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TWO SUITES OF LAMELLAR ARMOUR FROM KRANJ (CARNIUM), SLOVENIA, IN THE LIGHT OF ARCHAEOLOGICAL ANALOGIES, WRITTEN SOURCES AND CONTEMPORARY ICONOGRAPHY

Abstract:

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In 2005, archaeologists made an extraordinary discovery in Kranj (Slovenia), unearthing two suites of lamellar armour of Late Antique/Early Medieval provenance. These armours, found together with a throwing spear of Germanic origin (the “angon”) were status symbols and effective defensive equipment of elite warriors. They especially characterised the military culture of Byzantium to which the territories of present-day central Slovenia still formally belonged during the 6th century and at the turn of the 6th and 7th century. These finds are of exceptional importance, also due to the fact that they are ones of the most complete suites of such armours from this period that have been found so far in Europe. As such, they provide a lot of new information about the construction and the original appearance of this kind of armour in Late Antiquity. The authors attempt at shedding new light on it and at providing an answer concerning the origin of the lamellar armour of Kranj, its place of production and a possible identity of the wearers of these magnificent pieces of defensive equipment. This is done on the basis of an analysis of written, archaeological and iconographic sources of the 6th and 7th century.

Keywords: Byzantium, Slovenia, Kranj, archaeology, lamellar armour

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A weaponry find from Kranj

In 2005, two almost complete Late Antique/Early Medieval lamellar armours were unearthed during archaeological excavations in Kranj, Slovenia. Together with an “angon”, lying beside them, they formed a kit of military elite equipment of the highest rank discovered till now in Kranj, or Late Antique Carnium:¹ this Europe-wide unique find is kept and since 2015 is on display in the Museum of Gorenjska (Gorenjski muzej) in Kranj (Pflaum 2016a, 3–5).

History of the find

The Kranj Municipality decided in 2005 that part of the town walls² located in the garden of the house at Tomšičeva 38 on the western edge of the old town of Kranj (Fig. 1) should be restored,

as it threatened to collapse onto the buildings below (Sagadin 2016a, 6). Based on the knowledge of archaeological remains in the immediate vicinity, the Institute for the Protection of Cultural Heritage of Slovenia, Regional Office Kranj, requested that rescue excavations should be carried out along the town walls in this location. The trench, which measured 12 × 16 metres after two extensions, revealed Late Antique defensive walls surviving up to three metres under the foundations of the medieval defensive walls.³ Five metres east in the interior of the town, archaeologists also found two parallel walls of the Early Roman defence system, dating from the first few decades of the 1st century AD. The space between the Late Antique and the Early Roman walls was paved with mortar reaching north a shoddily constructed wall in the north. This

¹ On the ancient site of Carnium cf. Ciglenečki (1999), Knific and Nabergoj (2017, 41–57).

² On the disposition of the town walls of Kranj, built mainly in the 15th century, cf. Longley (2007, 106–108).

³ On the importance of Kranj as a fortified centre since the Roman Age, Late Antiquity and the Dark Ages cf. Horvat (2008, 117) and Milavec (2009, 286, 291; 2012, 78–79).

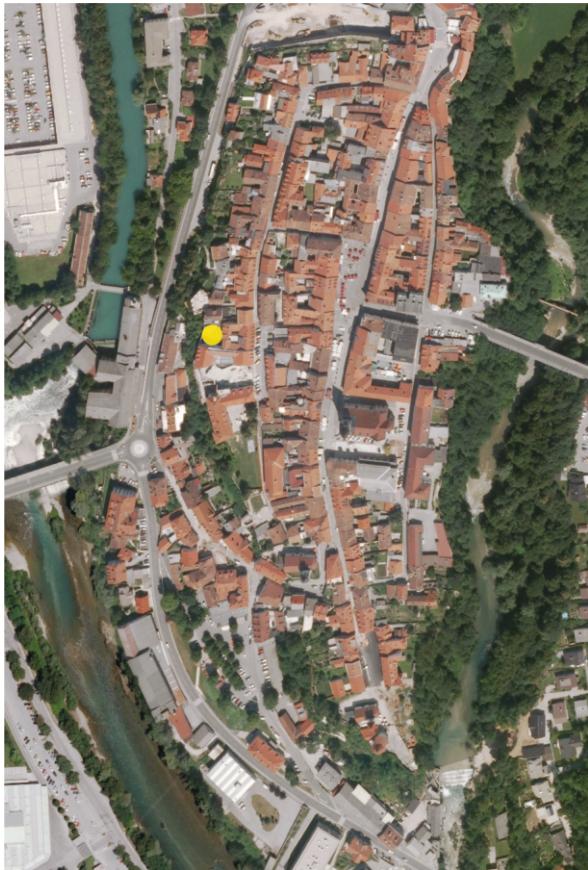


Fig. 1. Location of the archaeological site in the garden of the house at Tomšičeva 38 in Kranj. Photo by The Surveying and Mapping Authority of the Republic of Slovenia.

Ryc. 1. Usytuowanie stanowiska archeologicznego w ogrodzie posesji przy ul. Tomšičeva 38 w Kranju. Fot. Geodetski urad Republike Slovenije.

wall was inserted between the two defensive walls. To the south, there were the foundations of the house at Tomšičeva 42 (Fig. 2). The removal of part of this mortar floor in order to investigate the ground below revealed Late Antique and Early Roman layers covering the foundations of an early Roman rectangular defensive tower.⁴

The room with the mortar floor measured 8.9×4.2 metres. In its northern-east corner, archaeologists found the head of a javelin of an “angon” type and two small parts of a lamellar armour, with the remaining parts found further on the south side. Excavations revealed another armour in the south-eastern corner of the same room. Beside the armours, three iron pegs were also revealed (Figs. 3, 41-42).

The circumference and the dimensions of the finds as well as leather traces on the edge of lamellae exclude the possibility that the artefacts

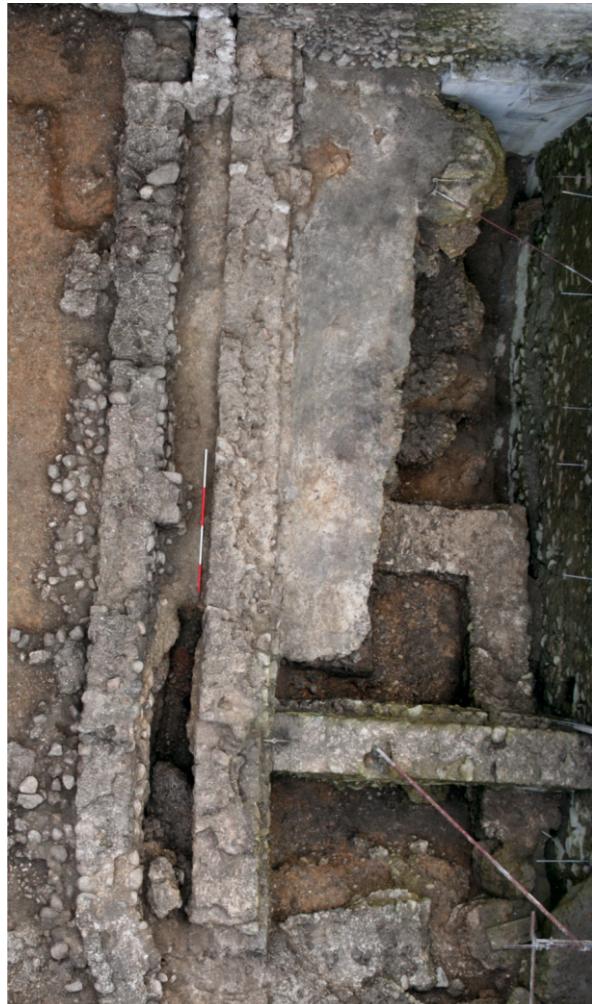


Fig. 2. Kranj, Tomšičeva 38. Remains of a Late Antique building with a mortar floor delimited in the east by Early Roman and in the west by Late Antique defensive walls (view towards the south). Under the mortar paving, archaeologists unearthed the wall of an early Roman defensive tower. Photo by J. Rupnik.

Ryc. 2. Kranj, ul. Tomšičeva 38. Pozostałości późnoantycznego budynku z podłogą pokrytą zaprawą, ograniczonego przez mury obronne: od wschodu przez wczesnorzymski, a od zachodu przez późnoantyczny (widok od południa). Pod utwardzoną posadzką odkryto wczesnorzymską wieżę obronną. Fot. J. Rupnik.

are back and front of a single armour. A complete state of preservation of the second armour (under restoration) confirms that this was a defensive piece by itself. The distance between the two finds makes it impossible that two parts of the armour would have been hanging so distantly from each other on the walls. Last but not least, the reconstruction of the armour made by Slovenian archaeologists demonstrates that it fits perfectly the human torso of a man, and did not only cover the frontal part of the body.

⁴ See a description of the discoveries at Tomšičeva 38 in Sagadin (2016a) and preliminary reports on the excavations in Josipovič, Podobnik, Rupnik (2006) and Sagadin (2008, 56-60, 297-302).

No other find was discovered lying on the floor, while a thick layer of building debris above it revealed some sherds of typical Late Antique cooking vessels and glass beakers, as well as pieces of flat window glass. The layer contained some artefacts of a later (medieval) date, too, and traces of burnt material in the debris layer suggest a fire (Sagadin 2016a, 6). The building of a clearly military function must have been crumbled down unexpectedly and instantly (attack or earthquake?). Otherwise, the precious equipment would not have been left there (Nabergoj 2017, 114, 116). The building has never been rebuilt. The place was abandoned and this part of ancient Carnium was not inhabited again in Late Antiquity and the Early Middle Ages.⁵

Description of the armours

The lamellar armour found in the southeast corner of the Late Antique building (Armour 1) was discovered lying stretched out on the floor. It has not been completely preserved as parts of its left half were missing (Fig. 3; Pflaum 2016b, 17; Sagadin 2016b, 13). The surviving section is preserved in many parts. The armour is composed of five rows of iron “squamae” (“lamellae” according to the modern terminology) measuring ca. $17 \times 3 \times 0.1\text{--}0.2$ cm each (the length of the best preserved top row is more than 70 cm) and a single row of lamellae measuring ca. $10 \times 3 \times 0.1\text{--}0.2$ cm each (Fig. 4; Pflaum 2016b, 16). The top row has been only partly preserved, but with both lamellae forming the edge. Traces of leather laces that held together individual lamellae and rows, as well as straps which were used to hem the rows of lamellae are preserved on the external and internal sides of some parts of the armour (Fig. 5). The armour has already been conserved in the National Museum of Slovenia (Virag, Milič 2016), enabling us to carry out a thorough observation of its details.

The lamellar armour found in the north-eastern part of the building was discovered lying folded up (Armour 2). Overlapping parts of the armour became stuck together by corrosion products. The armour has not yet undergone conservation (Fig. 6). However, two small parts (one composed of eight “squamae” and the other of nine) of the same armour were found separately and were conserved and restored (Fig. 7; Sagadin 2016b, 14). As far as it can be seen from the whole, the construction and dimensions of the armour are the same as those of

the first armour. This armour is nearly completely preserved, in its whole width. It is composed of five rows of iron lamellae measuring ca. $17 \times 3 \times 0.1\text{--}0.2$ cm each. The dimensions of the whole armour are ca. 90×40 cm (Sagadin 2016b, 11, 14). The sixth, shorter upper row cannot be seen, notwithstanding the use of X-ray scans. Therefore, it seems that this armour did not have one.

Construction of the armours

The construction of the two suites of “squamae” from ancient Carnium was determined primarily on the basis of a detailed observation of the parts of the worse preserved Armour 1, after its conservation and restoration (Fig. 3; Pflaum 2016b). The two armours were constructed in the same way except for the missing top row in the second armour (no. 2). Each armour (or at least the restored one) seems to have been composed of almost 270 narrow plates (“squamae”) of wrought iron, measuring either 10 or 17 cm in length. Considering such a length and the disposition of the holes for the passing of the leather laces (Fig. 12), the plates were of nine different shapes (Fig. 4) arranged in six rows (Figs. 3–4, 8) (*ibidem*, 17). Those of Forms 7–9 were used for the short top row, with Forms 7 and 9 at either end. The bottom row was made up of Forms 4–6, with Forms 4 and 6 placed at either end. The remaining four rows in between were sewn up arranging Forms 1–3, with Forms 1 and 3 at either end.

According to the achieved reconstruction, 18 of the shorter “squamae” made up the top row, which measured therefore roughly 30 cm in length. Other 5 rows were probably made of 50 long plates, each row measuring roughly 90 cm in length, and they were reconstructed in this way in the replica (Fig. 8; Pflaum 2016c, reconstruction in the back cover and on p. 29). The length of the rows has been established according to the position of the shorter top row when discovered in its original central position. The second, better preserved but still not conserved armour (Armour 2), confirms the estimated width.

The “squamae” were first attached together, each one to the other with two 2–3 mm wide leather laces to form a row, which was then hemmed with a leather strap (roughly 3 cm wide) sewn across the edge (Fig. 12).

The plates in the top row overlapped just less than a centimetre to the right while those in the lower

⁵ For the life in Carnium after 600 AD and until the Carolingians, cf. Štih (2010, 187), Milavec (2012, 79), Milavec and Modrijan (2014, 266). A complete and detailed publication of the archaeological site Tomšičeva 38 in Kranj, where the armours were found, is planned to be published in the next year or in the next couple of years in “Arheološki vestnik”. All the excavated materials will be presented there, including a more detailed presentation of the two armours, and an analysis and interpretation of their archaeological context.



Fig. 3. Nearly completely preserved lamellar armour from Kranj (Armour 1), Museum of Gorenjska, Kranj, Inv. nos. KrK 6775-6806. *Photo by T. Lauko.*

Ryc. 3. Niemal完全に保存されたラメルアーマー (アーマー No. 1), ゴレンツカの博物館、クラン、Inv. nos. KrK 6775-6806.
Fot. T. Lauko.

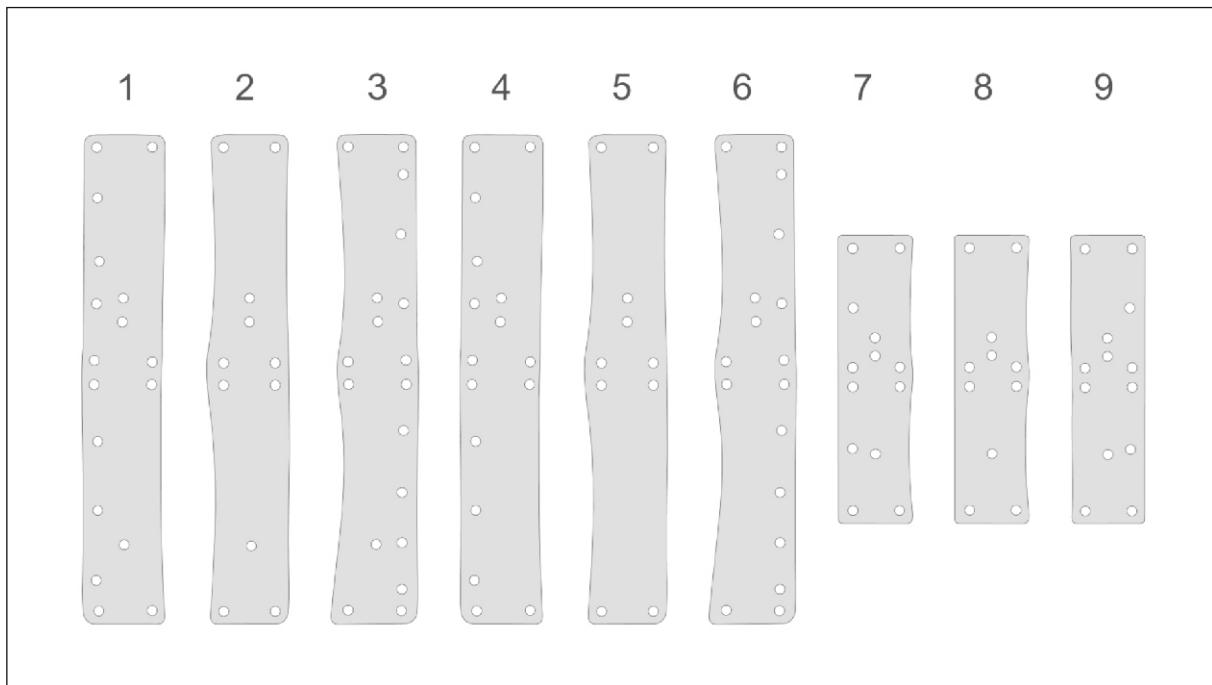


Fig. 4. Kranj Armour 1 is constructed of lamellae of nine different forms. Drawing by M. Pflaum.

Ryc. 4. Dziewięć rodzajów zbrojników użytych do konstrukcji pancerza lamielkowego nr 1 z Kranju. Ryc. M. Pflaum.

rows overlapped just more than one centimetre to the left (Fig. 9). The individual rows of “squamae” were overlapping, the row below covering the row above. The longer rows overlapped 3-3.5 cm, with the upper one covering the shorter one by 2 cm (Fig. 12). This overlapping is partially visible also on the remains of the other armour (Armour 2, Figs. 6-7; Sagadin 2016b, 14). The rows were attached, in a loosely way, between them, with a leather thong. It passed through the median upper holes (Fig. 5:1, 11) of each plate and was connected with the lower holes (the ones before those of the edge) of the superior lamella (Fig. 12; Pflaum 2016c, 19).

