović 2012, 24-26. 44. 199 cat. nr. 1450. The site and buildings are visible on Google Earth, coordinates: 43 03 06 N, 20 48 34 E.

<sup>60</sup> Mladenović 2012, 84 Nr. 287.



**Fig. 23** Municipium DD (Sočanica/RKS). Double horreum. – (After Srejšović 1982/1983).

## GENERAL REMARKS ON THE TETRARCHIC PERIOD AND THE 4<sup>TH</sup> CENTURY

It is clear that the most numerous and largest late Roman granaries/warehouses in the Balkans were urban. They thus allow us to identify the involvement of cities in the military supply network as a salient aspect of the tetrarchic military and administrative reforms in the region. The cities with their large storage facilities now probably performed productive functions previously confined to the countryside, probably making up for some of the numerous villas that were abandoned in the mid-3<sup>rd</sup> century. This fits with the impression mentioned earlier that the productive landscape of the north Balkans became more nucleated and centralised, now focusing on urban centres and a few very large estates. The involvement of cities in the *annona* had major implications for their socio-political character. Under the Principate, the cities were bases of the landed class and hubs of interregional commerce, political and cultural activities. They were in contact with, but clearly separated from sites of a primarily military and rural character. Now, however, their involvement in military supply meant a convergence with these realms and a degree of compromise of their urban character. The central positioning of warehouses and the fact that they outnumber virtually every other category of public building in the 4<sup>th</sup> century, except fortifications, reflects the institutional centrality of the *annona* in the administrative life of cities and its impact upon urban economy, society and culture.

The geographical positioning of late 3<sup>rd</sup>- and early 4<sup>th</sup>-century supply-bases, including cities, villas and forts, is remarkable for the way it takes advantage of the transport possibilities of rivers and their valleys, especially the network of tributaries of the Danube (**fig. 29**). The Yantra (ancient Iatrus) is a very illustrative example, since it linked the territory of Nicopolis ad Istrum to the forts of Iatrus and Novae. Similarly, the Iskur (ancient Oescus) connected Serdica with the city of Oescus (Gigen; obl. Plevn/BG) and its surrounding

villas; the Ogosta (ancient Augusta) connected Montana with the fortress-town of Augustae (Hurllets; obl. Vratsa/BG), while the Timok (ancient Timacus) connected Timacum Minus, Gamzigrad and Aquae. The vast river system of the Velika Morava (ancient Margus) was evidently a major transport artery through which products could travel to and from the Danube. It is also important to stress the presence of supply-bases at a distance of about 50km from the Danube: Tropaeum, Zaldapa, Abrittus, Nicopolis ad Istrum, Storgosia, Montana, Castra Martis, Gamzigrad, Timacum Minus and Horreum Margi. This suggests that a supportive network of settlements, very similar to the better known inner fortifications in Pannonia, was also provided for the Lower Danube frontier. Similar support zones dotted with fortifications and *horrea* probably existed also in Raetia, so that we may now regard them as a common pattern of defensive policy and organisation all along the Danube frontier<sup>61</sup>.

## THE THEODOSIAN PERIOD

The building of warehouses, which flourished under the tetrarchs and Constantine, seems to have lost much of its intensity after A. D. 350. As we saw above, the only examples dated to the third quarter of the 4<sup>th</sup> century are those of Iatrus and Transdrobeta/Pontes. Does that mean that the needs of the supply-system had been covered, or that the investment of the empire on the *annona* network yielded less than expected? It is possible that changes in the system of military supply and payments affected the built infrastructure of the *annona*. In the second half of the 4<sup>th</sup> century we have the first recorded steps towards the adoption of *adaeratio*, namely the commutation of rations into ration allowances, which gradually became an established practice by the 5<sup>th</sup> century<sup>62</sup>. Yet the introduction of cash payments by no means led to the abolition of payments and supply in kind and cannot provide a satisfactory explanation of the decline of warehouse building. Zosimus reports that, during Valens' confrontations with the Goths (367-369), special care was taken to secure the food supply of the troops and that annony imports were delivered to the Danube cities thanks to the efficient administration of the newly-appointed praetorian prefect of the East Auxonius<sup>63</sup>. Themistius also insists on the same theme in his panegyric given at Constantinople after the peace with the Goths in 370. Yet he goes on to mention civil unrest and food shortages prevailing prior to Valens' restoration of order: »Supplies for the military units have been dispatched, and a surplus of necessary things has been imported in advance [καὶ τροφή μὲν ἐξελήλαται τῶν καταλόγων, περιουσία δὲ ἀντεισῆκται τῶν ἀναγκαιῶν]. Thanks to this, the guards are not forced to fight against the empire's subjects instead of the barbarians, and to abuse the former because of their own destitution, while refraining from the latter because of the peace. For, I know not how, our soldiers have reversed the normal order of courage and fear: they despise the barbarians, while exceedingly fearing the farmers, and it is more terrible for them to be accused by the farmers than myriads of Scythians attacking!«<sup>64</sup>.