The total height of the metal armour measured around 80 cm. The upper three rows protected the warrior’s torso to the waistline, while the lower three protected the body from the waist almost to the knees (Fig. 8), as it is more or less visible on figurative monuments (Figs. 13:1-2). The reconstructions of

the Niederstotzingen (Fig. 13:3) and Krefeld-Gellep armours (Paulsen 1967, 127-130, Taf. 22; Dawson 2013, 76-78, Fig. 22), the depiction on the Isola Rizza plate⁶ (Fig. 13:2) and the original position of some of the lamellae in the Kranj armour suggest that the central plates in the bottom three rows were not sewn together, which created a slit for a better movement of the legs. According to the reconstruction, the armour measured 90 cm in circumference, which meant that the two surviving ends of it would not touch at the back.⁷

The shoulder part of Armour 1 has not survived. It is possible that it was perhaps made of thick leather, although the iconography of imperial Roman coins showing the lamellar Imperial armour (Fig. 13:4-5) and the reconstruction of similar armours (Fig. 14:1-2) point to the presence of metal lamellar “umeralia” (shoulder guards)⁸ as well.

⁶ Here, the slit follows below a large belt buckle in the central position of the soldier’s waist, but the slit seems to be depicted in a slightly incorrect perspective. On the other hand, it is probable that the artist wanted to represent the movement of the body of the man towards right.

⁷ See also the reconstructions of a Ostrogothic lamellar armour and of the Niederstotzingen armour in MacDowall (1996, Pl. K-L); and the schema of the armour from Niederstotzingen in Balbi (1991, 49).

⁸ Justinian (Paul. 49, 16, 14, 1): *Arma alienasse grave crimen est et ea culpa desertioni exaequatur, utique si tota alienavit: sed et si partem eorum, nisi quod interest. nam si tibiale vel umerale alienavit, castigari verberibus debet, si vero loriam scutum galeam gladium, desertori similis est. tironi in hoc crimine facilius parceret armorumque custodi plerumque ea culpa imputatur, si arma militi commisit non suo tempore* (i.e., *It is a serious crime for a soldier to sell his arms, and it is considered equal to that of desertion where he disposes of all of them, but if he only sells a portion, his punishment will depend upon what he sold. For if he sells the armour for his legs or shoulders, he shall be punished by scourging; if, however, he sells his breastplate, his shield, his helmet, and his sword, he resembles a deserter. A new recruit is more readily pardoned for this crime, and generally the custodian of the arms is to blame if he gave them to the soldier at an improper time*).



Fig. 5. Front (1) and back (2) details of a fraction of lammina of Armour 1, with traces of leather lining and of leather laces. Photo by T. Lazar.

Ryc. 5. Szczegóły zewnętrznej (1) i wewnętrznej (2) partii fragmentu pancerza nr 1, ukazujące ślady skórzanych, poziomych pasów i skórzanych rzemieni. Photo by T. Lazar.

We also lack clear evidence of how the armour was fastened at the back. No buckles were found beside the armour, which suggests that it was maybe laced together.⁹ There was however enough reliable data on the armour structure for an attempt at reconstructing the first, worse preserved armour (Figs. 3, 8, 15; Pflaum 2016c). A test of the armour confirmed its excellent adaptability to different postures of the body in full movement (Fig. 8:2). The loose joints between the rows of lamellae allow the armour to be neatly folded, as well (Fig. 8:3). The weight of the reconstructed armour was 12 kg overall.

Usually, armours of this period were not worn directly over the tunic. A garment of organic material was worn between the tunic and armour. This kind of garment, which sources of the 4th century AD call by the name of "thoracomacus" (Anonymus, XV), was the "subarmalis" of an old tradition in the Roman Army (D'Amato 2009, 144 ff.). Apart from its decorative effect, it served as a further element of protection, allowing the "miles" to better

sustain the weight of the armour and to act with efficacy in difficult weather conditions. In the East it was probably composed, when not entirely in soft leather, of layers of linen and felt stitched together to form the desired thickness.

The "subarmalis" or "thoracomacus" was recorded as the "peristithidion" in Justinian's age. It is mentioned by the Anonymus of "De Re Strategica" as a quite plain garment, about one finger (= 1.95 cm) thick, worn by the Imperial infantry (Anonymi..., 16, 20-27). The anonymous writer describes this undercuirass garment worn by infantrymen among other items of the Roman equipment, and refers to felt and leather armour worn by soldiers instead of metal, or used as fabric and leather breastplates underneath the metal armour. Soldiers wore these special garments in order to prevent the body from direct contact with iron or other coarse materials and to make it more comfortable to wear. The author says that an important factor for the effectiveness of the equipment should be its distance from the body:

⁹ The system of attaching is unclear for most of lamellar armours. D. Glad finds it probable that they were fixed together on the soldier's left haunch using a buckle (Glad 2015, 114). The Niederstotzingen armour was probably fastened by buckles at the back (Paulsen 1967, 126, 130, Taf. 21).



Fig. 6. Other completely preserved, folded up lamellar armour from Kranj (Armour 2), Museum of Gorenjska in Kranj, Inv. no. KrK 6810. Photo by T. Lauko.

Ryc. 6. Drugi, kompletnie zachowany, złożony pancerz lamelkowy z Kranju (pancerz nr 2), Gorenjski muzej w Kranju, nr inw. KrK 6810. Fot. T. Lauko.

It should not be worn directly over ordinary clothing, as some do to keep down the weight of the armour, but over a himation (garment) at least a finger thick. There are two reasons for this. Where it touches the body the hard metal does not chafe but may fit and lie comfortably upon the body. In addition, it helps to prevent the enemy missiles from hitting the flesh because of the iron, the design, and the smoothness, but also because the metal is kept away from the body.

Undergarments of this kind (“imatia” or “peristithidia”) added extra weight to soldiers, but protected them from wounds caused by their armour and offered a more consistent protection. These undergarments were usually worn under metal (mail, plated and laminated) and leather armour, but also under the leather fabric of a cuirass furnished with scales or lamellae, so that their defensive function had more importance (Fig. 15).

Lamellar armour in Byzantium between the 6th and 7th century: an analysis of sources

Lamellar armour is a long-lasting form of defensive military equipment emerging in various cultures, at different times and in different versions, using different materials. This form of corporal

protection had its origin in the East, especially in the region of the Near East and Eastern Mediterranean. It was employed by the Mitanni, the Hittites, the Egyptians, the Cypriotes, the Achaeans and the Assyrians. It was widespread among the Iranian steppe peoples, who contributed to its export inside the Persian Empires (Kory 2004, 385-391; Glad 2009, 65-72, Fig. 21; 2012, 352-354; 2015, 113; Dawson 2013, 59-102). This kind of protection of the body was not previously unknown, however, to the Roman world, which derived it from the Etruscans since at least the 5th century BC.¹⁰

During the classical period of the Empire, the Romans widely used scale armour and at least since the beginning of the 1st century BC also lamellar armour, especially in the East. In the Roman military language there were no differences, as opposed to modern languages, to design scale and lamellar armour: the word “squama” was indistinctively used to indicate the scale or lamellar construction.

Unlike scale armour, composed by “squamae” attached to a backing of cloth or leather and wired or linked to each other, lamellar “squamae” were laced to their backing in rigid horizontal rows. Individual pieces were longer and slimmer than

¹⁰ The so-called Mars of Todi, 5th century BC and warrior from the fronton of the Belvedere Temple, Orvieto, late 5th – early 4th century BC (Torelli 2000, 380-381, 625, Fig. 5). For the derivation of such armour by the Romans from the Etruscans see also Robinson (1975, 162).



Fig. 7. Two small pieces of the second, completely preserved armour from Kranj (Armour 2), found separately, Museum of Gorenjska in Kranj, Inv. nos. KrK 6811-6813. Photo by T. Lauko.

Ryc. 7. Dwa małe fragmenty drugiego, kompletnie zachowanego pancerza lamelkowego z Kranju (pancerz nr 2), odkryte oddzielnie, Gorenjski muzej w Kranju, nr inw. KrK 6811-6813 Fot. T. Lauko.

usual scales, and thus they formed an even stiffer form of defence (Robinson 1975, Pl. 174; Sumner 1997, 61). The scales/lamellae had numerous variants in size, shape and dimensions, exactly like scales.¹¹ They were particularly effective one horseback and against the attacks of archers. They were mainly made of metal, but at least from the 3rd century AD on, forms of lamellar defences in raw-hide should have been used (Robinson 1975, Pls. 457-458).

¹¹ Robinson (1975, 154) correctly states that beside the use of bronze scales, the Romans also widely used iron scales of various size, just to mention 36 different typologies isolated by Van Groller at Carnuntum; today we are not able to compare the degree of the use of iron instead bronze, because iron is by nature more perishable.

¹² The red one is 77 cm long, 60 cm wide at the top and 27 cm wide at the bottom. The black is a little smaller (61 cm × 48 cm × 21 cm); the lamellae are approximately 7 cm long and 5 cm wide, and are laced with rawhide into horizontal rows and joined vertically with external laces of red leather (D'Amato, Negin, 2018, 37-40 with photos).

The oriental origin (Bugarski 2005, 172-174) of such armour logically implies that in the Roman army its use was especially widespread among Eastern auxiliaries, while for the Romans it was just a variation of the usual “squama”. It was firstly employed by auxiliaries and “Numera”, and fragments of fine lamellar armour found in Corbridge may have belonged to one of them (Robinson 1975, 162-163, fig. 174). This armour seems to have been especially common among the Palmyrene and the strongly Hellenised “Numeri” of the Near East, as it is shown by a widespread representation of such kind of armour on funerary and religious monuments of Palmyra, Hatra and other localities in Mesopotamia in the first three centuries of the Christian Era (Ghirshman 1962, Figs. 10, 84; Robinson, 1975, Pl. 456). The lamellar armours depicted here are the real ones, showing small rectangular plates with rounded upper ends laced into horizontal bands and joined into a flexible unlined defensive garment with a series of vertical laces.

Lamellar armours were widely popular among cavalrymen and “Dromedarii” of the Eastern Regions, as attested by many votive reliefs of this area. In Rome itself such armour was well detailed on one of the Provinces sculpted for the Hadrianic temple of Venus and Rome. The frescoes and graffiti from Dura Europos are a further proof for the employment of scale and lamellar armour on the Eastern Frontier in the 3rd century, at least by the Roman garrison of the city. Lamellar protection for cavalrymen' thighs, made in rawhide, has been recovered in Tower 19 of Dura Europos (*ibidem*, Pls. 457-458). One of them is lacquered red and the other is lacquered black.¹² They were probably worn tied together at the front and with ties from their upper outer corners round the waist, with further ties around the thighs.

As other pieces of armour, it was used together with doublets furnished with leather or linen “pteryges” at the shoulder and around the waist. Statues of Palmyrene officers, Gods and Generals are a good source of evidence for the design of these armours which show, in their own garb, a strong Hellenic influence (Gabucci, Mambrini 2002, 118, Fig. 144).

Employed especially by mounted troops and heavy cavalrymen, the lamellar protection increased its extent of use during the 4th and 5th



Fig. 8. Reconstruction of Armour 1 from Kranj (1), showing the flexibility of the armour (2-3). *Photo by M. Pflaum.*

Ryc. 8. Rekonstrukcja pancerza nr 1 z Kranju (1), ukazująca jego elastyczność (2-3). *Fot. M. Pflaum.*

century AD. The Roman army, especially during the Migration Period, strengthened its use in its ranks after encounters with mounted archers of the nomad barbarian peoples and of the Iranian Sassanian Empire. The use of such armours by



Fig. 9. Detail of Armour 1 from Kranj, presenting a part of the top row and the middle part of the row below. *Photo by T. Lauko.*

Ryc. 9. Szczegóły konstrukcji pancerza nr 1 z Kranju, ukazujące część górnego rzędu i środkową część rzędu znajdującego się poniżej. *Fot. T. Lauko.*

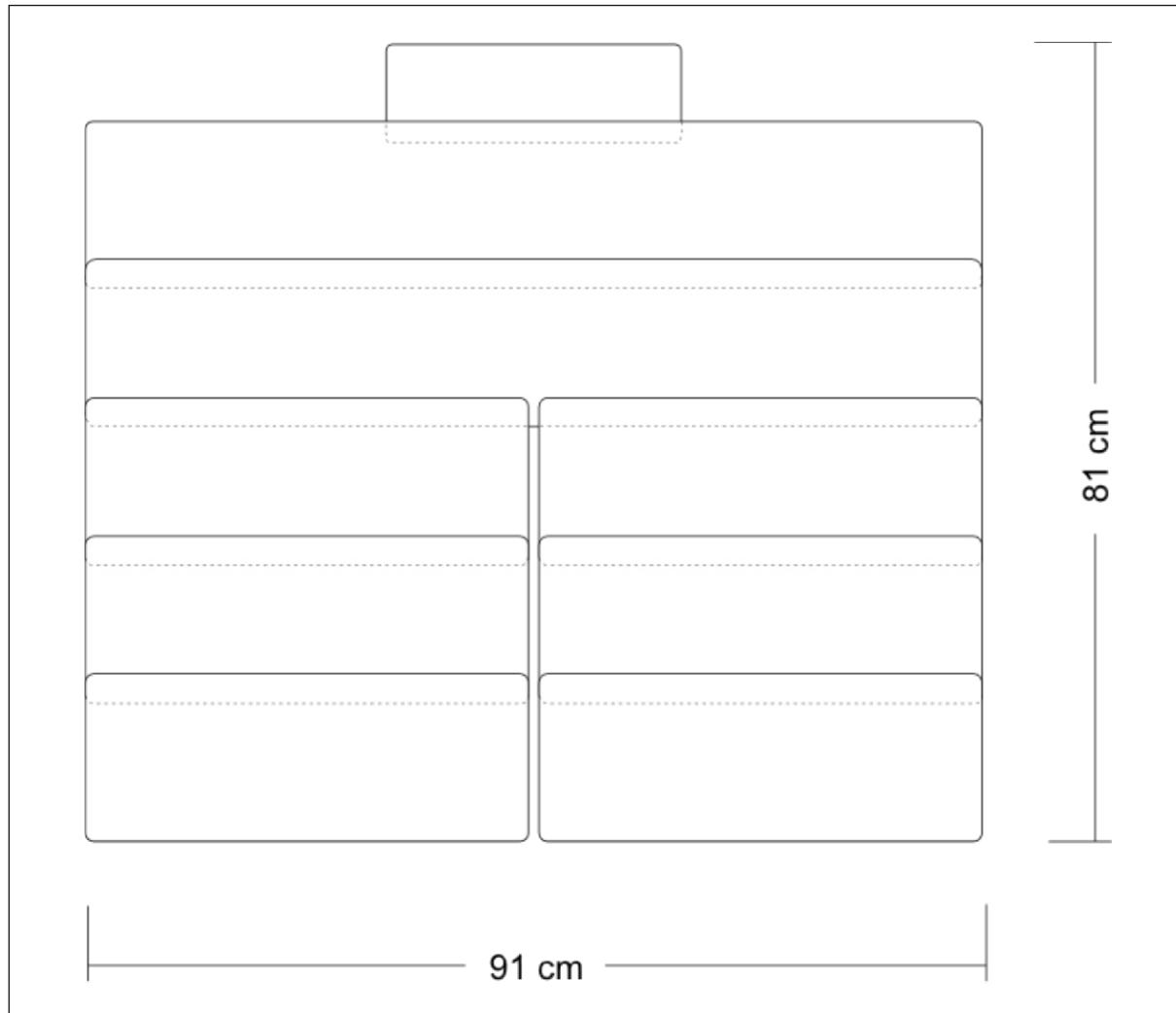


Fig. 10. Schematic drawing of the design for metal parts of Armour 1 from Kranj. Drawing by M. Pflaum.

Ryc. 10. Schemat układu metalowych rzędów w pancerzu lamelkowym nr 1 z Kranju. Ryc. M. Pflaum.

the Sassanians is widely attested, for instance by remains of the armour of Qasr-i-Abū-Nasr.¹³ Their employment also continued in the post-Sassanian period (paintings of the Qyzil cave; Kubik 2018, 145, Fig. 2), at Kuca in Eastern Turkestan.

In Late Antiquity such armour was strongly widespread in the Roman army and among Germanic peoples through the influence of the Huns (during the 4th and 5th centuries) and the Avars (during the 6th-7th centuries). This was a result of changes in warfare techniques, where the archer's role in the initial stages of the battle was of utmost importance (Vizcaíno Sánchez 2008, 204). Differently

from the previous period, scales and lamellae were now mainly of iron and rarely of bronze.¹⁴ Especially the shape of the long lamellae fitted Eastern types, imported from steppe peoples, who were at their turn influenced by the people of the Far East. A connection with Korean armours like the famous one of Bockhondong, is evident (Werner 1988, 12-13). On the other hand, lamellar helmets and lamellar armour of the type which became widespread in the 6th-7th centuries were already used by the Roman Army garrisoning the Black Sea Cost and the Caspian Sea long before the arrival of the Avars (Glad 2012, 353-356).

¹³ Metropolitan Museum, New York, mid-7th century AD; the fragment consists in alternate rows of iron and bronze lamellae (cf. Thordeman 1939, 267, Fig. 256; Nicolle 1996, 69).

¹⁴ A beautiful specimen of Late Roman armour of Justinian's period made of bronze and iron scales, together with parts of lamellar armour, a Bandenhelm, fragments of other two helmets, military fibulae and buckles, arrowheads and other equipment have been recently found near Scupi, on the hill of Gradishte Taor (Rystov 2015, 381ff).

Therefore, even if the connection of such kind of armours with the Far East is clear, they were known to the Romans at least since the 4th century AD.

In the 6th-7th century the lamellar armour (now with squamae mainly of iron) as well as the lamellar helmet, notwithstanding their Central-Asiatic origin, were fairly popular in the Roman army of the Eastern Empire. The lamellar protection, of iron, horn or leather, was widely used there until the fall of Constantinople (Bugarski 2005, 171-172, 174; Dawson, 2007, 6; D'Amato 2016, 36). Mobile components of such armour (as well as helmets of similar construction) were mainly conceived for a fight from horseback. The armour also included defensive items for neck and throat: a particular piece of bronze neck-guard or throat guard (gorget), a forerunner of the medieval “peritrachelion” used by the Roman army during the 7th century and mentioned in the “Strategikon”, was discovered in Carlisle¹⁵ in a level of the 4th or 5th century AD (McCarthy 2002, 74, Fig. 34).

Literature and iconography

The best definition of the age in which our armours were produced is related to the scale or lamellar armour. This definition was provided by Isidorus of Seville in his “Etymologies” (Isidore, XVIII,13). He says: *13 De loricis. Lorica vocata eo quod loris careat; solis enim circulis ferreis contexta est. 2 Squama est lorica ferrea ex lamminis ferreis aut aereis concatenata in modum squamae piscis, et ex ipso splendore squamarum et similitudine nuncupata. De ciliciis autem et poliuntur loricae et teguntur.* Literally: *About the armours. The cuirass (“lorica”) is so called because it “lacks thongs” for it is made only of iron rings. The squama is an iron cuirass made of bronze or iron plates (“lamminis ferreis aut aureis”) linked together in the manner of fish scales and named for their glittering likeness to fish scales. Cuirasses are both polished and protected by ‘goat-hair cloth’ (“cilicium”).* Isidorus writes in the time when the armour in question is in use. His definition clarifies important things: in the 7th century in the Roman world the word “lorica” was used for the iron ring armour; and the plates or “squamae” forming the lamellar or scale armour were called “laminae”, and were made of iron or bronze.

Despite the striking absence of any specific mention of this type of armour in the “Strategikon” attributed to Emperor Maurice, the lamellar armour is at least mentioned by Corippus, one of the authors of the Justinianic Age (Grosse 1920,

324-325; Ravegnani 1988, 46), while Procopius and Agathias mentioned it only in an indirect way.

An important passage of Procopius (1919, VI,2,22ff.) mentions the armour (“θώρακος”) of a Roman military commander (Bochas) who found himself surrounded by twelve Gothic cavalrymen, armed with spears. The Goths struck him at once with their spears but his corselet withstood the blows, and he received serious wounds only when a Goth succeeded in hitting him from behind, at a place where his body was uncovered, above the right armpit, very close to the shoulder. The position of the hit resembles the reconstruction of the lamellar armour of Niederstotzingen, or even that of Kranj, Castel Trosino or Crypta Balbi (Figs. 8:2, 13:3, 14:1-2), where the armours in fact show one of the weak points at the armpits. A similar armour was probably worn by the Goth Valaris and the Roman Artabazes in their duel (Procopius 1914, VII,4,22ff.). Artabazes pierced and mortally wounded the Goth by hitting him on the right side (so probably in the same point where Bochas was struck by the Goths). However, the spear of Valaris – standing upright and its iron point encountering the corselet of Artabazes entering little by little – went clear through the Roman armour, also inflicting a deadly wound for Artabazes. The most logical interpretation of the action of Valaris’ spear assumes that his opponent was wearing a lamellar or scale suit of armour, while in the case of a muscle corselet¹⁶ or a ring mail armour a slow penetration is not conceivable. A further possibility of the use of lamellar armour can be derived from the description of the duel among the Armenian Anzalas, “Doryphoros” of Narses, and the Goth Coccoas (Procopius 1928, VIII,31,11ff.). In order to hit his enemy, the Roman warrior turned his horse aside, causing the charge of the enemy’s spearman to be futile. With this manoeuvre he placed himself on the enemy’s flank thrusting his spear into his left side, and killing him this way. In the case of a ring mail armour or a muscled breastplate the sides should have also been protected, although a thrust delivered by an expert warrior could have pierced them as well.

From Agathias we have also an indirect reference to the armour made of plates (scales or lamellae). On two occasions he expressly spoke (Agathias 1828, I,9, p. 33, 1; V,22 p. 327, 10) of *men armoured with an iron cuirass (σιδήρῳ τε θωρακισμένων; ανδρών ευπλήσσας σιδήρῳ*

¹⁵ The piece is composed of three rows of iron scales linked with bronze wire twists.

¹⁶ About the employment of muscled armour in Late Antiquity see D'Amato and Negin (2017, 278 ff. and commentaries to Pl. 19).



Fig. 11. Traces of leather laces and straps on the interior (1) and the exterior (2) sides of a part of Armour 1 from Kranj. Photo by A. Lazar.

Ryc. 11. Ślady skórzanych, poziomych pasów i rzemieni na zewnętrznej (1) i wewnętrznej (2) stronie fragmentu pancerza nr 1 z Kranju. Fot. A. Lazar.

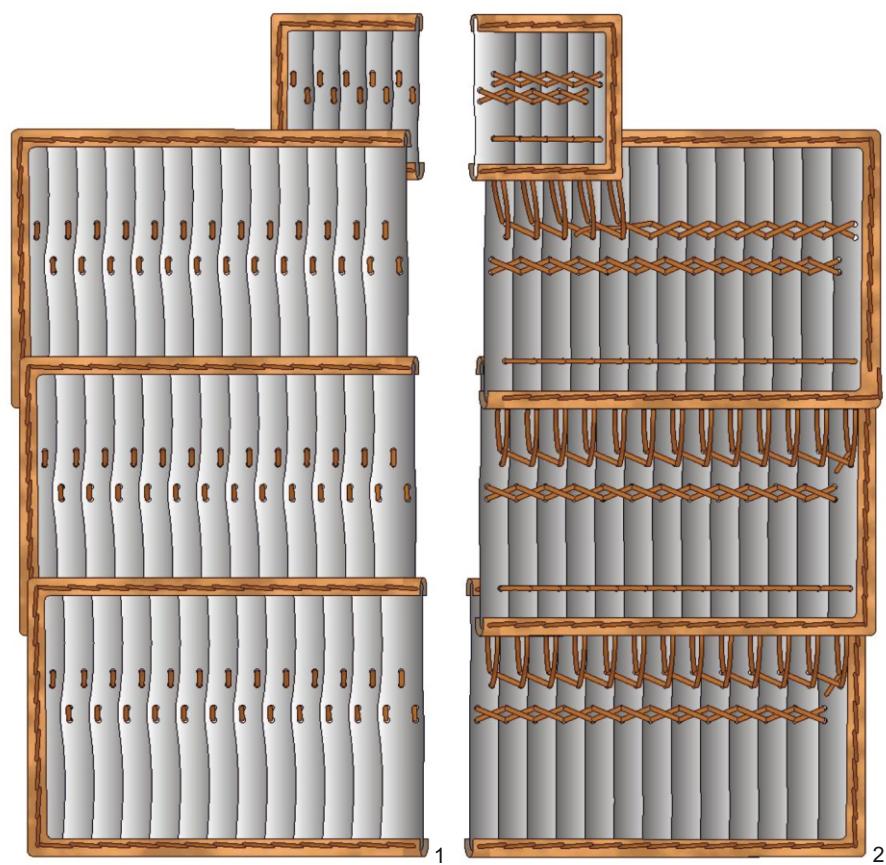


Fig. 12. Leather lacing of Armour 1 from Kranj, shown from the exterior (1) and the interior (2) sides of the armour, as revealed by surviving traces. Drawing by M. Pflaum.

Ryc. 12. Skórzane elementy mocowania zbrojników w pancerzu nr 1 z Kranju, po zewnętrznej (1) i wewnętrznej (2) stronie, których układ zrekonstruowano na postawie zachowanych śladów. Ryc. M. Pflaum.



Fig. 13. Lamellar armour in the 6th-7th centuries: 1 – detail of the lamina of the Valdinievole Helmet, 7th century, Florence, Museum of Bargello (photo courtesy of the Museum); 2 – detail of Isola Rizza Dish, second half of the 6th century, Museo di Castelvecchio, Verona, Inv. no. 13871 (photo courtesy of the Museum); 3 – reconstruction of the armour of Niederstotzingen; 4 – Nomisma/Solidus of Emperor Constantine IV Pogonatus (668-685), Constantinople Mint, 668-676; 5 – Solidus of Emperor Anastasius (491-518), Constantinople, Officina 10, 491-498. 1, 4-5 – photo by R. D'Amato; 3 – after Paulsen 1967, Taf. 22.

Ryc. 13. Pancerz lamekowy w VI i VII stuleciu: 1 – fragment nakładki hełmu z Valdinievole, VII w., Florencja, Bargello Museum; 2 – detal z misy z Isola Rizza, druga połowa VI w., Museo di Castelvecchio, Werona, nr inw. 13871; 3 – rekonstrukcja pancerza z Niederstotzingen; 4 – solid cesarza Konstantyna IV (668-685), mennica Konstantynopol, 668-676; 5 – solid cesarza Anastazjusza (491-518), Konstantynopol, 491-498. 1, 4-5 – photo by R. D'Amato, dzięki uprzejmości Muzeum; 3 – after Paulsen 1967, Taf. 22.

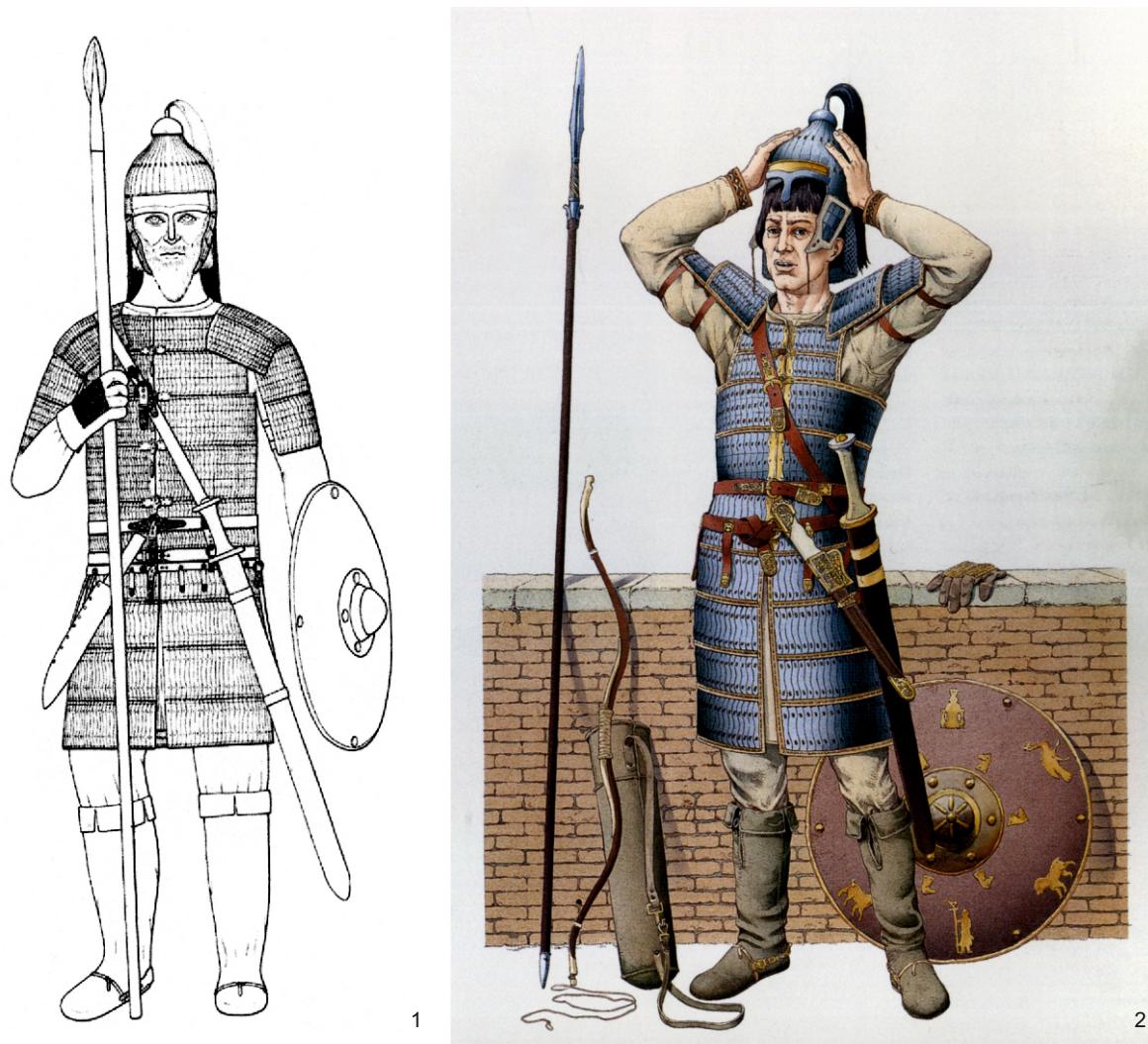


Fig. 14. Reconstructions of: 1 – the equipment of a Lombard warrior from Grave 119 of Castel Trosino; 2 – the equipment of a 7th century Roman warrior from archaeological finds in the Cripta Balbi, Rome. 1 – drawing by M. Ricci; 2 – after Arena et al. 2001 (1-2 – courtesy of M. Ricci).

Fig. 14. Rekonstrukcje: 1 – wyposażenie wojownika lombardzkiego pochowanego w grobie nr 119 w Castel Trosino; 2 – wyposażenie wojownika rzymskiego z VII w. wykonane na podstawie znalezisk archeologicznych z Crypta Balbi, Rzym. 1 – ryc. M. Ricci; 2 – wg Arena et al. 2001 (1-2 – dzięki uprzejmości M. Ricci).

τεθωρακισμένων), first with regard to a “Doryphoros” of Narses, and then concerning Roman marines. And it is clear enough that these armours would probably have been scales or lamellar because he said (*ibidem*, III,25,12-15) that strikes on the cuirasses made a great deal of noise.¹⁷

Corippus mentions the armour directly. An officer of African army is described as wearing a *thorax* “*squamis fulgentibus*” (Corippus, IV, 535-536).¹⁸ Another officer wears an iron armour that covers the whole body (*ferrato corpore toto ipse nitet*) in which *squamas maculis distinguit et*

¹⁷ Agathias (1975, 17, 96, 158) I,9: *When Aligern caught sight of no less a person than Palladius, (he was a man especially esteemed by Narses, one of the most high-ranking officers on his staff and a leading figure in the Roman army) clad in an iron breastplate and attacking the wall with great courage he shot down an arrow at him, which ran right through the man's shield, breastplate and body...;* III,25: *The Persians banged on drums and yelled louder still in order to cause alarm and terror and the neighing of horses combined with the heavy thud of shields and the noise of breastplates being smashed to produce a harsh and strident din...;* V,22: *He immediately dispatched twenty fast skiffs with fore-and-aft rudders, equipping them with a full complement of rowers and helmsmen and men armed with breastplates, shields, bows and arrows and hooked pole-arms, and had them moored out of right in the inlet of water behind the wall...*

¹⁸ The “lorica” belongs to Marcentius, an officer; another officer, Putzintulus (maybe a “Dux”) wears a shining armour, i.e., a metal one.



Fig. 15. Reconstruction of the equipment of Exarch Isaac of Ravenna (625-643) (after D'Amato, Albertini 2007).

Fig. 15. Rekonstrukcja wyposażenia egzarchy Izaaka z Rawenny (625-643) (wg D'Amato, Albertini 2007).

auro (ibidem, IV, 492-493; here the full weaponry of a “dux” Geiserith is described). This could be a precise reference to the employment of scale and “lamellae” armour of iron and bronze (as the quoted specimen of Qasr-i-Abū-Nasr), or iron plates of different colour. In the scale armour the plates are shorter and slightly narrower than the lamellae from the 6th/7th century, or, normally, they are much more frequently made of bronze and not iron, as opposed to lamellar plates. On the other hand, the presence of gilded “laminæ” in the archaeology of the 6th-7th century could also support an assumption that the description by Corippus referred to a lamellar armour (Heath 1979, 64).

These descriptions seem to evocate one of the most celebrative image of such armour in the

Roman iconography of the second half of the 6th century, i.e., the Isola Rizza Dish (Fig. 13:2).¹⁹ Here a heavy Roman cavalryman, probably a “Doryphoros”, protected by a helmet of the “Spangenhelm” (segmented helm) type – belonging to the more ancient variant divided in four segments and bearing a particular resemblance to the helmet of Casino Vassarella – charges with his long spear (“dory”, “kōntos”, “contus”) two Germanic warriors, in all probability Goths. One of them is already fallen, while the other is pierced by the long spear of the cavalryman (Menis 1990, 229-232, cat. 15d; Brogiolo, Arnau 2007, 189, cat. 3.6). The warrior charges on horseback brandishing his long spear with two hands, and on the left wrist he wears an “armilla” with two globes, resembling the one found in Tomei in Egypt (Niederle 1930, 120).

¹⁹ See the suggestions of Ravagnani (1988, 46) and Bolla (1999), who dated the dish to the very late 5th century; Balbi (1991, 49) and Rigoni (2004, 747-749); on the other hand, doubts have been raised about the identity of the cavalryman, i.e., whether he is a Lombard or a Roman. The main elements clearly identify him as an imperial cavalryman. The celebrative purpose of the image is of significance as it recalls a victory over the Barbarians; in all probability, the dish is a gift to an imperial officer as “dona militaria”; the chronology of the artefact – second half of the 6th century – is an age in which such armour was mainly used by the Roman army and not strictly by the Lombards; last but not least, the presence of an “armilla” on the left wrist of the man. This artefact is identical to the Tomei one (Baldini Lippolis 1999, 183 nn. 5-6). All these elements point to a Constantinopolitan origin of the Dish.