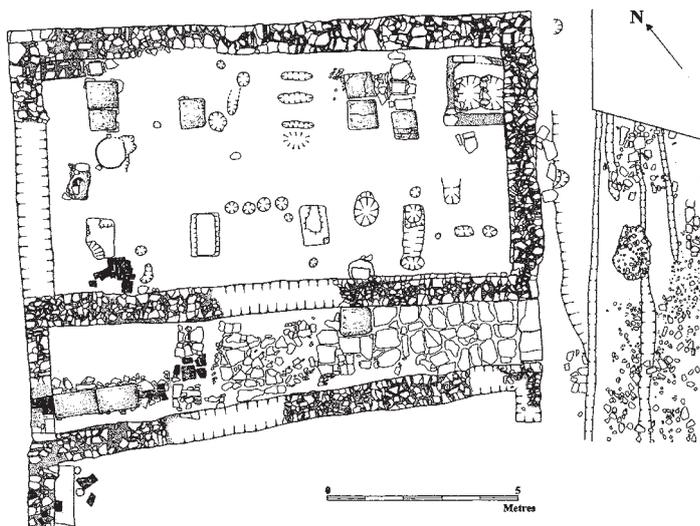
Disruptions in annony imports from the Mediterranean during the revolt of Procopius (365-366) probably increased disproportionately the pressure upon local farmers, causing tensions with the soldiers. The supply of the Danube troops relied on a balanced mixture of local production and external imports, which, if disturbed, could destabilise the frontier provinces, and that seems to have happened in the 360s. These events combined with the wars of the late 370s probably contributed to the sharp decline of villas and rural

<sup>61</sup> Mackensen 1999, 234-239.

<sup>62</sup> On *adaeratio*, see: Karayannopoulos 1958, 103f.; Schmidt-Hofner 2008, 212f. 315-320.

<sup>63</sup> Zosimus 4.10.3-4; Lenski 2002, 127-137.

<sup>64</sup> Themist. or. 10, 138 b-c (translation by the author).



**Fig. 24** Dichin (obl. Veliko Tarnovo/BG). Early 5<sup>th</sup>-century *horreum*. – (After Poulter 2007b).

supply-bases in the Balkans. All the villas with warehouses mentioned above, and many urban *horrea*, were abandoned by or around A. D. 400. By the mid-5<sup>th</sup> century, it seems none of the 4<sup>th</sup>-century *horrea* remained functional.

Newly-built examples known from the Theodosian period are very rare and small in size. A group of small warehouses (c. 14 m x 8 m each) occupied the western half of the fort of Dichin (obl. Veliko Tarnovo/BG), a few kilometres west of Nicopolis ad Istrum, which is thought to have been built as a fort for a small garrison of federates around A. D. 400 (fig. 29, 7). The warehouses were poorly built with mud-bricks and at least five of them had raised floors (fig. 24). They were destroyed with the rest of the fort in the 470s, during an invasion which left the site in ruins. Quantities of seeds including cereals, millet and pulses were found carbonised in the buildings, alongside pottery and amphorae from the Danube region and the Mediterranean<sup>65</sup>. Roughly contemporary with the *horrea* of Dichin, a large granary was built at the fort of Iatrus (Krivina; obl. Ruse/BG), following the destruction of the two 4<sup>th</sup>-century *horrea* of the site (fig. 29, 11). The structure (»building XVIII«) stood northeast of the Christian basilica, and consisted of two rooms, the north of which measured 18.7 m x 6.3 m x 19.3 m x 6 m and featured a raised floor (fig. 25). The building was erected in the early 5<sup>th</sup> century and was destroyed around A. D. 450, perhaps during the Hunnic wars<sup>66</sup>. Similar warehouses, dated to the early 5<sup>th</sup> century, were also recognised at the fortified settlements of Montana in Dacia Ripensis and Shumen in Moesia Inferior<sup>67</sup>.

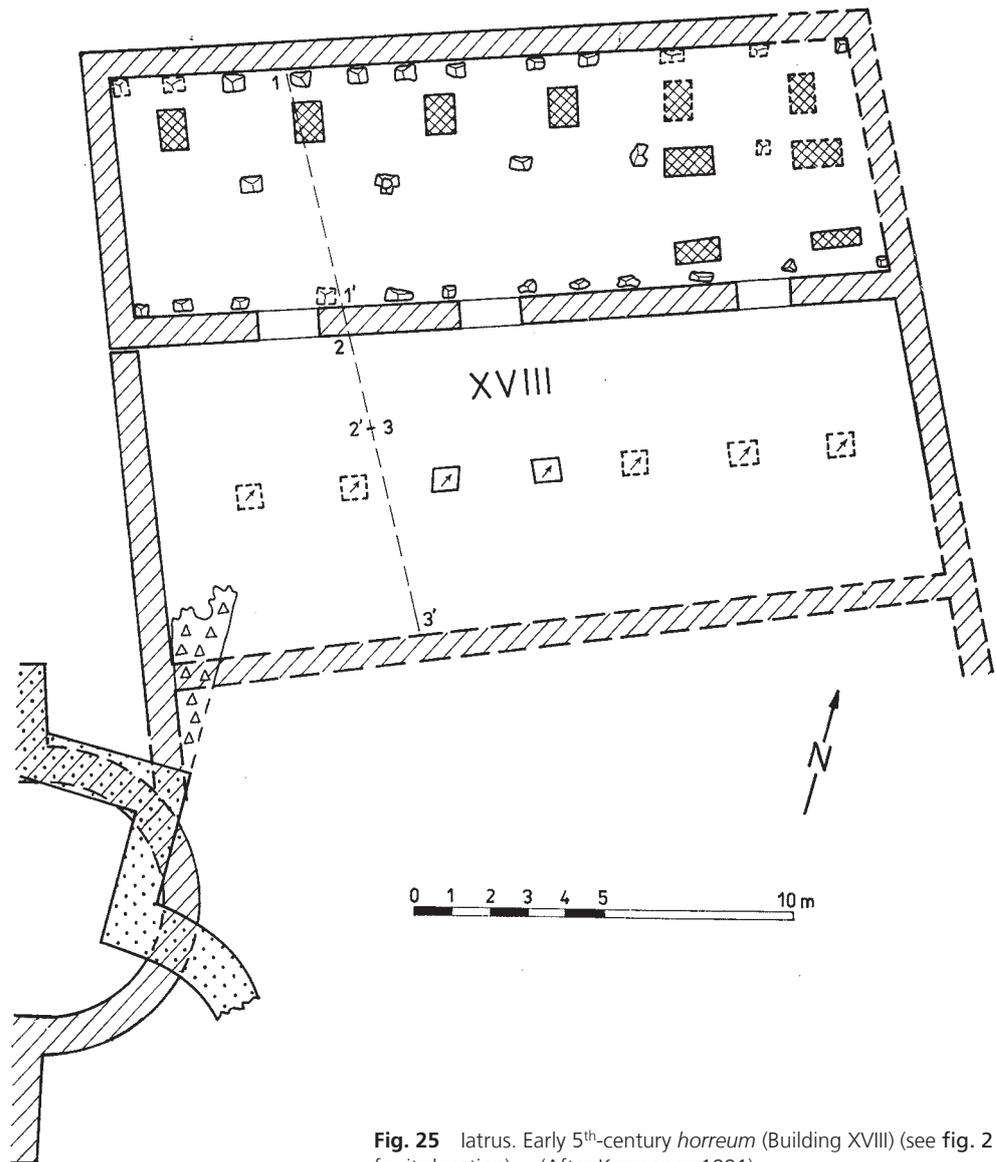
The few newly-built *horrea* of the Theodosian period demonstrate that the *annona* network continued to take advantage of rivers as transport arteries; supply centres continued to exist in areas and sites known to have played a role in the network during the 4<sup>th</sup> century, namely the region of the Yantra (Dichin and Iatrus), and the Ogosta (Montana). The plain of Pliska probably also retained its importance for the supply-network, with Shumen now rising as a new central place. On the other hand, the construction of new warehouses now follows the broader transformation of the settlement landscape in the northern Balkans after the war with the Goths. This was the age of small fortified settlements and hilltop-sites like Dichin and Dobri Dyal (Veliko Tarnovo/BG) near Nicopolis ad Istrum (both of a size of 0.5-1 ha), Shumen, Pernik, Sadovets, Cherven, Zikideva (Tsarevets Hill; obl. Veliko Tarnovo/BG), and many others<sup>68</sup>. Excavations on sites of this

<sup>65</sup> Poulter 2007b, 87-91; 2004, 244-246; 1999. – Swan 2007. – Grinter 2007. – Dintchev 2010.

<sup>66</sup> Kuzmanov 1991, 112-116. – Stančev 1995, 124-127.

<sup>67</sup> Dintchev 2005, 284f.

<sup>68</sup> Dichin (obl. Veliko Tarnovo/BG): see note 65. – Dobri Dyal (obl. Veliko Tarnovo/BG): Poulter 2013.



**Fig. 25** Iatrus. Early 5<sup>th</sup>-century *horreum* (Building XVIII) (see fig. 2 for its location). – (After Kuzmanov 1991).

category have shown that they were inhabited by a population of men, women and children (found in burials), including farmers and soldiers (finds include both weapons and agricultural equipment). They clearly played a role as centres of production and storage of food supplies, but their potential was very restricted in comparison to annonary centres of the 4<sup>th</sup> century. Very often, their location at high altitudes precluded agriculture on a serious scale<sup>69</sup>. Things were probably better at settlements on plains, as suggested by the *horrea* of Dichin, though archaeobotanical evidence from both Dichin and Nicopolis ad Istrum shows a significant recession in the cultivation of wheat and cereals, and a greater emphasis on the production of legumes and millet, suggestive of horticulture within or near the walled areas – in other words, a serious change in the scale of production<sup>70</sup>.

<sup>69</sup> Ch. Kirilov, Entstehung, Charakter und Niedergang der befestigten Höhensiedlungen im östlichen Balkan (5.-7. Jh. n. Chr.) [Lecture given at the workshop »New Cities in Late Antiquity«, Istanbul, 9-10 November 2013].

<sup>70</sup> Poulter 2007b, 77.



**Fig. 26** Zikideva (obl. Veliko Tarnovo/BG). Late 5<sup>th</sup> or 6<sup>th</sup>-century granary in the centre of the settlement. – (After Ditchchev 2006).

At the same time, settlements embodying the previous socioeconomic reality, namely villas and cities, enter a period of neglect, if not crisis. Despite the wars and dangers of the late 4<sup>th</sup> century, there appears to be no effort to improve the walls and infrastructure of cities north of the Haemus. Purposefully or by necessity, emphasis now is on small fortified settlements – in sharp contrast to several notable urban fortification projects south of the Haemus in southern Thrace and Macedonia (notably at Nicopolis ad Nestum, Apollonia-Sozopolis, Selymbria, Constantinople, Thessalonica, Stobi, Dion and Actia Nicopolis). At the same time, villas and forts were

transformed into villages, often fortified, while the quality of building throughout the Danube provinces fell precipitously<sup>71</sup>. The agricultural, civil and military landscape of the Roman Lower Danube was approaching its end.