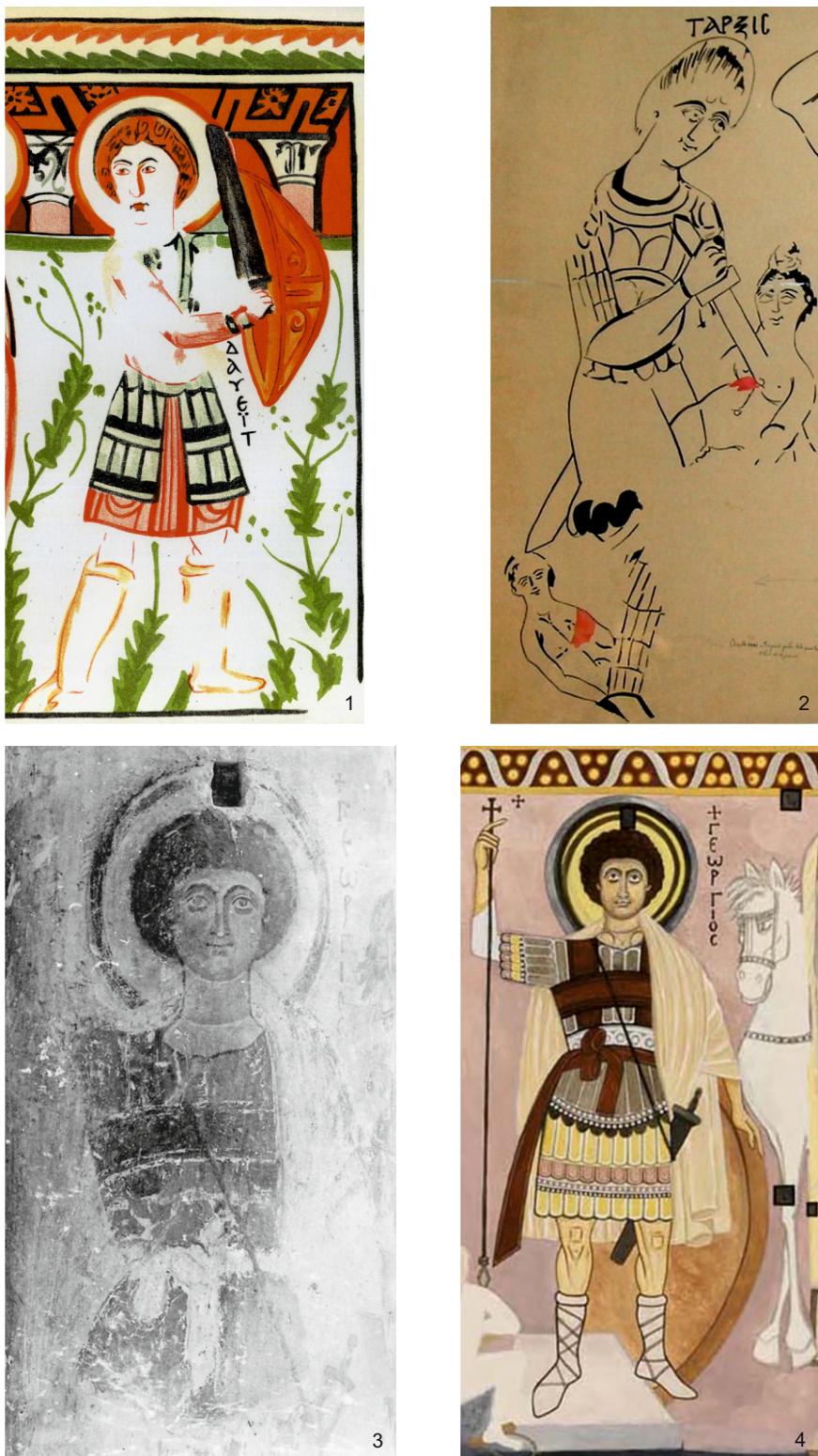


Fig. 16. Warriors in lamellar armour from Bawit, Egypt, first half of the 7th century: 1 – David in front of Saul, Chapel III; 2 – The killing of the Innocents, Chapel XXX; 3-4 – Saint George, original (3) and reconstruction (4) of the painting (1 – after Clédat 1904, Pl. XVII; 2 – after Clédat 1903, Pl. III; 3 – after Leroi 1975; 3-4 – courtesy image D. Benazeth).

Ryc. 16. Wojownicy w pancerzach lamelkowych z Bawit, Egipt, pierwsza połowa VII w.: 1 – Dawid przed Saulem, Kaplica III; 2 – Rzeź Niewiniątek, Kaplica XXX; 3-4 – Św. Jerzy, oryginał (3) i rekonstrukcja (4) malowidła (1 – wg Clédat 1904, Pl. XVII; 2 – wg Clédat 1903, Pl. III; 3 – wg Leroi 1975; 3-4 – fot. dzięki uprzejmości D. Benazeth).



Fig. 17. "Lammina" from Elaiussa Sebaste, second half of the 6th century. Photos by M. Ricci and R. D'Amato, drawing by M. Ricci, courtesy of M. Ricci.

Fig. 17. Płytkę pancerza z Elaiussa Sebaste, druga połowa VI w. Fot. M. Ricci i R. D'Amato, ryc. M. Ricci, dzięki uprzejmości M. Ricci.

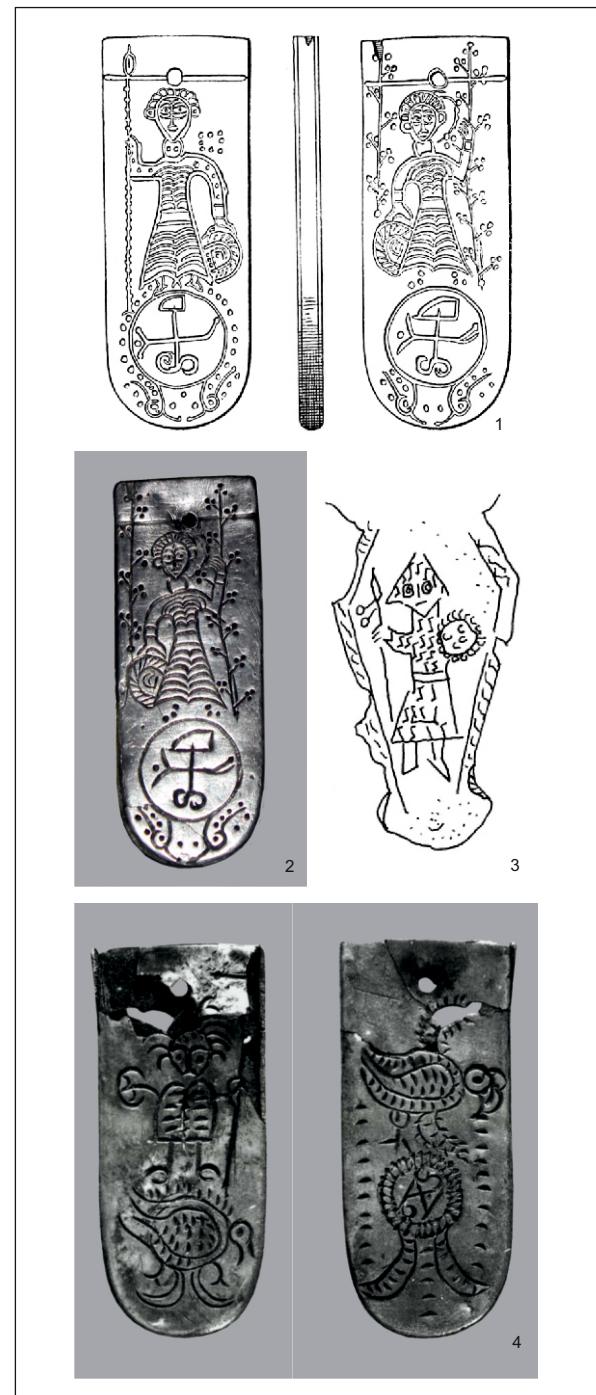


Fig. 18. Images of warriors in lamellar armours: 1-2 – belt tab of a multiple belt with an image of a warrior, Nocera Umbra, Grave 9, late 6th – early 7th century, Roma Museo dell'Alto Medioevo, Inv. no. 1320; 3 – fragment of a shield's umbo with an image of a warrior, Trezzo d'Adda, Grave 5; 4 – belt tab of a multiple belt with an image of a warrior, unknown provenance, 7th century, Ascoli Piceno, Museo Archeologico, Inv. no. A-541 (1, 4 – after Bernacchia et al. 1995; 2 – photo by R. D'Amato, courtesy of the Museum; 3 – after Balbi 1991).

Ryc. 18. Wyobrażenia wojowników w pancerzach lamelkowych: 1-2 – okucie pasa z wyobrażeniem wojownika, Nocera Umbra, grób nr 9, koniec VI – początek VII w., Roma Museo dell'Alto Medioevo, nr inw. 1320; 3 – fragment umba tarczy z wyobrażeniem wojownika, Trezzo d'Adda, grób nr 5; 4 – okucie pasa z wyobrażeniem wojownika, lokalizacja nieznana, VII w., Ascoli Piceno, Museo Archeologico, nr inw. A-541 (1, 4 – wg Bernacchia et al. 1995; 2 – fot. R. D'Amato, dzięki uprzejmości Muzeum; 3 – wg Balbi 1991).



Fig. 19. Fragments of lamellar armour from Caričin Grad / Justiniana Prima, late 6th – early 7th century, Deposit of the Institute of Archaeology in Beograd. Photos by R. D'Amato, courtesy of V. Ivanišević and I. Bugarski.

Ryc. 19. Fragmenty pancerza lamielkowego z Caričin Grad / Justiniana Prima, koniec VI – początek VII w., depozyt Instytutu Archeologii w Belgradzie. Fot. R. D'Amato, dzięki uprzejmości V. Ivaniševića i I. Bugarskiego.

However, the most important item in his equipment is the lamellar corselet, divided in a row of “squamae” protecting the neck like an armoured collar, in three rows protecting the torso, one row

protecting the upper part of the sleeves on each arm, and two rows protecting the upper part of the legs and the thighs. The iconography shows clearly the split in the middle of the front part.



Fig. 20. "Lamellae" from Caričin Grad / Justiniana Prima, from a building located north-east of the Basilica, late 6th – early 7th century, Leskovac, National Museum, Inv. no. 860 (after Tobias, Klein 2010b).

Ryc. 20. Zbrojniki pancerza lamekowego z Caričin Grad / Justiniana Prima, z budynku zlokalizowanego na północny wschód od bazyliki, koniec VI – początek VII w., Leskovac, Muzeum Narodowe, nr inw. 860 (wg Tobias, Klein 2010b).

This kind of armour seems to be more complete, going from the neck to the knees, fitted with sleeves ending just over the elbow and having the central part of the armour's apron split for a better use on horseback.

The partially lost frescoes of Bawit in Egypt are another very important iconographic source attesting the employment of the lamellar and splint armour (i.e., the armour composed of metal "laminae", at least 10 cm long and perforated with holes, directly laced one against the other; Thordeman 1933, 117) in the Roman army of the 6th-7th centuries. Chapel III, north wall, shows the Biblical episode of David and Goliath. Before the duel David is offered to wear the heavy armour of King Saul (Clédat 1904, 29), which is a complete suite of lamellar armour (Fig. 16:1). Here the armour is shortened in comparison with that on the more detailed Isola Rizza Dish, but the two aprons of the lamellar cuirass, as well as part of the lamellar breast, are clearly visible. At Bawit there were also other important representations – now mainly lost or damaged – of splint armours used by Roman soldiers in the late 6th or early 7th century. The "stratiotes" represented in the "Killing of the Innocents" (Fig. 16:2) protects his legs with splint greaves virtually identical to contemporary greaves found at Valsgarde, Grave 8 (Arwidsson 1939, 36 ff., Figs. 3-10). There, elements of shin-guards ("ocreae"), leg defences and/or, maybe, also of a torso protection made of staves were found in a wooden box. This splint armour was lamellar, therefore showing traces of a strong



1



2

Fig. 21. Lamellar armours from Svetinja: 1 – nearly completely preserved armour, late 6th – early 7th century; 2 – fragments of a second lamellar armour, late 6th – early 7th century AD, as exhibited in the first temporary showcase at the National Museum in Požarevac, Serbia (1 – wg Popović 1987, sl. 22; 2 – photo by R. D'Amato, courtesy of the Museum).

Ryc. 21. Pancerze lamekowe z miejscowości Svetinja: 1 – niemal kompletnie zachowany pancerz, koniec VI – początek VII w.; 2 – fragmenty drugiego pancerza lamekowego, koniec VI – początek VII w., w układzie, w jakim był pierwotnie eksponowany na wystawie w Muzeum Narodowym w Požarevacu, Serbia (1 – wg Popović 1987, sl. 22; 2 – fot. R. D'Amato, dzięki uprzejmości Muzeum).

influence of the nomadic peoples on Roman military equipment. This tradition passed from the Romans and the Persians to Scandinavian warriors of the pre-Viking Age, who fought as mercenaries in the Roman army of this period. Such armour consisted of a certain number of iron lists, bound together by leather straps transversally fixed or fastened



Fig. 22. "Lamellae" from the Cripta Balbi, Rome, mid-7th century, Inv. nos 426538, 426540-426541, 440253, 440255, 440284, 440301, 440305, 440308-440309, 440311, 426546. Photo by R. D'Amato, courtesy of the Museum.

Ryc. 22. Zbrojniki pancerza lamelkowego z Cripta Balbi, Rzym, połowa VII w., nr inw. 426538, 426540-426541, 440253, 440255, 440284, 440301, 440305, 440308-440309, 440311, 426546. Fot. R. D'Amato, dzięki uprzejmości Muzeum.

to a leather base. The leg-protection, as well as the rest of the armour, must not have been too heavy, although its staves were lined inside and polished to divert the enemy's blows. Again in Bawit, a now lost military Saint George (Figs. 17:3-4) wears a trunk armour made of large lamellae which are disposed vertically (on the body) and horizontally (on the upper shoulder). They correspond, from the archaeological point of view, to a very large plate found in the fortress of Dux Ciliciae at Elaiussa Sebaste (Fig. 17; Ferrazzoli 2012, 296, Pl. 8, n. 81). An exceptional dimension of such "lammina" (31×10 cm) makes it probable that it was part of a protection of the leg, of the arm or maybe a sort of armoured skirt, like that worn by Saint George of Bawit. The very rich repertory of Bawit attests how important the employment of lamellar and splint armour by heavy cavalry and infantry was in Byzantium in the 6th-7th century.

In Grave 9 of Nocera Umbra – a Lombard necropolis where important elements of the Roman military culture of the 6th and 7th century have been

preserved in warrior graves as a result of war booty or commercial exchange between this Germanic people and the Empire – a belt tip of a multiple Roman belt of exquisite facture was found. On it there is a depiction of a warrior clad in lamellar armour, divided in horizontal bands²⁰ (Fig. 18:2; Mengarelli 1902, col. 223-224; Bernacchia et al. 1995, 252-255, n. 7). There are seven bands for the torso and eight for the lower part of the body. Interestingly, the image of the warrior is repeated on both sides of the belt tip, in one case with the spear and in the other with a bunch in hand (Fig. 18:1). The monogram of the belt piece and the presence of a belt buckle of the "Siracusa" type in the same grave allow to classify the artefact as manufactured in Roman factories, probably Italic ateliers under the control of the Empire. Another similar belt piece, of unknown provenance, shows again a warrior with dishevelled hair, holding a spear and shield, leaning his feet over a bird (Fig. 18:4; Bernacchia et al. 1995, 169-170, n. 7). The lamellar armour protecting his torso is depicted here in a more sketchy and simplified way, and

²⁰ The piece is 6. 6 cm high and 2. 6 cm wide.



Fig. 23. Fragments of lamellar armour from Carthago Spartaria, early 7th century (1-2 – photo by J. Vizcaíno Sánchez; 3 – after Vizcaíno Sánchez 2008, Fig. 5).

Ryc. 23. Zbrojniki pancerza lamelkowego Kartaginy (Carthago Spartaria), VII w. (1-2 – fot. J. Vizcaíno Sánchez; 3 – wg Vizcaíno Sánchez 2008, Fig. 5).

²¹ This is however a matter of discussion: already Guillou suggested the Roman origin of the helmet's plaque and even a different reading of the inscription (Guillou 1970, 210-213); although the evidence given for the inscription is weak, the style of the helmet plaque is very similar to the one of the helmet plaque of Crypta Balbi and to the one of the Rupkite Chieftain; it is therefore very probable that the helmet was a booty taken from the Romans, or was re-worked or even manufactured by a Roman artist for the Lombard King (for a recent discussion see Bullough 1991, 52-53 and notes 50-54, as well as pp. 82 ff).

²² It was formed by a basket of superimposed metal lamellae, tied together by thin leather strings (see its photo and reconstruction in Giostra, Lusuardi Siena 2004, 522, Figs. 9:a-b).

²³ Its structure is similar to the one from Niederstotzingen (cf. Brogiolo, Arnau 2007, 57, cat. 1.1.16).

²⁴ For an attempted reconstruction see Balbi (1991, 15), although this author does reconstruct the armours not completely following the source but in a way more similar to the model of the Niederstotzingen armour; see a recent publication of the fragment in Brogiolo (2017, 48).

also the detail of the whole image is more rough than the other one. The lamellar armour is composed of five bands or rows, in a too schematic way. Again, the presence of a monogram suggests that the belt was made in workshops of the Eastern-Roman Empire.