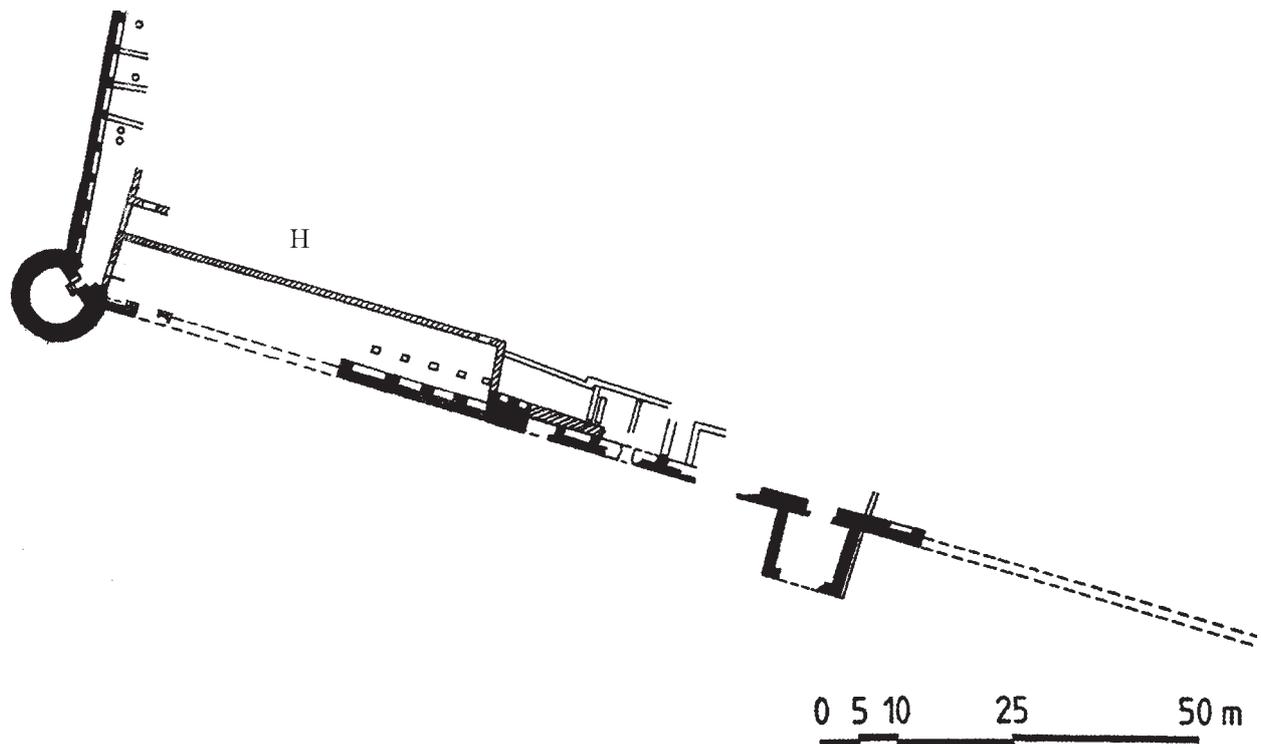
The transformation of the Roman military system from the 380s on was probably instrumental to the change. As the regular army forces of the Danube were extensively replaced by communities of warrior-farmers (*limitanei* and *foederati*), the century-long interdependence between villa-based landownership and military units was broken. With the departure of the regular army, one of the main components of the Roman institutional and economic networks was removed, followed by its main civilian partner, the villa-based landownership. The result was the disintegration of settlements embodying these two societal domains, namely forts, villas and cities, and their replacement by a society of warrior farmers whose mark on the archaeological record was small fortified settlements.

## THE LATE 5<sup>TH</sup> AND 6<sup>TH</sup> CENTURIES

The departure of the rebellious Ostrogothic leaders and the effective dissolution of the autonomy of the *foederati* allowed a tighter control over the Danube provinces in the 490s and better conditions for the development and restoration of the Roman economy and society. The empire invested heavily on building; for the first time since the 4<sup>th</sup> century, urban fortifications and forts were rebuilt on a scale and at an intensity suggestive of a generously funded and consistently planned building drive. Unlike the Theodosian period, the Anastasian and Justinianic building schemes put great emphasis on cities and forts of the earlier periods, and, quite remarkably, they even produced a number of new cities like Zikideva, Iustiniana Prima (Caričin Grad; Jablanički okrug/SRB), and the new fortified section of Nicopolis ad Istrum. The aim was the restoration of Roman power, with its institutional and material infrastructure, to levels preceding the disruptions of the 5<sup>th</sup> century. In the administrative sphere, this period was marked by the reorganisation of provincial administration through the foundation of Iustiniana Prima as the prospective new capital of Dacia, and the creation of the *quaestura exercitus*<sup>72</sup>. In this framework, warehouse building seems to have resumed, for the last time in Antiquity. We currently know seven sites that received warehouses in the late 5<sup>th</sup> and 6<sup>th</sup> centuries.

<sup>71</sup> On the decline of villas, see: Henning 1987, 35-41; Poulter 2004.

<sup>72</sup> For these changes see: Sarantis 2013, 787-790; Torbatov 1997; Curta 2002; Gkoutzioukostas/Moniaros 2009.



**Fig. 27** Tzoides (obl. Sliven/BG). Southwest corner of the fortification with 6<sup>th</sup>-century *horreum* (H). – (After Shtereva 2006).

A *horreum* stood in the central-north part of the late-antique city of Zikideva in Moesia Inferior (Veliko Turnovo/BG; **fig. 29, 39**), which can be dated to the late 5<sup>th</sup> or 6<sup>th</sup> centuries when the city was founded and fortified. Simply designed and modest in size (12 m × 6 m), the building had rectangular pillars probably supporting a raised floor (**fig. 26**)<sup>73</sup>. In the same region as Zikideva, geophysical survey and excavation at the southern fortification of Nicopolis ad Istrum have located a series of oblong buildings (c. 6 m × 80 m), at least parts of which could be *horrea* (**fig. 29, 22**)<sup>74</sup>. To the south of the Haemus, two two-aisled warehouses of the late 5<sup>th</sup> or 6<sup>th</sup> century (8 m × 55 m) have been excavated at the south-west corner of the fortified settlement of Tzoides (Sliven/BG; **fig. 29, 32**) in the province of Haemimontus (**fig. 27**). Tzoides/Sliven is very close to Cabyle, which, as we saw earlier, was an important gathering centre with large *horrea* in the 4<sup>th</sup> century<sup>75</sup>.

Turning to north Illyricum, similar storehouses to those of Tzoides, though smaller (c. 9 m × 29 m), have been excavated northwest of the circular piazza of Iustiniana Prima (**fig. 28; 29, 5**). The discovery of a mill and bread-oven next to these buildings support their identification as granaries<sup>76</sup>. More or less contemporary seems to be an also two-aisled warehouse with an outer pier-supported portico found within the fort of Taliata (Veliki Gradac, Serbia; **fig. 29, 34**). It was built during the restoration of the fort under Justinian<sup>77</sup>.

<sup>73</sup> Dintchev 2005, 285.

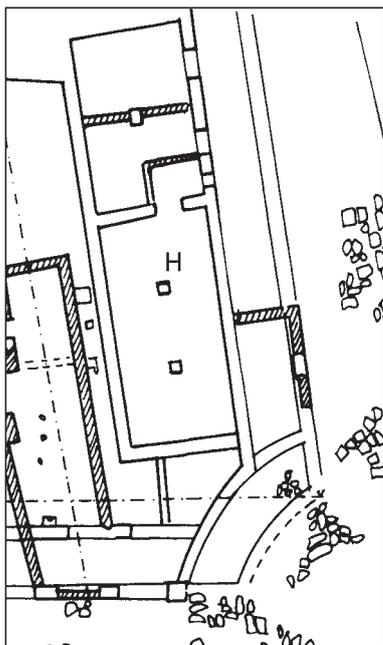
<sup>74</sup> Poulter 1995, 40f. 201.

<sup>75</sup> Shtereva 2006, 51. – The site is visible on Google Earth, coordinates: 42 31 35 N, 22 20 00 E.

<sup>76</sup> Reports by D. Mano-Zisi in: *Starinar* 3-4, 1952-1953, 165; *Starinar* 5-6, 1954-1955, 158-159. 164. – Kondić/Popović 1977, 71-74; Bavant 1984, 276. Recent excavation on the same site

revealed a new warehouse of the same type: Ivanišević (forthcoming). – Flour and bread production next to granaries was probably a usual practice, since relevant installations have been located next to *horrea* at Keszthely-Fenekpuszta (Kom. Zala/H; belonging to the 4<sup>th</sup> century) and at Palmyra (tetrarchic): Heinrich-Tamáská 2011, 681; Kowalski 1998, 203f.

<sup>77</sup> Mladenović 2012, 219 cat. nr. 1655.



**Fig. 28** Iustiniana Prima (Caričin Grad; Jablanički okrug/SRB). Circular piazza with warehouse to the northwest (H). – (After Bavant 1984).

Finally, 6<sup>th</sup>-century warehouses housing jars were found in Macedonia, in the fortified settlements of Vinica (MK; **fig. 29, 37**) and Louloudies (near Kitros; periphéria Kentrikes Makedonias; **fig. 29, 14**). Both sites have been interpreted as episcopal centres by their excavators, although only Louloudies can be conclusively shown to have been a site of ecclesiastical character; Louloudies is a compact *quadriburgium* enclosing a basilica, a residential complex and buildings for storage and workshops. The excavations of the site also produced quantities of LR2 amphorae which are thought to have been used for the transportation of annony olive oil<sup>78</sup>.

These are the largest and strongest warehouses/granaries built in the Balkans after an interval of almost two centuries. *Horrea* like those of Nicopolis, Sliven, Veliki Gradac, and Caričin Grad, demonstrate that the tradition of designing and building these structures continued with only insignificant changes<sup>79</sup>. Of course, the number of the examples is very small in comparison to the 4<sup>th</sup> century. This is

significant given the fact that none of the earlier *horrea* (except perhaps Capidava and Callatis in Scythia Minor) seems to have remained functional or to have been rebuilt in the 6<sup>th</sup> century. However, this impression may be the product of the current state of research and thus could change in the future. It is no coincidence that the Yantra region features so prominently throughout this survey: 4<sup>th</sup>-century *horrea* are known from Nicopolis and Novae, 5<sup>th</sup>-century ones from Dichin and Iatrus, and 6<sup>th</sup>-century ones from Zikideva and perhaps Nicopolis. This shows that the area consistently kept its importance in the supply-network despite changing conditions, and that new storage facilities were built in every period. This continuity was most probably not exceptional. What is exceptional is the intensity of archaeological attention the Yantra region has received, which has rendered its diachronic role in the local supply network so visible.