Although not belonging to the Roman material culture but to the Lombard one,²¹ the plaque of Valdinievole, in reality the front part of a "Lamellenhelm",²² i.e., of a helmet of lamellar construction,²³ dated to the first half of the 7th century, shows a Lombard king (usually identified as Agilulfus) surrounded by his bodyguards or royal "Gasindii" (Balbi 1991, 14, 30). Two guardsmen flanking the king, are equipped with lamellar helmets which are furnished with horsehair-crests and are tied under the chin. They also hold round shields with metal bosses and decorated rivets, and are armed with spears. Their bodies are protected by lamellar armours (Fig. 13:1).²⁴ The iconography is an "imitatio barbarica" of the Imperial Roman one, as shown by Guillou (1970, 210-214), but the warriors are Lombards, although they wear lamellar armour similar to the one of Isola Rizza. The armour (generally called "lorica" in normative and literary texts



Fig. 24. Nearly completely preserved lamellar armour from Rupkite, late 6th – early 7th century, Stara Zagora Historical Regional Museum, Inv. no. 3C3-723 (after Tobias, Klein 2010a).

Ryc. 24. Niemal kompletnie zachowany pancerz lamelkowy z Rupkite, koniec VI – początek VII w., Regionalne Muzeum Historyczne w Starej Zagorze, nr inw. 3C3-723 (wg Tobias, Klein 2010a).

of the Lombards)²⁵ is composed of what seems to be an armoured gorget, followed by three rows of lamellae protecting the torso and the same number

of lamellar rows protecting the thighs. The armour of the warrior to the right of the king seems to have a spherical protection for the shoulders (Menis 1990,

²⁵ Astolpus (cc.2-3), Paul the Deacon (V,40): ...Overcome at last, since he was of a tender heart, by their prayers and tears, he handed his cuirass and his helmet, and his greaves and his other arms to the deacon, and dispatched him to the battle to play the part of the king (*Victus tandem, ut erat pii cordis, eorum precibus et lacrimis, loricam suam, galeam atque ocres et cetera arma diacono praebuit in suaque persona eum ad proelium direxit.*



Fig. 25. Single "lammina" from the armour of Gradina on the Jelica, late 6th – early 7th century, National Museum Čačak, Inv. no. II 81/96 (after Milinković, Špehar 2014, cat. 169).

Ryc. 25. Pojedynczy zbrojnik odkryty w Gradinie na Jelicu, koniec VI – początek VII w., Muzeum Narodowe w Čačak, nr inw. II 81/96 (wg Milinković, Špehar 2014, cat. 169).

96, 114, cat. II.1; Brogiolo, Arnau 2007, 56, cat. 1.1.15). Another rough iconography of a Lombard warrior in lamellar armour is perhaps visible on a fragment of a shield applique, from Trezzo sull'Adda (Milano) (Balbi 1991, 48), where a warrior is incised. He is depicted represented with a lamellar helmet, a round shield, lamellar armour reaching to his feet and a spear (Fig. 18:3). A similar image also appears on a shield applique from Sovizzo (*ibid.*, 50). In both cases the lamellae of the armour are symbolically represented with a punching in the shape of reversed Z. These punches are visible all over the body of the man, including the helmet. This iconography, apart from finds from Lombard graves dated to the 7th century AD, confirms the employment of such armour by Lombard military elites (*ibidem*, 29, 61; see also Pl. E1 – reconstruction of a Lombard "Dux"). The same took place in the area under the control of Merovingian Frankish elites.

Archaeology and analogous finds

The two armours from Kranj belong to the group of so-called Late Antique iron lamellar armours dated to the 6th and 7th centuries and considered as typically Eastern Roman products

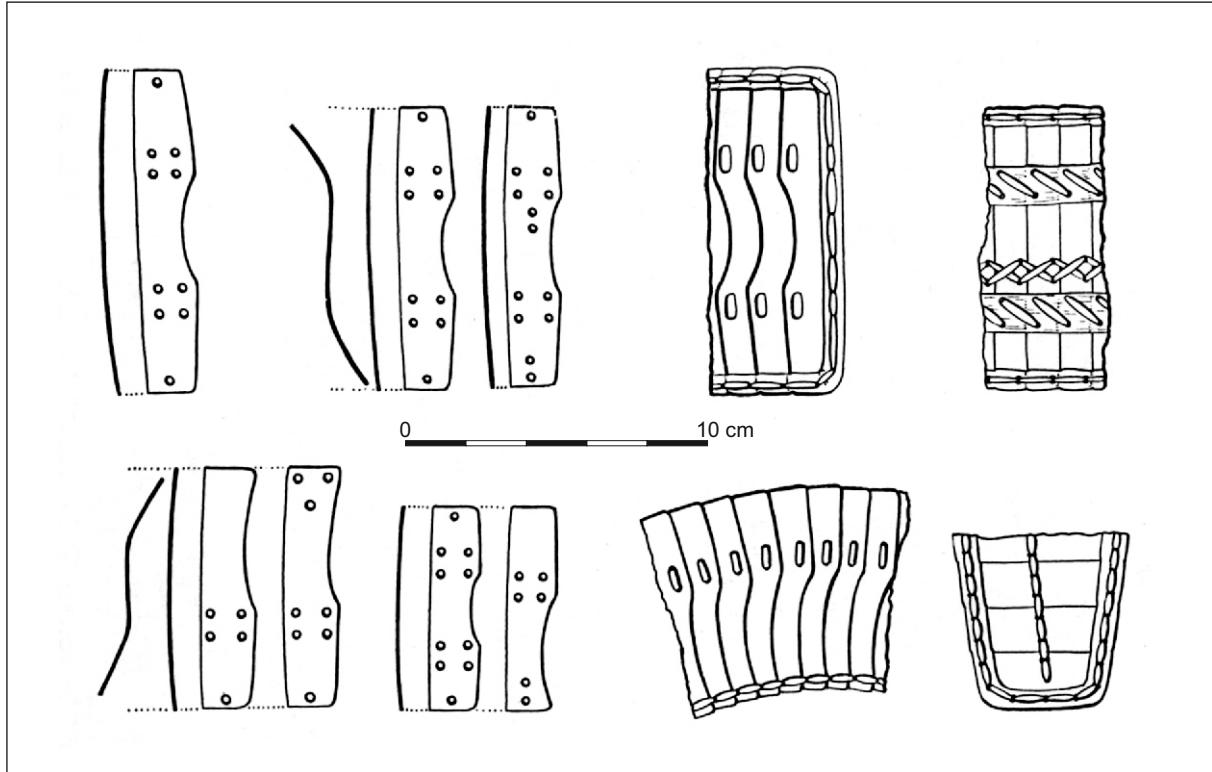


Fig. 26. Fragments of lamellar armour from Kerch, late 6th – early 7th century, Historical State Museum in Moscow (after Arendt, 1932, Fig. 3:a).

Ryc. 26. Fragment pancerza lamelkowego z Kerczu, koniec VI – początek VII w., Państwowe Muzeum Historyczne w Moskwie (wg Arendt, 1932, Fig. 3:a).

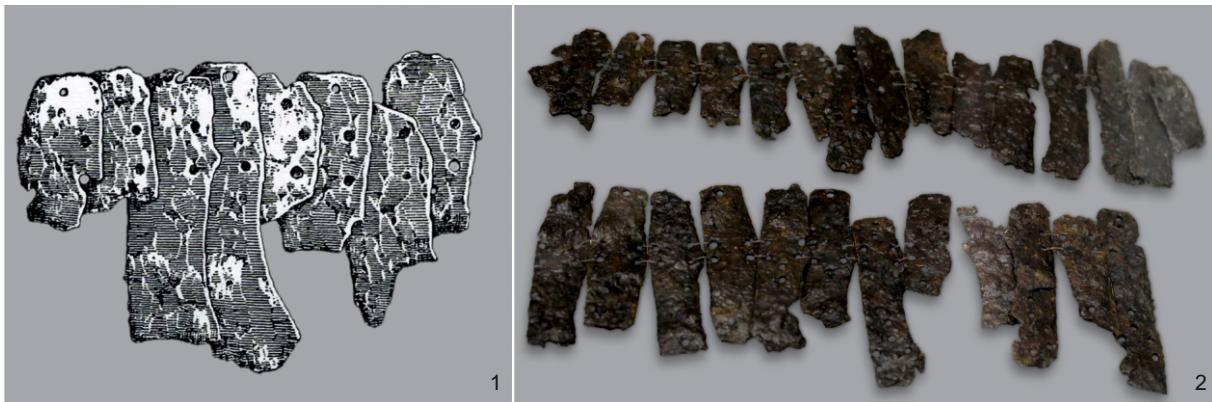


Fig. 27. Lamellar armour plates from Grave 119, late 6th – early 7th century, Museo dell’Alto Medioevo in Rome, Inv. no. 1614 (1 – after Mengarelli 1902, 299, Fig. 180; 2 – photo by R. D’Amato).

Ryc. 27. Zbrojníki pancerza lamelkowego z Castel Trosino, grób nr 119, koniec VI – początek VII w., Museo dell’Alto Medioevo in Rome, nr inw. 1614 (1 – wg Mengarelli 1902, 299, Fig. 180; 2 – fot. R. D’Amato).



Fig. 28. Iron plates and fragments of plates of a lamellar armour from Zidani gaber nad Mihovim, 6th century, Museum of Dolenjska, Novo Mesto. Photo by T. Lauko; © Narodni muzej Slovenije.

Ryc. 28. Želazne zbrojníki pancerza lamelkowego i ich fragmenty z Zidani gaber nad Mihovim, VI w., Dolenjski muzej w Novo Mesto. Fot. T. Lauko; © Narodni muzej Slovenije.

(Glad 2012; 2015, 113-125). During the 6th-7th centuries pieces of armours that are recovered now in Central, Western and Southern Europe were mainly produced in “fabricae” of the East Roman Empire. They are mostly found in archaeological contexts in the Balkans and Central Europe, although some rare finds are known from Western Europe and the Eastern Mediterranean. Substantially, there are bits and pieces of nearly a hundred lamellar armours known thus far in Europe, dating mainly from the second half of the 6th and the early 7th centuries. These were found at almost 80 sites spanning from the Caucasus in the East to Spain in the West (Kory 2004, 391-400, Abb. 65-66; Bugarski 2005, 168-169; Vizcaíno Sánchez 2008; Glad 2009, 122-131, 138; 2015, 119-123; Sagadin 2016b, 15).

Some of the most complete or nearly complete armours come from Roman contexts (or contexts of Roman “foederati”). Some are known from the territory directly under the Roman rule (the Balkans, Italy, Spain) and these were mostly found within settlements or fortifications (with some exceptions from graves), or in fortified centres and urban centres of the Empire: apart from Kranj, it is the case of those found in Caričin Grad (Fig. 19-20; Bavant, Ivanišević 2006, 99, n. 15; Tobias, Klein 2010b), in Viminacium, the Svetinja site²⁶ (Fig. 21; Popović 1987, 28-30, сл. 22-23; Bugarski 2005, 162-166), in the fortress of “Dux Isauriae” in Cilicia (Fig. 17), in Rome itself (Fig. 22; Arena et al. 2001, 399-401, II.4.764-777), Cartagena (Fig. 23) and Asparos (Fig. 43). Two very large

²⁶ Two lamellar suites have been found there; one was found on the floor of a building, which was presumably a blacksmith’s workshop.

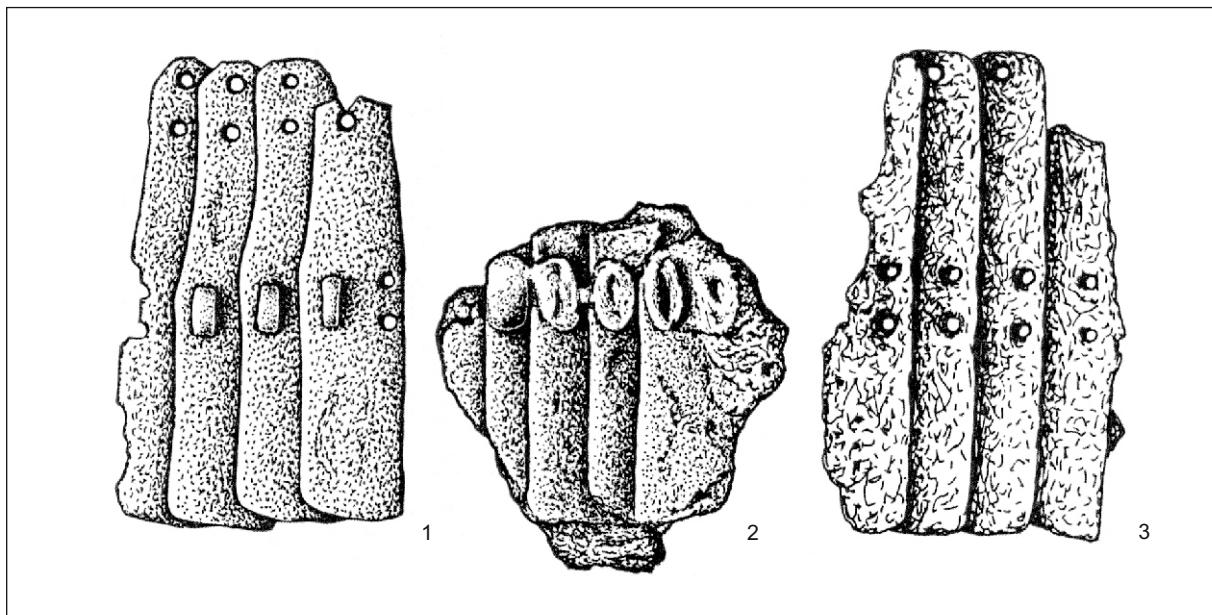


Fig. 29. Fragments of plates of a lamellar armour, late 6th century – early 7th century: 1 – Kirchheim/Ries, Kr. Aalen, grave 363; 2-3 – Schretzheim, Ldkr. Dillingen, Grave 580 (after Paulsen 1967, Taf. 64).

Ryc. 29. Fragmenty pancerzy lamelkowych, koniec VI – początek VII w.: 1 – Kirchheim/Ries, Kr. Aalen, grób nr 363; 2-3 – Schretzheim, Ldkr. Dillingen, grób nr 580 (wg Paulsen 1967, Abb. 64).

fragments of such armour were found in the grave of a Barbarian “Phoederatus” chieftain in Rupkite (Stara Zagora, Bulgaria) (Fig. 24; Tobias, Klein 2010a).

The lamellar suites found in present-day Serbian territories have been thoroughly studied by I. Bugarski. Apart from the two kits from the “Viminacium” site Svetinja, dated to the last two decades of the 6th century (Popović 1987, 28-29, 35; Bugarski 2005, 167), and complete rows found in Caričin Grad, scarce finds have been put to light at Gradina on the Jelica, Bregovina in Serbia, and Gornji Streoc and Čečan in Kosovo (Bugarski 2005, 168, n. 33-36). According to the data listed by I. Bugarski, the Svetinja complete armour had more than 500 lamellae arranged in twelve or thirteen horizontal rows (plus four rows of the shoulder-arm protection). The total weight of the armour was more than 6 kg (ibidem, 161-166, 172). Recently however at Gradina on the Jelica several hundreds of “laminæ” have been found together with part of mail armour, maybe a neck guard or part of an armoured gorget (Milinković, Špehar 2014, cat. 169). They are rectangular and furnished with holes pierced in different parts of the single “squamae”. The rows still preserved their leather edges, like in the Kranj armour. One “squama” found in the same locality (Fig. 25) measures 11.2 × 8.1 × 0.3 cm, and, notwithstanding the fact that it was considered as an ear protector (Milinković, Špehar 2014, cat. 168), it could be more realistically

considered part of the horse protection. No ear protector can have six holes at the corners and sides, bearing in mind the fact that for an ear defense we should imagine a wide cheek-piece. What is more, the lamella from Gradina does not correspond to any cheek-piece of a helmet found by archaeology or represented on the Roman iconography of this age.

The iron “squamae” produced in the workshop of Crypta Balbi in Rome (Fig. 22), dated to the second half of the 7th century AD, were manufactured together with other protections, like “Lamellenhelm type” helmets and “cheiromanika”, i.e., armoured gauntlets (Ricci 1997, 255; Arena et al. 2001, 399-401, II.4.755-759 /armoured gauntlet/; II.4.760-763 /helmet/; II.4.764-777 /”lamellæ”/); for the “cheiromanika” see *Strategikon*, I,2, v.23). The “laminæ” vary from 5.6 to 3 cm in length and from 1.7 to 2.2 cm of width, with an average thickness of 0.2 mm, although their actual state of preservation seems to suggest that none of them is completely preserved. Interesting is also a surviving rectangular buckle for the armour’s fastening. As it can be said on the basis of a careful analysis of finds, the centre of production of Rome has demonstrated that during the 7th century new kinds of weapons appear in Italy. These were originally seen as an evolution of previous types, but in fact they were products of imperial “fabricae” active in Italy since the time of Justinian’s wars against the Goths. These workshops continued the

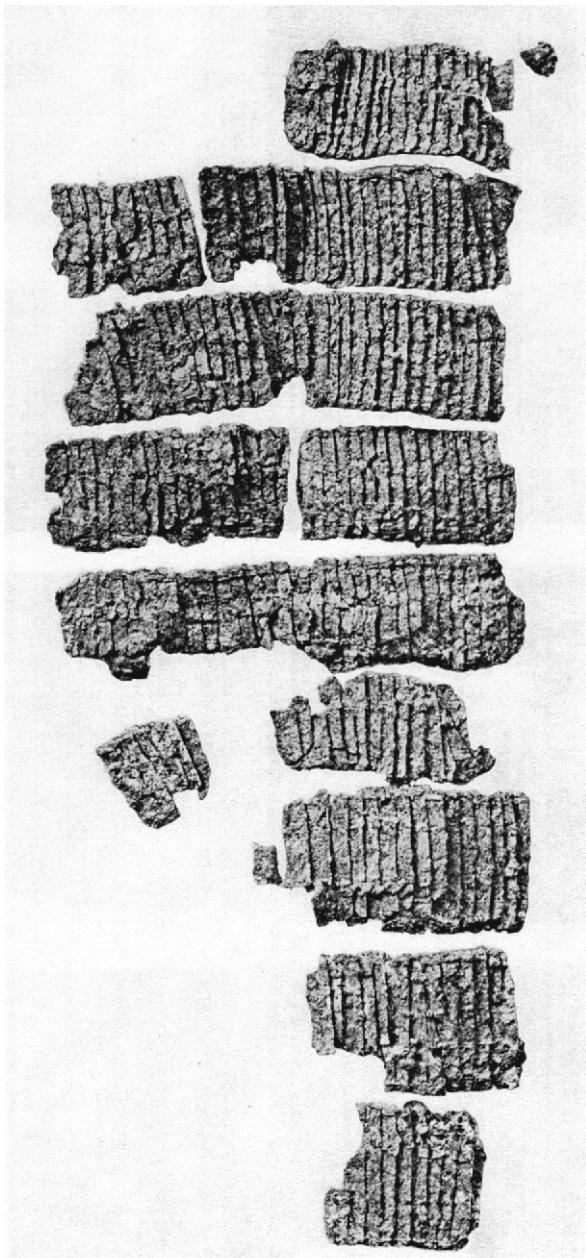


Fig. 30. Nearly completely preserved lamellar armour from Niederstotzingen, ca. 600 (after Paulsen 1967, Taf. 56).