It must also be pointed out that most of these warehouses are found on sites that had the official status of a city (Nicopolis ad Istrum, Zikideva, Tzoides, Iustiniana Prima), suggesting that the cities once again became centres of the *annona* network. Warehouse building in cities seems to have resumed together with the rebuilding of urban fortifications – in clear contrast with the Theodosian period when, as we saw earlier, newly-built warehouses and fortifications are known only from small fortified settlements. Since the dominant civic institution of the 6<sup>th</sup> century was the church, and the sites discussed here are attested as episcopal sees, it can tentatively be suggested that the ecclesiastical authorities were now involved in the process of collecting military supplies. The power of the church as a landowning institution is reflected in

<sup>78</sup> On Vinica: Mikulčić 2002, 256f. cat. nr. 169. The site is visible on Google Earth, coordinates: 42 52 38 N, 22 30 09 E. On Louloudies: Karagiorgou 2001, 143; Poulter et al. 1998, 463f. 483-485. 505f.; Marke 2004. The site is visible on Google Earth, coordinates: 40 20 36 N, 22 36 04 E

<sup>79</sup> Very similar buildings of a slightly later date were discovered at Recopolis in Spain. Although initially interpreted as a palace, it was recently proposed to interpret them as granaries. Arce 2011, 296f.



Fig. 29 Sites of late Roman *horrea* in the Balkans. – (Map M. Athanson).

a novel of 544 which gave special permission to the bishops of Tomis and Odessus to alienate ecclesiastical property for the redemption of captives<sup>80</sup>. The church probably managed substantial estates of land and may have been a partner of the state in supplying the troops. The presence of granaries just next to the fortified acropolis of Caričin Grad, which perhaps protected the headquarters of the most important churchman of north Illyricum, could support this view. Similarly, the warehouse at the fortified ecclesiastical centre of Louloudies is a witness to the power of bishops as managers of estates in Macedonia. Bishops are otherwise epigraphically known to have built granaries in the same period in the cities of Arethusa (Rastan; gov. Homs/SYR) and Tella-Constantina (Viranşehir; Şanlıurfa ili/TR) in Mesopotamia<sup>81</sup>.

<sup>80</sup> Jones 1964, 896f.; Nov. Iust. 120 (544), 9.

<sup>81</sup> Arethusa: IGLS 2081. Tella/Constantina: Humann/Puchstein 1890, 405; Greatrex/Lieu 2002, 240-243. For a plan of Tella/

Constantina and earlier bibliography on the city, see: Keser-Kayaalp 2013; Mundell Mango 2000, 192f. fig. 9.

Despite the efforts of Anastasius and Justinian's governments, the recovery of productivity in the Balkans was slow and difficult. Anastasius ordered that the emergency measure of *coemptio* should be permanently applied in the diocese of Thrace, because frequent barbarian incursions made it difficult for supplies to be produced and collected in normal fashion. The situation probably remained unchanged in the times of Justinian, since the relevant decree was included in the Codex Justinianus. Justinian's decision to extend the validity of this law to the whole of Thrace and Illyricum demonstrates that the woes of the Moesian farmers were wide-spread. It seems that the hardships echoed in these laws were not isolated, but rather episodes of a prolonged period of impoverishment, aggravated by the behaviour of the Roman landed class: Justinian also intervened for the return of fields to poor peasants in Moesia Inferior, which had been usurped by landowners in exchange for usurious loans<sup>82</sup>.

## CONCLUSIONS

These are the most significant examples of public warehouses known from the Balkan lands of the East Roman Empire between the late 3<sup>rd</sup> and the 6<sup>th</sup> centuries. Their architectural and structural features and the finds they produced could be only cursorily discussed here, but I hope to have shown that these buildings are reliable witnesses to the built infrastructure of the late Roman supply-network of the army, its functions, geographical background and diachronic transformations.

The current state of the evidence allows the reconstruction of a picture that can be summarised as following. The ambitious effort of the empire under the Tetrarchs and Constantine to secure a well-equipped supply network for the Danube army produced a large number of *horrea* in the late 3<sup>rd</sup> and early 4<sup>th</sup> centuries. The revival and building of large villas and the involvement of cities as principal gathering bases suggest that the production of supplies was now organised in a highly centralised way with the involvement of the civil authorities and great landowners. However, it seems that the building of public warehouses lost much of its importance after the mid-4<sup>th</sup> century, and declined even further after the wars and crises of the 380s. Great estates and villa-based agriculture collapsed, leaving a gap that may have been partly filled by small fortified settlements<sup>83</sup>. The role of cities as annony centres also declined, and all the urban *horrea* gradually fell out of use. A new building drive, reflected in the few late 5<sup>th</sup>- and 6<sup>th</sup>-century warehouses, probably aimed to restore the supply-network to its initial effectiveness, but with limited effect.

One may anticipate that this picture will be altered by future research, but it is hard to predict whether the broader pattern emerging from this survey will change substantially. The rarity of *horrea* in the 5<sup>th</sup> and 6<sup>th</sup> centuries is problematic and may be due to the fact that the 4<sup>th</sup> century is better represented in our archaeological record, since the most extensively excavated sites are cities, forts and villas with a continuous life from the Principate. The settlement landscape of the 5<sup>th</sup> and 6<sup>th</sup> centuries, and its principal elements, have been less extensively investigated, and it is likely that several examples of warehouses from that period still await excavation – the discoveries at Dichin confirm that very clearly. Yet it seems unlikely to me that the numbers and size of early 4<sup>th</sup>-century *horrea* will be surpassed, since they probably represent a

<sup>82</sup> On *coemptio*: Jones 1964: 840; Cod. Iust. 10.27.1, 10.27.2 (§ 5-10) (decree of Anastasius, 491-505). On the landowners of Moesia Inferior: Nov. Iust. 32-34 (535). <sup>83</sup> Poulter 2007b, 92-94.

true high point in this domain of building, in the context of a great investment by the state on the system of the military *annona*.

## APPENDIX: A NOTE ON THE EASTERN FRONTIER

In the current state of our knowledge, a survey of late antique *horrea* from the provinces of the Eastern frontier yields much poorer and less coherent results than those deduced from the Balkans. Unlike the many examples known from Europe, the securely identified late-antique warehouse/granaries in the East are very few. Nevertheless, the written sources confirm that urban *horrea* were a necessary kind of public building, especially in times of war: warehouses were among the public buildings erected in the new cities of Theodosiopolis in Armenia (built under Theodosius II) and Dara-Anastasiopolis in Mesopotamia (under Anastasius)<sup>84</sup>; in 531, Justinian sent the former praetorian prefect Demosthenes with funds to build granaries in the cities of the East, preparing them for the imminent war with Persia<sup>85</sup>.

A late-antique warehouse used to be visible until the early 20<sup>th</sup> century at Tella-Constantina in Mesopotamia. The same building is most probably commemorated by an inscription dating from 543, which names a bishop as the commissioner of its construction. A bishop also built a warehouse at Arethusa in Syria in 498<sup>86</sup>. The archaeologically investigated examples of *horrea* in the East are few. The best known and most extensively excavated and studied ones are those of Caesarea Maritima. These include an interesting variety of buildings, some of which are most probably to be associated with the exports of annonary products from Palestine, and some seem to be privately owned<sup>87</sup>.

Examples of warehouses from military sites include a warehouse at the south-east corner of the fort of el-Lejjun, one at the south end of Diocletian's fort at Palmyra and two tri-partite *horrea* near the main gate of the fort of Nag al-Hagar. All of them date from the tetrarchy or the early 4<sup>th</sup> century. The Palmyrene example seems to have been rebuilt under Justinian<sup>88</sup>.

These few examples do not represent the actual situation in an area where military presence was heavy throughout late antiquity, and where the *annona* functioned intensively and uninterruptedly. That so few granaries are known should rather remind us of how much archaeological work remains to be done on the Roman frontier in the East.

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<sup>84</sup> The granaries complex of Theodosiopolis (Erzurum/TR) was known as the Augusteum: Moses of Chorene 3.59, quoted by Adontz 1970, 119). Dara: Ps.-Zacharias of Mytilene, 7.6 (166) (see Greatrex et al. 2010). Cyril and Marlia Mango believed that the complex of vaulted oblong halls preserved on the west walls of Dara were *horrea*: Mango 1985, 40 note 20; Mundell Mango 2000, 193. Recent excavation, however, revealed a fountain on the south side of the building, suggesting that the structure was probably a cistern.

<sup>85</sup> Malalas 18.63 (467).

<sup>86</sup> See note 81.

<sup>87</sup> Patrich 1996; Stabler et al. 2008.

<sup>88</sup> El-Lejjun: Crawford 2006, 235-240; Gregory 1997, 356. – Palmyra: Kowalski 1998, 203; Intagliata 2014, 189-190. – Nag al-Hagar: Wareth/Zignani 1992, 202.

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## ZUSAMMENFASSUNG / SUMMARY / RÉSUMÉ

### Zentren des spätrömischen Militär-Versorgungsnetzwerkes auf dem Balkan: eine Überblicksstudie zu den spätantiken *horrea*

Der Beitrag ist eine Studie zur Bebauungsinfrastruktur der *annona militaris* in den Balkanprovinzen des Römischen Reiches vom späten 3. bis 6. Jahrhundert n. Chr. mithilfe einer Untersuchung der öffentlichen Warenlager (*horrea*). Durch Ausgrabungen seit dem 19. Jahrhundert sind mehrere spätantike *horrea* in dieser Region bekannt, die uns erlauben, die Infrastruktur der *annona* bemerkenswert detailgenau zu betrachten. Dieses reichhaltige Architekturmaterial kann unser Verständnis von der Funktion, Entwicklung und Umbildungen des Versorgungsnetzwerkes bis zum Ende der Antike grundlegend voranbringen. Die Beispiele werden chronologisch und gemäß ihres Siedlungskontextes untergliedert. Die große Mehrheit datiert ins späte 3. und 4. Jahrhundert, während die Belege aus dem 5. und 6. Jahrhundert wesentlich seltener sind. Die umfangreiche frühe Gruppe (spätes 3. und 4. Jahrhundert) wird zuerst diskutiert, unterteilt in drei Untergruppen nach ihrem Siedlungskontext (Militärlager und kleine befestigte Siedlungen, Villen und ländliche Siedlungen, Städte). Die wenigen jüngeren Beispiele werden in eigenen Abschnitten behandelt.