Ryc. 30. Niemal kompletnie zachowany pancerz lamelkowy z Niederstotzingen, ok. 600 r. (wg Paulsen 1967, Taf. 56).

production of such weapons and developed their own models. Because the Romans usually did not bury soldiers with weapons (Petković, Bugarski, Miladinović-Radmilović 2016, 266 ff.), there remains scarce evidence of such armours in the Italic territories under the control of the Empire (Ricci 1997, 256, 268-271).

The armour of Cartagena (at those days called "Carthago Spartaria") was found near the ancient Roman theatre (Vizcaíno Sánchez 2008, 198, 200).

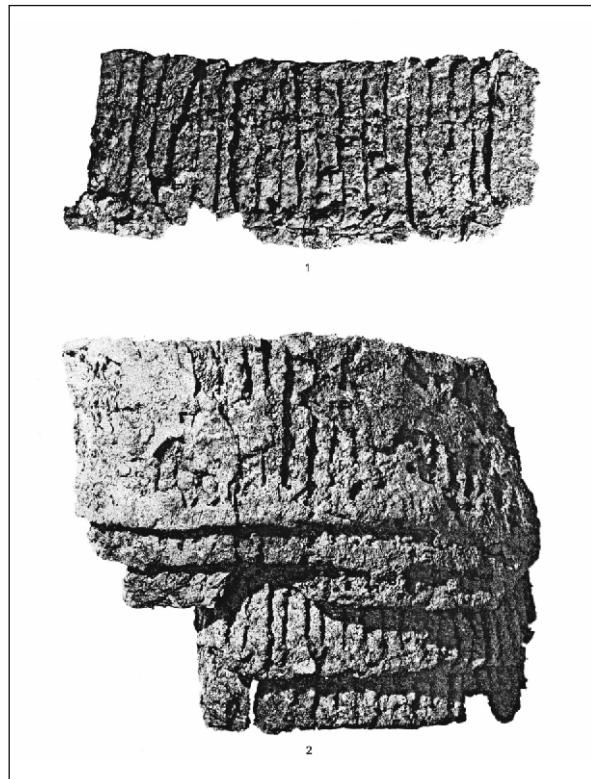


Fig. 31. Nearly completely preserved lamellar armour from Krefeld Gellep, 6th/7th century AD (after Pirling 1979, Taf. 96).

Ryc. 31. Niemal kompletnie zachowany pancerz lamelkowy z Krefeld Gellep, VI/VII w. (wg Pirling 1979, Taf. 96).

It emerged from the debris of the destruction of the city done by the Visigoths in 625 AD. Thus, its condition is similar to the Kranj armour. The lamellar armour was however only partially preserved (*ibidem*, 182-183) and it was possible to recover only about 114 fragments of iron plates (Fig. 23), some damaged by corrosion. All in all, there were only some rows that still could not have been completely assembled as armour. The "squamae" discovered at Cartagena were modelled as rectangular plates whose height is 6/7 cm and their width is 2 cm. This is a little shorter but also wider than the lamellae of the better preserved armour from the fortress of Svetinja (Bugarski 2005, 162; Vizcaíno Sánchez 2008, 205). They are however shorter than the ones from Kranj, which can suggest a more possible employment on horseback, while the ones from Kranj could have also been used by armoured infantry. They also have rounded corners, most probably in order to reduce the sharpness of their edges and thus to prevent damage to leather straps, which did not survive in the Cartagena specimen. What is different from other lamellar armours (Figs. 27-28), none of the recovered plates from Cartagena have concave notches in the middle of the longitudinal side,

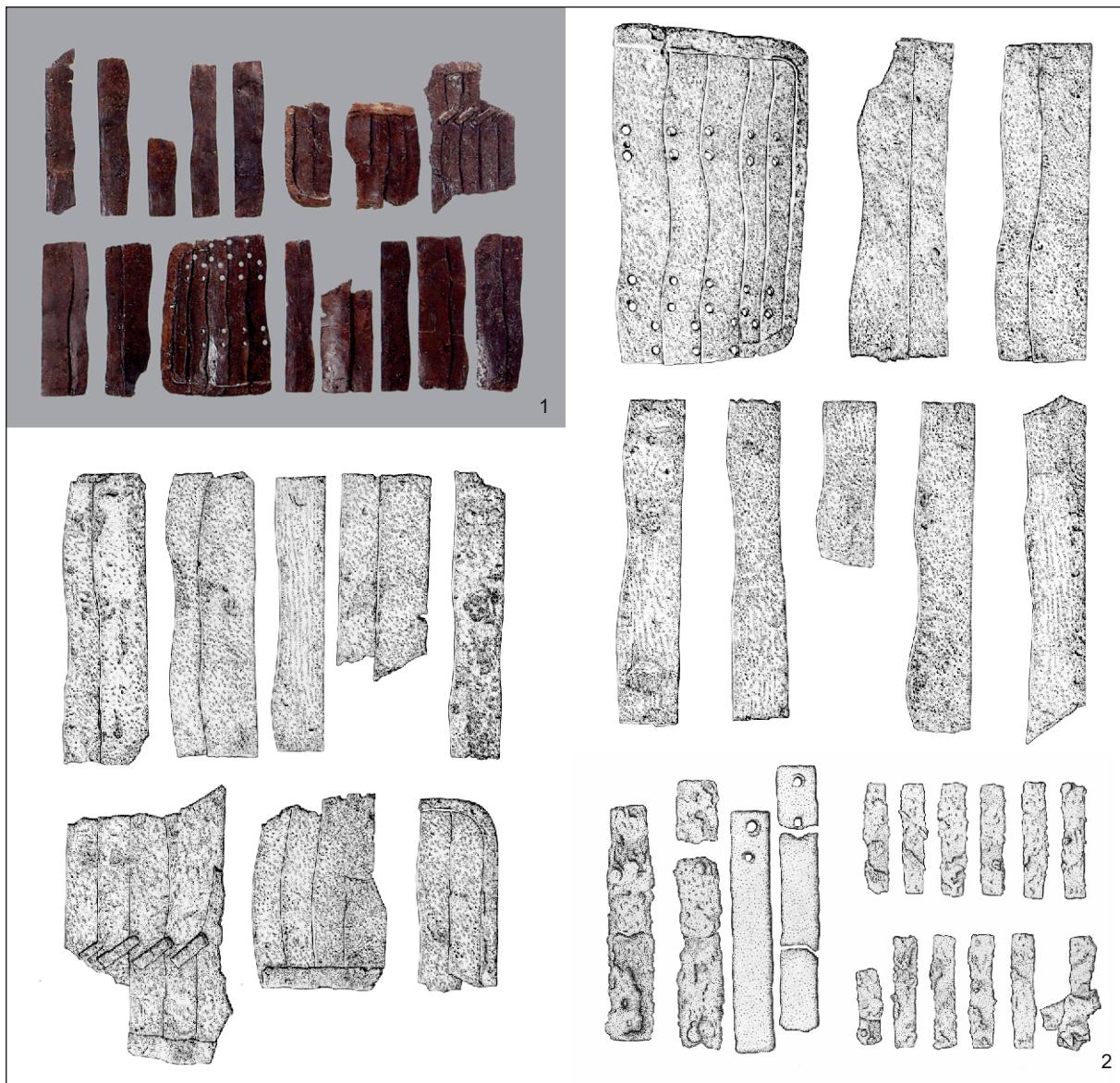


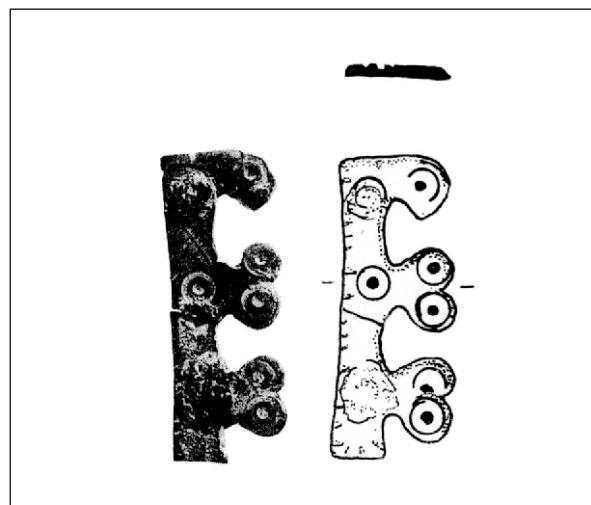
Fig. 32. Fragments of a lamellar armour from Wesel, 6th / 7th century (1 – after *Various 1996, 305*; 2 – after *Janssen 1990-1991, Pls. 15-17*).

Ryc. 32. Fragmenty pancerza lamelkowego z Wesel, VI/VII w. (1 – wg *Various 1996, 305*; 2 – wg *Janssen 1990-1991, Pls. 15-17*).

whose purpose should be to create a greater flexibility of the rows. In any case some lamellar armours (such as the ones from Svetinja) have both types, with and without notching, perhaps for functional reasons (Bugarski 2005, 163, Fig. 2). Although it is very difficult to determine the number of each one or to establish for which part of the armour they have been used, usually these lamellae should have been used to protect the main body, as it is for instance visible on the Isola

Fig. 33. Fragments of possible fastening pectoral element of a lamellar armour from Luni, 7th century (after *Frova 1973, 568, Pls. 136:5; 139:22*).

Ryc. 33. Fragmenty zapięć (?) pancerza lamelkowego z Luni, VII w. (wg *Frova 1973, 568, Pls. 136:5; 139:22*).



Rizza horseman (Fig. 13:2). The armour from the fortress of Gonio-Asparos (Fig. 43), recently recovered in the course of excavations by a team of Georgian and Italian archaeologists of the University of Ferrara led by Professor Zerbini, was found together with other weapons of the Roman or Persian garrison, discovered in the debris of destruction dated to circa 550 AD. At the moment, only 18 pieces have been restored and cleaned, and their function is not clear. All that is known is that they are part of protective armour of splint construction.²⁷

The Roman factories also supplied peoples who were sometimes enemies and sometimes allies of Byzantium.²⁸ This is proved by finds of lamellar armours from areas outside the boundaries of the rulers of Constantinople. These armours came to light in burial contexts (Avarian in the Carpathian Basin, Alemannic in South Germany and Frankish in Northern Rhineland – for instance the Frankish grave from Krefeld-Gellep and the Alemannic grave from Niederstotzingen) (*Die Franken...* 1996, 305; Bugarski 2005, 174-175; Glad 2012, 357; Major 2018, 575-583). While the Avars brought them to the Carpathian and Danubian Basin, the Germanic elite used these armours as a symbol of warrior status. In Italic and Germanic graves of the Franks, the Lombards and the Alamans the depositions of such armours are very rare, and are reserved to elite warriors. These finds demonstrate that among the populations living at the borders of the Roman Empire, or occupying territories which were once part of it, the model of the Eastern lamellar armour was one of the most prestigious (Giostra, Lusuardi Siena 2004, 520).

In Frankish territories, besides sporadic finds (Kirchheim, Schretzheim, Dillingen; Fig. 29:1-3), Grave 12a in Niederstotzingen near Ulm (Baden-Württemberg, South Germany) revealed one of the most beautiful and complete specimens of such armours, together with a Mediterranean lamellar helmet (Paulsen 1967, 125-133, 191, Taf. 21-22, 54-58, 71, 83; Balbi 1991, 48-49; *Die Franken...* 1996, 303, Fig. 243; Haas-Gebhard 2004, 528; Kokkotidis 2004, 737, cat. 10.2). The armour was found deposited over the lower legs of one of the

buried men, but it also partially covered another man buried beside. Therefore, it was difficult to identify the owner of the corselet. On the other hand, it was probably an elite warrior who had fought in Italy with the Franks against the Lombards as an ally of Byzantium, and was buried there around 600 AD. Basically, this armour does not differ that much from the Kranj Armour 1. It is composed of 600 or 700 overlapping plates linked vertically between them by leather straps. The plates are arranged in nine horizontal bands overlapping each other (Figs. 13:3, 30). As the Kranj armour, it was composed of two parts: the upper one, protecting the torso, and the lower one, defending the pelvis and reaching the thighs. Like the Kranj armour, the “lorica” from Niederstotzingen did not have sleeves and was supported by two narrow shoulder guards which were also formed by horizontally arranged “squamae”. But differently from the Kranj armour, (and on the other hand similarly to the armour from Rome) the Niederstotzingen armour was equipped with four iron buckles with round fittings for the purpose of fastening.

Another well preserved lamellar armour found in a Germanic grave was excavated in a grave in Krefeld-Gellep (Nordrhein-Westfalen, West Germany; Fig. 31) (Pirling 1979, 42, 111-116, Taf. 41-43, 96-97), and another again at Wesel, Grave 39 (*Die Franken...* 1996, 1013). The armour of Wesel (Fig. 32) is composed of plates measuring between 4.5 and 10.2 cm. Again the armour is dated to the end of the 6th century and is made of “laminae” of different dimensions (Jannsen 1990/1991, 80, 104, Taf. 15-16). 16 fragments are too few to understand the composition of the armour, but some parts of it are still attached together and to the leather lining, maybe forming part of the protection of the upper arm, or perhaps of a limb armour.

More fragmentary are the finds in Lombard graves of Castel Trosino. In the Lombard Italic graves we did not find complete suites of lamellar armours, but only fragmentary parts of them. The scarcity of such defensive corselets confirms a selective nature of funerary goods. In Castel Trosino Grave 119 contained a heavy “lorica”

²⁷ The authors would like to thank Professor Zerbini and Prof. Khakidze for a kind permission to publish it in a worldwide preview.

²⁸Certainly such supply was not official one in time of war. The weapons and even iron as a raw material could not be sold, as it was forbidden by the Roman law (ex. Justinian, 4.41.2). Foederati might have been supplied with such armours (Svetinja), but the peoples who had such status could be enemies of tomorrow. This, for instance, was the case with the Lombards, who were fighting for Narses against the Goths (554) and some years later (568) invaded Italy. The problems of the way in which the Barbarian chieftains could have been in possession of Roman weaponry is complex but depended on many factors: booty of war, temporary alliances, gifts from Imperial Authorities, interchange of military culture with workshops working under different masters, etc...

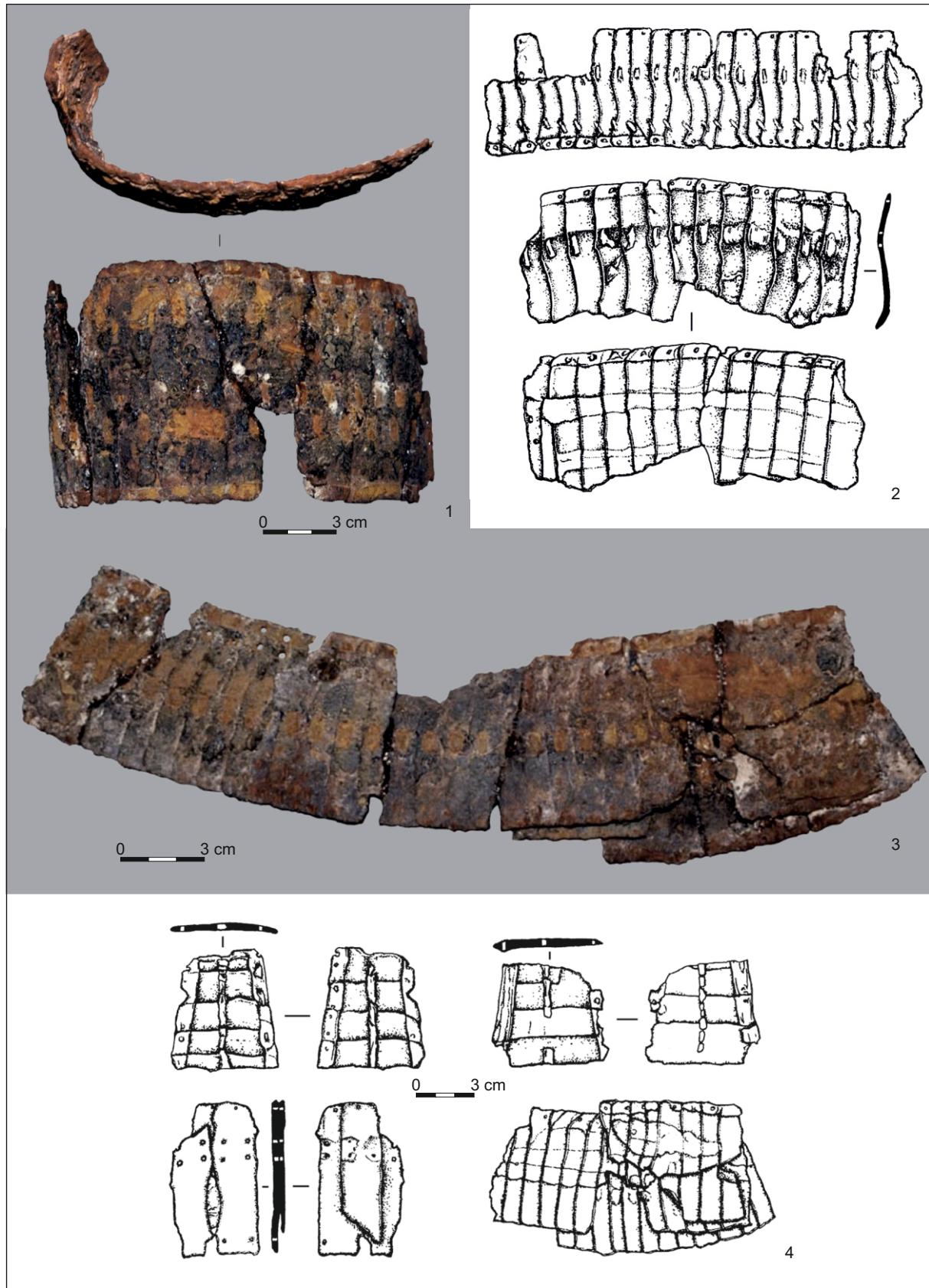


Fig. 34. Fragments of a lamellar armour from Kertch, 6th/7th century, State Historical Museum Moscow (after Kubarev, Zhuralev 2012, Figs. 2-4-5).

Ryc. 34. Fragmenty pancerza lamelkowego z Kerczu, VI/VII w., Państwowe Muzeum Historyczne w Moskwie (wg Kubarev, Zhuralev 2012, Figs. 2-4-5).



Fig. 35. "Lamellae" from Selenča, 7th century, Museum of Vojvodina in Novi Sad. Photo by R. D'Amato (courtesy of the Museum).

Ryc. 35. Zbrojníki z Selenčy, VII w., Muzej Vojvodine, Novi Sad. Fot. R. D'Amato (dzięki uprzejmości Muzeum).

made of rectangular lamellae, connected with one another with the use of iron wires (Fig. 27; Mengarelli 1902, 175; Menis 1990, 187, cat. IV.58b-c). They were found with a rich military kit (Menis 1990, 180 ff.), consisting of a lamellar helmet of the type found in Niederstotzingen and of an armoured mail gauntlet. The lamellae and the helmet are of the same type as those produced in the Roman Crypta Balbi factory, and are probably a work of this workshop, or perhaps of another Imperial factory. The "lorica", together with the shield, the horse harness and a Coptic vessel was deposited over a wooden cover of the grave. Therefore, after the cover had decomposed, the armour fell over the body of the warrior, rendering its recovery and understanding of its composition more difficult. Notwithstanding it, an attempt at reconstructing the whole armour was undertaken by Marco Ricci in 1995 (Fig. 14:1; Paroli, Ricci 2007). In this attempt, Ricci also took various differences of length among the "squamae" (from 3.7 to 12.3 cm) into consideration. He reconstructed the armour as divided into five bands for the torso, and four bands for the legs. Shoulder pieces and upper sleeves defence were formed by two bands of lamellae. It is extremely important that the fastening metal elements positioned on the front of the torso armour are formed by four oblong plates, each supported by two clasps. A possible fragment of such fastening elements, also used by Ricci

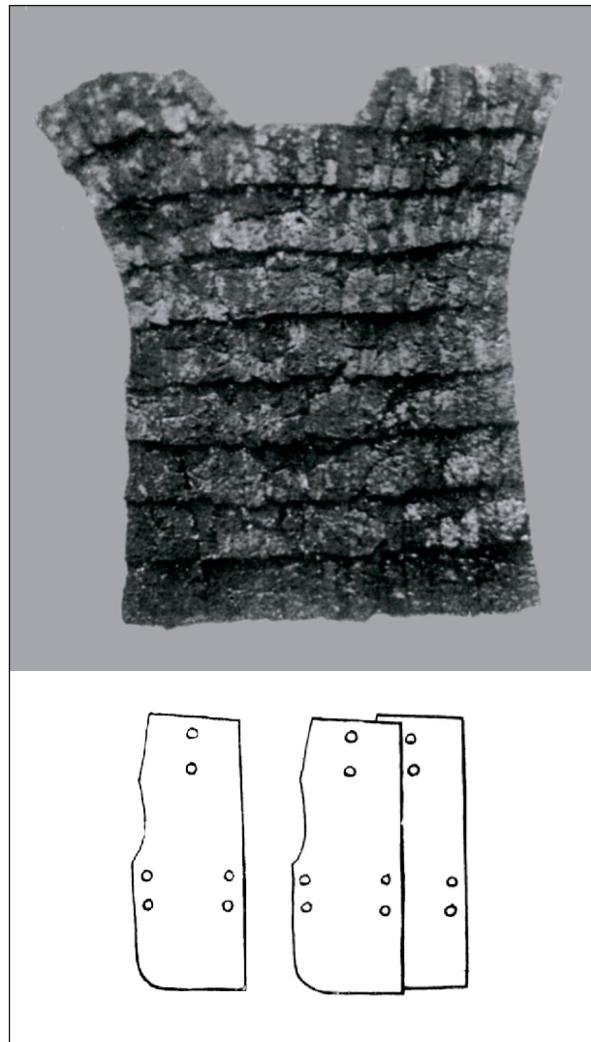


Fig. 36. Complete suite of a lamellar armour from Kunszentmárton, 7th century (after Csallány 1933, Pl. VI).

Ryc. 36. Kompletne zachowany pancerz lamelkowy z Kunszentmárton, VII w. (wg Csallány 1933, Pl. VI).

in the reconstruction of the Crypta Balbi armour (Fig. 14:2; Arena et al. 2001, 395), was discovered in the Luni excavations (Fig. 33; Frova 1973, 568, Pls. 136:5; 139:22; dimensions 4.8 × 1.2 cm). The fragmentary bronze sheet is plain on one side and dented on the other. It is applied to some leather surface by iron nails, two still in place. In the side view, it is decorated with typical eyes (small circles) of East Roman craftsmanship. Although it is very similar to plates used for fastening of Late Roman belts of Type Ehrenburg-Jamoigne (a specimen from Andernach, cf. Boube-Piccot 1994, Pl. T, Fig. 1), the find in question differs from those with the presence of a bilobed fastening system, and it is clearly connected with similar pieces which are vertically disposed. An attempt at reconstructing the armour of the Exarch of Ravenna, made by one of the authors of this paper

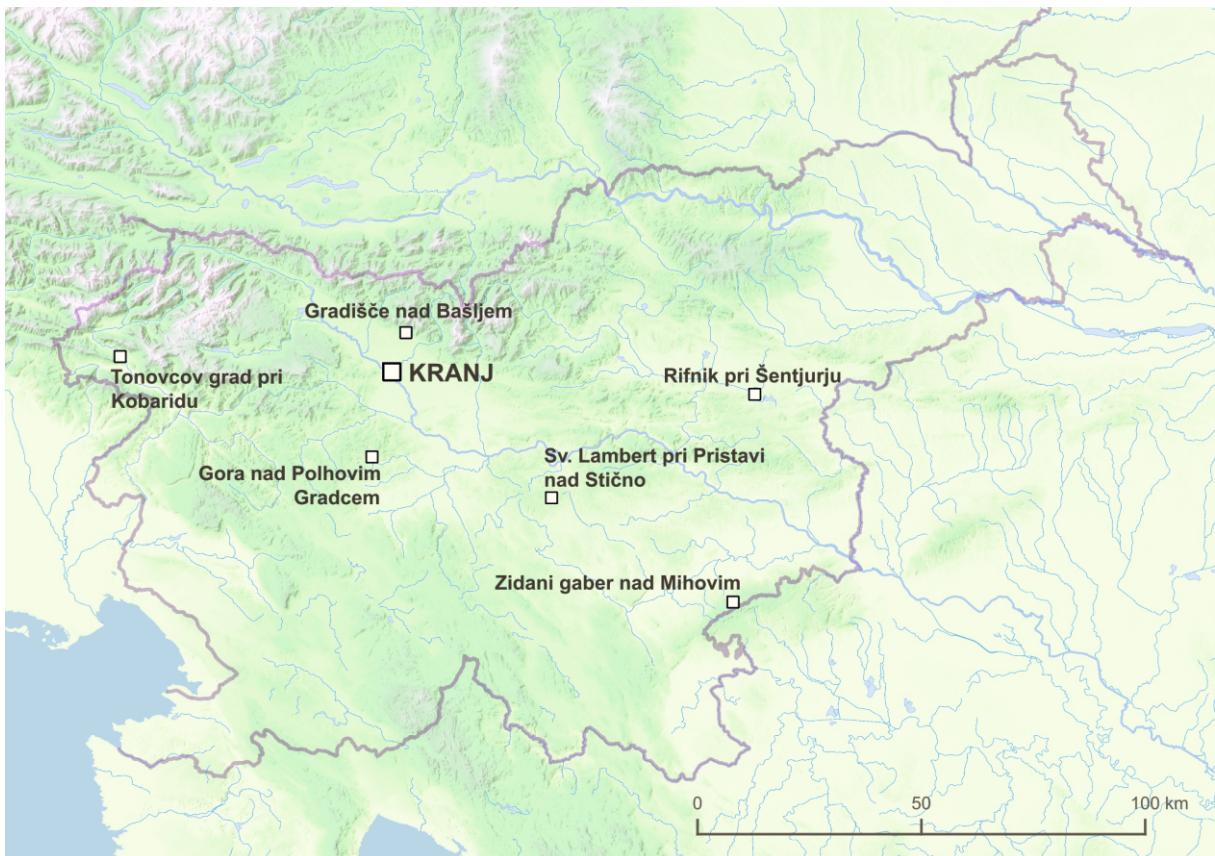


Fig. 37. Sites of lamellar armours or their parts from the 6th – early 7th century in Slovenia (source of map: Vida Bitenc, GeoPodobe).

Ryc. 37. Stanowiska ze znaleziskami pancerzy lamelkowych lub ich fragmentów z VI – początków VII w. na terenie Słowenii (źródło mapy: Vida Bitenc, GeoPodobe).

together with the archaeologist Albertini (Fig. 15), has followed such a scheme (D'Amato, Albertini 2007, 16-17).

Lamellar armours were originally thought of as having been introduced by the Avars to Europe and being products of Avar workshops. Such armours spread in Western and Eastern Europe and are now considered to be products of “fabricae” of the Eastern Roman Empire. It is certain that contacts with nomadic horsemen contributed to the spread of this type of armour in the Roman Army. The “squamae” of Kerch (in Southern Crimea) (Kubarev, Akhmedov, Zhuravlev 2003; Kubarev, Zhuravlev 2012), originally dated by Arendt to the 5th century on the basis of coins of Leo I (Arendt 1932, 49-51), but later considered to be of a 6th-7th century date by Kubarev and Zhuravlev, testify to the use of such armours by Asiatic mercenaries of the Roman army in this period (Fig. 26). Large parts of an armour (or probably two armours) were discovered there (Fig. 34), but they do not allow for a reconstruction of the whole armour. This armour was made of seven types of lamellae, most of which were cut on one side or had shaped edges.

The Russian authors believe that the armours of the catacombs are related to the Avar material culture. This is proposed on the basis of analogies with Asiatic lamellar finds, and with Avar finds from the Carpathians. We should however remember that Kerch at that time (6th-7th century) was a town under the control of the Roman Empire, although it was also a crossroads of many peoples. Furthermore, the aforementioned armour from Asparos, which was found in the debris of destruction dated to 550 AD (Fig. 43), was probably the armour of the defenders of the fortress, not of the attackers. Therefore, if the owners of the armours of Kerch were Avars, they were probably mercenaries of the Empire, in a period during which Imperial workshops produced such armours and helmets of lamellar construction for at least half a century.

In Vojvodina Museum of Novi Sad, there are a few “lamellae” from a grave found in Selenča (Fig. 35; Bugarski 2005, 170, Fig. 9). It is difficult to say whether they were made by the Avars or by Byzantium, but because the armour pieces were found together with fragments of a “Spangenhelm”, an assumption of Avar war booty from Byzantium is



Fig. 38. Iron "lamminae" of a lamellar armour from Gradišče above Bašelj, an iron arrowhead from Zidani gaber nad Mihovim, an iron angon from Gradec near Velika Strmica, a "lammina" and a group of clumped lamminae from Gora above Polhov Gradec, 6th – early 7th century, National Museum of Slovenia. Photo by T. Lauko; © Narodni muzej Slovenije.

Ryc. 38. Żelazne zbrojniki pancerza lamelkowego z Gradišča nad Bašeljem, żelazny grot strzały z Zidani gaber nad Mihovim, żelazny grot włóczni ("angon") z Gradca koło Velikej Strmicy, zbrojnik i zestaw połączonych zbrojników z Gora nad Polhov Gradec, VI – początek VII w., Muzeum Narodowe Słowenii. Fot. by T. Lauko; © Narodni muzej Slovenije.

plausible. A large part of a different lamellar armour was found in an Avar grave in Kunszentmárton (Hungary), as well (Csallány 1982). The armour from Kunszentmárton was an iron "lorica" (Fig. 36) and was originally believed to be related to Avar raids of the 6th century AD (Csallány 1933, 38–40, 51, Pl. VI). T. Dawson correctly demonstrated that this was a Roman armour, or perhaps made by a Roman craftsman, who was not necessarily identical with the man buried in the grave. The fastening system of the armour was reconstructed by B. Thordeman (1939, 246, n. 10) and then by T. Dawson (2003, 4–5 and Fig. 3), who suggested two possible ways of reconstruction. According to the first hypothesis proposed by Dawson, if one accepts a possibility that each "lamella" of this armour had six holes, it formed a construction assemblage similar to the



Fig. 39. Fragments of iron plates of lamellar armours from Rifnik near Šentjur (the top three plates) and from Tonovcov grad near Kobarid, 6th century, Celje Regional Museum and Tolmin Museum. Photo by T. Lauko.

Ryc. 39. Fragmenty żelaznych zbrojników pancerza lamelkowego z Rifnik koło Šentjur (trzy górne płytki) i z Tonovcov grad koło Kobarid, VI w., Pokrainski muzej w Celje i Tolminski muzej w Tolmin. Fot. by T. Lauko.

finds from Dura Europos²⁹ (*ibidem*, 2–3 and Fig. 2) with exposed suspension laces. This assemblage of "laced hanging" was somewhat unstable, because in such a construction the suspension laces passed outside the armour. They went through the large central hole at the top of each plate, around the upper binding lace, then back out the central hole and down the "squama" below. B. Thordeman believed that some armour plates were missing, on the basis of a hole at the bottom of the plate. In such a case, by putting an additional hole a laced solid assemblage was formed by padding the suspension joint with a strip of leather. This construction corresponds to the iconography of lamellar armours since the most ancient times. What can commonly be seen there is a plain band between the rows of plates, which usually represent

²⁹ The employment of such lamellar rawhide armour is a matter of controversy. It is still debated among scholars whether it was an armour for the horse neck or thighs of a man.

leather spacer strips. It can be added that until today there is no definitive evidence of how such armour was assembled. The stitching leather strips of the lamellar bands should have been a constant as we have also seen in the case of the Kranj armour.

A recently revised old find from Avar graves deserves to be mentioned. It is a nearly complete early medieval lamellar armour found in 1956 in the Koldusdomb part of Tiszavasvári (Fig. 45). After the restoration, the study and the publication by Major (2018, 575-585), it was possible to see that it was composed of four different types of “laminae” (II/A, II/B, II/C, III; *ibid.*, Fig. 3). The kinds of lamellae demonstrate again a similarity with already known finds (Castel Trosino, Kerch, Niederstotzingen, etc.), also regarding the structure of the armour. Certainly the armour from Koldusdomb was the cuirass of an important Avar chieftain. Despite uncertainties caused by our poor knowledge of the finding circumstances, the artefacts from Koldusdomb display several similarities with analogous finds and, according to the authors of this paper, are another proof of the production of such armours in Imperial workshops or by Roman craftsmen.

Complete or nearly complete Late Antique lamellar armours are very rare finds. What is generally much more common are finds of individual lamellae. In Slovenia, they were found at seven sites (Fig. 37; Sagadin 2016b, 15).³⁰ All these sites were fortified hilltop settlements (a prevailing settlement type in the South Eastern Alpine area in the 6th century) in points of strategic importance, with predominantly Romanic population. Archaeological finds testify to a presence of small Lombard groups (troops) in some of these settlements, as well (Ciglenečki 2005).