Die ehrgeizigen Bestrebungen des Reiches unter den Tetrarchen und Konstantin, ein gut ausgestattetes Versorgungsnetzwerk für die danubische Armee sicherzustellen, ergaben eine große Anzahl an *horrea* im späten 3. und 4. Jahrhundert. Der Bau bzw. Wiederaufbau großer Villen sowie die Einbeziehung von Städten als vornehmliche Sammelplätze lässt vermuten, dass die Produktion der Versorgungsgüter nun in hochzentralisierter Weise durch die Einbeziehung der zivilen Autoritäten und Großgrundbesitzer organisiert wurde. Jedenfalls scheint der Bau öffentlicher Lagerhäuser nach der Mitte des 4. Jahrhunderts seine Bedeutung eingebüßt zu haben und nach den Kriegen und Krisen der 380er Jahren weiter niedergegangen zu sein. Großgrundbesitz und Villenwirtschaft brachen zusammen und hinterließen eine Lücke, die teilweise von kleinen befestigten Siedlungen gefüllt worden sein könnte. Die Rolle der Städte als Proviantlager ging ebenfalls zurück, und allmählich kamen alle städtischen *horrea* außer Nutzung. Eine neue Bebauungskampagne, vertreten von den wenigen Lagerhäusern des späten 5. und 6. Jahrhunderts, zielte möglicherweise auf ein Wiedereinrichten des Versorgungsnetzwerkes zu seiner ursprünglichen Leistungsfähigkeit, aber sehr wahrscheinlich mit geringem Erfolg.

## Centres of the Late Roman Military Supply Network in the Balkans: a Survey of *horrea*

This article presents a study of the architectural infrastructure of the *annona militaris* in the Balkan provinces of the Roman Empire from the late 3<sup>rd</sup> to the 6<sup>th</sup> century AD through a survey of public warehouses (*horrea*). Excavations since the 19<sup>th</sup> century have revealed several late antique public warehouses in this region, which allow us to follow the infrastructure of the *annona* in remarkable detail. This rich architectural material can substantially promote our understanding of the function, development and transformations of the supply-network into the end of Antiquity. The examples are categorised chronologically and according to their settlement context. The vast majority dates from the late 3<sup>rd</sup> and 4<sup>th</sup> centuries, while those from the 5<sup>th</sup> and 6<sup>th</sup> centuries are much fewer. The large early group (late 3<sup>rd</sup> and 4<sup>th</sup> centuries) is discussed first, divided into three subcategories of settlement context (forts and small fortified settlements, villas and rural sites, cities), while the few later examples are discussed in separate sections.

The ambitious effort of the Empire under the Tetrarchs and Constantine to secure a well-equipped supply network for the Danubian army produced a large number of *horrea* in the late 3<sup>rd</sup> and early 4<sup>th</sup> centuries. The revival and building of large villas and the involvement of cities as principal gathering bases suggest that the production of supplies was now organised in a highly centralised way with the involvement of the civil authorities and great landowners. However, it seems that the building of public warehouses lost much of its importance after the mid-4<sup>th</sup> century, and declined even further after the wars and crises of the 380s. Great estates and villa-based agriculture collapsed, leaving a gap that may have been partly filled by small fortified settlements. The role of cities as annonary centres also declined, and all the urban *horrea* gradually fell out of use. A new building drive, reflected in the few late 5<sup>th</sup>- and 6<sup>th</sup>-century warehouses, probably aimed at restoring the supply-network to its initial effectiveness, but probably to limited effect.

## Les centres du réseau de ravitaillement militaire tardo-romain dans les Balkans: une étude synthèse sur les *horrea* tardo-antiques

Cet article étudie l'infrastructure bâtie de l'*annona militaris* dans les provinces balkaniques de l'empire romain de la fin du 3<sup>e</sup> au 6<sup>e</sup> siècle ap. J.-C. par une prospection des entrepôts publics (*horrea*). Depuis le 19<sup>e</sup> siècle, plusieurs fouilles ont mis au jour des entrepôts publics de l'Antiquité tardive dans ces régions, permettant de suivre très en détail l'infrastructure de l'*annona*. Il s'agit d'un matériau architectural très riche, qui permet d'approfondir de manière substantielle notre compréhension du fonctionnement, du développement et des transformations du réseau de ravitaillement jusqu'à la fin de l'Antiquité. Les exemples sont catalogués chronologiquement et selon le contexte d'habitat. La grande majorité date de la fin du 3<sup>e</sup> et du 4<sup>e</sup> siècle, ceux des 5<sup>e</sup> et 6<sup>e</sup> siècles étant bien moins nombreux. On discute d'abord le grand groupe (fin 3<sup>e</sup> et 4<sup>e</sup> siècles) subdivisé en trois catégories de contextes d'habitat (forts et petits habitats fortifiés, villas et sites ruraux, et les villes), pour aborder ensuite à travers différentes sections les quelques exemples plus tardifs.

Les efforts ambitieux développés par l'empire sous les Tétrarques et Constantin en vue de sécuriser le réseau de ravitaillement, bien équipé, pour l'armée du Danube ont créé un grand nombre d'*horrea* à la fin du 3<sup>e</sup> et au début du 4<sup>e</sup> siècle. La construction ou restitution de grandes villas, ainsi que l'implication des villes en tant que bases principales de stockage, suggèrent une production très centralisée des réserves avec la participation des autorités civiles et des grands propriétaires. Il semble, cependant, que la construction d'entrepôts publics ait perdu beaucoup d'importance après le milieu du 4<sup>e</sup> siècle et déclinât encore davantage après les guerres et crises des années 380. Les grands domaines et l'agriculture basée sur les villas s'effondrèrent, laissant un vide comblé peut-être partiellement par de petits habitats fortifiés. Le rôle des villes comme centres annonaires déclina également et les *horrea* urbains tombèrent peu à peu en désuétude. Une

nouvelle campagne de constructions, reflétée par quelques entrepôts de la fin du 5<sup>e</sup> et du 6<sup>e</sup> siècle, visait probablement à restituer au réseau de ravitaillement son efficacité d'antan, mais probablement avec peu de succès.

Traduction: Y. Gautier