Apart from the two finds from Kranj, other suites of armour allowing for a more or less reliable reconstruction of the whole artefact which have as yet been unearthed in Europe, are the aforementioned ones from Rupkite-Stara Zagora, Niederstotzingen, Krefeld-Gellep and Svetinja. These lamellar armours are not identical in their composition and in the number and form of the “squamae”. The two armours from Kranj differ from other contemporary finds in the length and the uniformity of the lamellae: plates of other known armours rarely exceed 12 cm and very

rarely 15 cm. We should remember that, as it is also possible to see in the iconography, lamellae of different forms and sizes composed different parts of armours, which were rarely made of a single type of plates. Some types of lamellae often have a concavity on one of the longitudinal sides (Paulsen 1967, 125-127, Abb. 62; Glad 2009, 52-55, fig. 9-10; 2015, 114-117, Fig. 14), differently from the Kranj armour. The armours from Kranj show no traces of horizontal leather straps on the back side of the lamellae, under the central perforations. Such traces are visible for example in the Svetinja (Popović 1987, сл. 23; Bugarski 2005, 165, Fig. 5) and the Niederstotzingen armours (Paulsen 1967, 128, Taf. 57-58). Furthermore, in the case of the Kranj armours there are no traces of leather lining, which is known for example from the Svetinja armour (Bugarski 2005, 165, Fig. 6). As a whole, the armours from Kranj make an impression of artefacts of a simple unsophisticated design and manufacture. From this point of view, they slightly resemble the armour from Svetinja,³¹ which is also of a simple design, and is seemingly constructed of several rows of mostly equal-sized lamellae (Popović 1987, 28-29, сл. 22; Bugarski 2005, 162-166).

“Carnium”, the historical context of the Kranj armours, their origin and possible owners

Historically, after the fall of the Western Empire and the defeat of Odoacer the territory of present-day Slovenia came under the rule of the Ostrogothic Kingdom, and was restored under the Roman rule in the first part of the Gothic-Roman war, already before 540. The Frankish intervention in North Italy (“Venetia”) and Carinthia (“Noricum”) extended the Frankish rule for a short time also to western and central parts of present-day Slovenia. In the time of the Frankish occupation of “Noricum” and their threats to the Eastern Roman military and political order in “Pannonia” in the years 546/547, “Carnium” was a Roman military post in the nearest hinterland of the border (the Karavanke Mountains) with the Frankish territory. In order to deter the danger of a Frankish expansion to “Pannonia”, Byzantium allied with the Lombards (the Franks were finally expelled from the pre-Alpine and Alpine region by the Romans between 561 and 563). Between 546 and 548, an area in the

³⁰ Zidani gaber nad Mihovim (Fig. 28; *ibid.*, 73-74, Cat. 236), Gradišče nad Bašljem (Fig. 38; Bitenc, Knific 2001, 71-72, Cat. No. 226; Knific, 2004, 142, Fig. 17; Knific, Nabergoj 2017, 44, 221, Fig. 53), Gora nad Polhovim Gradcem (Fig. 38; Knific, Nabergoj 2017, 44, 221, Fig. 53), Tonovcov grad (Fig. 39; Milavec 2011, 48, 412, T. 11, nn. 3-6), Rifnik pri Šentjurju (Fig. 39; Bitenc, Knific 2001, 73-74, Cat. 238) and Sv. Lambert pri Pristavi nad Stično (unpublished – the authors would like to thank Dr. Timotej Knific for the information).

³¹ As far as the reconstructed position of rows of lamellae is reliable.



Fig. 40. Iron weapons (a shield boss, an axe, a spearhead, swords, a hook for a quiver suspension, a knife, battle knives, arrowheads and a javelin head) from the Lajh cemetery in Kranj, 6th century, National Museum of Slovenia in Ljubljana. *Photo by T. Lauko.*

Ryc. 40. Uzbrojenie (umbo tarczy, żeleźce topora, grot włóczni, miecze, haczyk do podwieszania kołczana, nóż, noże bojowe, groty strzał i oszczepu) z cmentarzyska Lajh w Kranju, VI w., Narodni muzej Slovenije w Lublanie. *Fot. by T. Lauko.*

Imperial territory was assigned through a “foedus” to the Lombards to settle down. This area also included parts of “Noricum Mediterraneum” in the territory of present-day Slovenia. Small Lombard troops were present in many settlements with prevailing Romanic population.³² They had control over “Carnium” as well. Many groups of populations of different origin joined the Lombard invasion of Italy in spring 568, but the whole population did not move away. Apart from the majority of the Romanic population, remains of Lombard and other Germanic groups are still attested in the territory of present-day Slovenia, including “Carnium”, till the beginning of the 7th century. In “Carnium”, the Lombards lived for more than half a century, from 547/548 until at least the year 600.

In the territory of continental present-day Slovenia, after the defeat of the Goths and the Franks, the Eastern Romans are supposed to have,



Fig. 41. The iron angon from Kranj, Museum of Gorenjska in Kranj, Inv. no. KrK 6807. *Photo by T. Lauko.*

Ryc. 41. Żelazny “angon” z Kranju, Gorenjski muzej w Kranju, nr inw. KrK 6807. *Fot. by T. Lauko.*



Fig. 42. Two iron pegs found near the Kranj armours, Museum of Gorenjska, Inv. nos. KrK 6808-6809. *Photo by T. Lauko.*

Ryc. 42. Dwa żelazne haki odkryte obok pancerzy z Kranju, Muzeum Gorenjska, nr inw. KrK 6808-6809. *Fot. by T. Lauko.*

³² On the archaeological traces of the Lombards in Slovenia cf. Knific (2004) and Ciglenečki (2005).

although in a modest way, restored the civil administration and kept or reinforced their military posts. Among the institutions of the Imperial state, the army was undoubtedly present. It consisted either of troops of Lombard “foederati” in the settlements of the South “Noricum” and “Pannonia”, or of regular Roman detachments. The Roman border defence in the South Eastern Alpine region and “Pannonia” was not based on defending a fortified border line, but on posts scattered in the area, with troops in those Romanic settlements that were located in points of strategic importance (Bratož 2014, 389-391, 439-469).

In the last decade(s) of the 6th century, the territory of central and eastern Slovenia was formally still an Imperial territory, but without clearly recognisable civil or military authority. Remains of the Romanic population and isolated groups of those Germanic peoples who did not join the Lombards in their invasion of Italy in 568 lived there. Only the church organisation based on ancient institutions remained (*ibidem*, 477-480).

After the decline of the classical Roman towns of “Emona”, “Celeia” and “Poetovio” in the Late Roman time, “Carnium” was the central and the most important continental town in the South Eastern Alpine area in the last decades of the 5th and during the 6th century. Such importance was increased by its position. It was situated on a natural elevation over the confluence of the Sava and Kokra rivers, was well protected in a natural way from the surroundings by the rivers and by the Kokra gorge. What is more, already in Late Antiquity it was additionally protected by the town walls built on the western gently sloping edge of the hill. Beside the indigenous Romanic population, groups of other peoples, mostly of Germanic origin, gradually settled here during this period. The inhabitants of “Carnium” buried their deceased in a large cemetery below the town, on its southern side (this area of Kranj was named ‘Lajh’). In the last 100 years, and even longer, not less than 720 (probably nearly 800) graves from the end of the 5th and the 6th century have been excavated, with parts of the cemetery presumably still being untouched (Stare 1980; Lux, Ravnik 2008; Podobnik 2016; Urek et al. 2016). The “Carnium” cemetery is one of the largest central European cemeteries of Late Antiquity. Grave goods demonstrate different origin and social status of the buried population as well as different cultural influences.³³ Life in “Carnium” declined



Fig. 43. Lamellar armour from Gonio-Apsaros, ca. 550 AD, Archaeological Museum of Batumi (courtesy photo L. Zerbini and E. Kakhidze).

Ryc. 43. Pancerz lamelkowy z Gonio-Asparos, ok. 550 r., Muzeum Archeologiczne w Batumi (fot. dzięki uprzejmości L. Zerbini i E. Kakhidzego).

at the turn of 6th-7th century, but continued uninterruptedly to the Early Middle Ages and later, although in a very reduced way (Sagadin 2008, 194-196).

Archaeologically, the importance of “Carnium” in Late Antiquity is testified to by the extent of the town, an early Christian centre with a church and a baptistery (Valič 1991; Sagadin 2017, 35-53), the large cemetery revealing the high number of its population, the defensive structures of the town

³³ See works of Vinski (1980), Knific (1995; 2004; 2005), Martin (2000), Bitenc and Knific (2001, Cat. Nos. 86, 181-193, 195-196, 216-225, 243-252, 254), Odar (2006), Milavec (2007), Knific and Lux (2010; 2015), Podobnik (2016), Urek et al. (2016, 226-257), Knific and Nabergoj (2017, 41-57).

and by specialised production (for example that of glass) (Sagadin 2004). Last but not least, a high number of prestigious goods, mostly found in graves, demonstrate a high position of the “Carnium” military and social elite, comparable to that of elites in the broader Balkan – Central European region of the time. An example of it are numerous iron “spathae”, iron shield fittings, iron spearheads, mail armour fragments, and attire and jewellery items made of gold, silver and semiprecious stones in female graves (Fig. 40). To these we can now add the two magnificent specimens of lamellar armours found in Tomšičeva 38.

The lamellar armours were produced by Imperial Roman “fabricae” which were making military equipment for officers or elite heavy cavalry. As prestigious goods they were adopted by the Germanic elites who were allied to Byzantium, as well as by the “foederati” (Bugarski 2005, 175; Keim 2007, 69-71; Glad 2012, 356-358, with further reading: 2015, 117-118). Most of the contemporary lamellar armours we have discussed above are dated to the second half of the 6th and the early 7th century. In Kranj, the context seems not to allow for a precise dating of the armours. The situation is additionally confused by the javelin or the “angon”, discovered beside the armours on the building floor (Fig. 41). “Angones” are known as a typical Frankish weapon which also had the function of a prominent social status symbol of the ruling strata of the Frankish and Alemannic society. The “angones” are spread mostly in the former territory of the Frankish kingdom in parts of present-day France, Belgium and Germany. They are generally dated from the end of the 5th to the middle of the 6th century, gradually coming out of use in the second half of the 6th century (Schnurbein 1974; Theune-Grosskopf 1997). This led the archaeologists who discovered the armours in Kranj, to propose a hypothesis that the assemblage as a whole (the two armours and the “angon”) should be connected with the Franks (or their Alemanni allies) who – according to written sources – reached the South Eastern Alpine region for a short time in the 540s (Sagadin 2008, 193-194; 2016c). Some grave goods from the “Carnium” cemetery in Lajh also have analogies from the habitation areas of the Alemanni and the Franks. This hypothesis would mean a very early chronology of the two armours (the fourth decade of the 6th century) as compared

with the predominant dating of such defences, that is, the second half or the end of the 6th and (beginning or the first half of) the 7th century (Glad 2015, 118). This hypothesis consciously places (Sagadin 2008, 193) the two armours from Kranj into a slightly different cultural and historical context than the other finds of such armours or their parts in present-day Slovenia, Balkans and Mediterranean regions. In these regions, lamellar armours are interpreted in the context of Byzantium’s rule (Bugarski 2005, 175; Glad 2012; 2015, 113-125), which is also the opinion of the authors of this paper.

There is no doubt that the lamellar armour was already in use in the first quarter of the 6th century. On the other hand, it is more probable that two armours from Kranj should also be interpreted in the context of the renewed Byzantium’s rule upon this area, which means, according to known historical data, the second half of the 6th century or the early 7th century. This hypothesis is “in primis” supported by the fact that the building where the armours were found was never rebuilt again after the unexpected destructive incident. This part of “Carnium” was never inhabited again in Late Antiquity. It means that the destruction of the building probably took place closer to the decline of “Carnium” at the turn of the 7th century, presumably due to the Avar incursion, and not during its peak in the second half of the 6th century.

The “angon” discovered beside the armours (Fig. 41) is an additional point supporting such theory. The “angon” from Kranj differs in details from classical Frankish “angones”. It has a head with four barbs while other “angones” have generally only two barbs, or three in extremely rare cases (Schnurbein 1974, 412, n. 9). It could therefore be an imitation of Frankish “angones” and is not necessarily connected directly with the Franks. Instead, it should rather be seen as an artefact demonstrating Frankish influence or contacts. We can also add that such kind of barbed weapons were already in use in the Roman army since the 3rd century, and were considered as a Germanic derivation of the old “pilum” by military manuals. Such weapons were reintroduced into the Roman army by Germanic warriors.³⁴

Therefore, the two lamellar armours from Kranj (and the “angon”) should probably be interpreted in the context of the Roman rule

³⁴ About the “pilum” Vegetius (Ep.I,20) said that *As to the missile weapons used by the infantry, they were called pila, and they were javelins headed with a triangular sharp iron, eleven inches or a foot long, that once fixed in the shield were impossible to be drawn out, and when thrown with force and skill they penetrated the cuirass without difficulty. At the present they are seldom used by us, but are the principal weapon of the barbarian heavy armed footsoldiers?. They are called bebrae, and every man carries two or three of them in battle.*

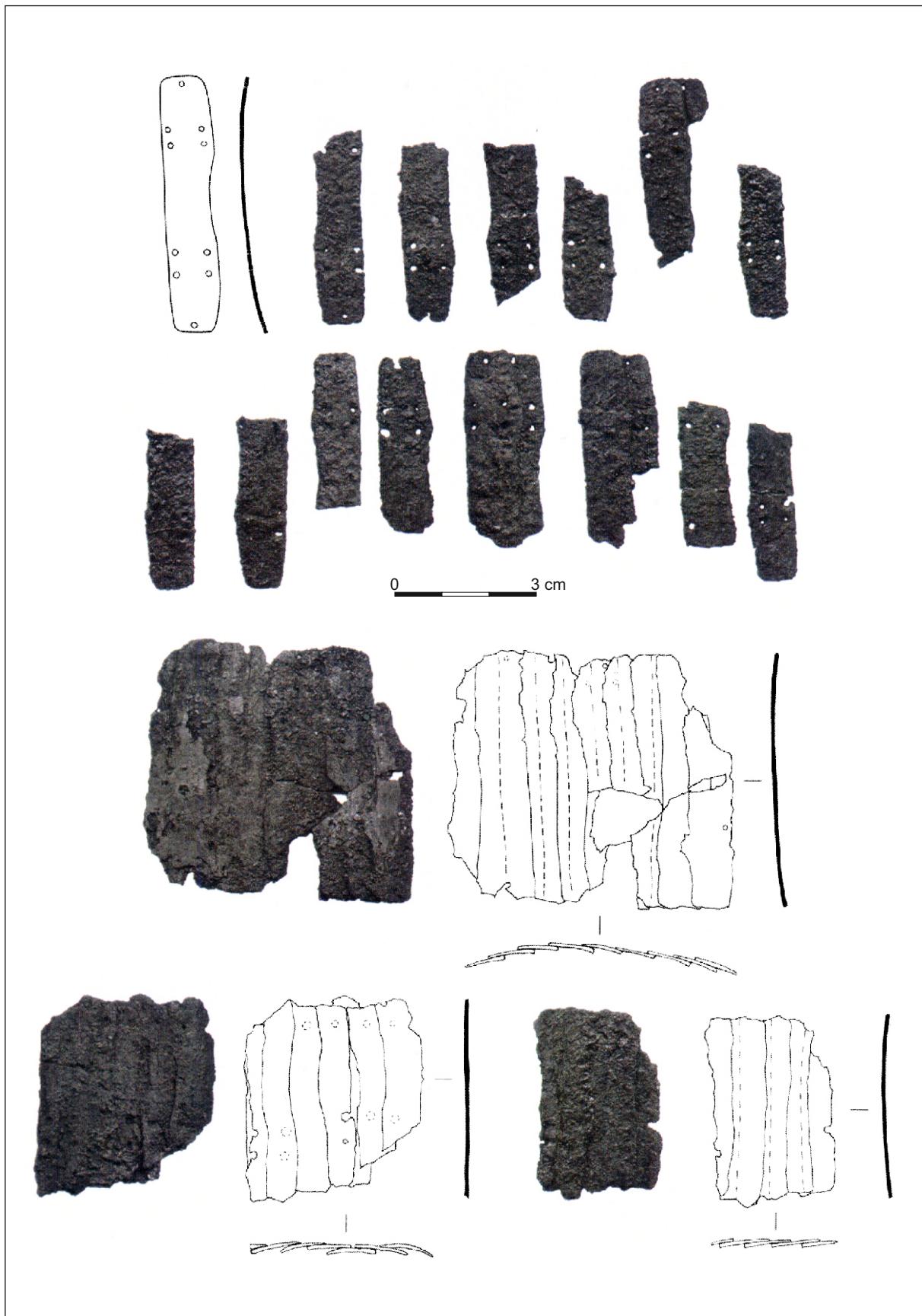


Fig. 44. Fragment of lamellar armour from Koldusdomb, late 6th – early 7th century AD (after Major 2018).

Ryc. 44. Fragment pancerza lamelkowego z Koldusdomb, koniec VI – początek VII w. (wg Major 2018).

in the South Eastern Alpine region in the second half of the 6th century. They may have belonged to some “foederati” of the Roman army in this region, or Lombard or other Germanic military aristocracy serving in Kranj under the Emperor’s rule. It is impossible to identify the origin of the individuals who wore these two armours – Lombard or some other – but we cannot exclude, either that they were reserved for heavy armoured Roman defenders of the city. As confirmed by source mentions of names of officers wearing such armours, at that time the ethnical composition of the Roman army was not a problem from all points of view, less than ever from that of the military equipment.

Which was a possible centre of production of such armours? The main “fabricae” of weapons for the entire Balkan region were mainly four: three on the Marmara Sea and one centred in Thessalonika, as proposed by Bavant for the Spangenhelmen and pieces of armours found in Caričin Grad (Bavant 2008, 348 ff.). The Kranj armours may have been produced in such “fabricae”.

Conclusion

The archaeological excavations in Kranj in 2005 revealed a small part of the Late Antique town of “Carnium” – a part of the town walls and remains of an adjoining stone building. The debris of the building concealed two nearly complete iron lamellar armours and an “angon”. These finds were lying on a mortar floor of the demolished building which was part of “Carnium’s” defence structures where this elite military equipment was kept.³⁵

The two armours from Kranj are a valuable material source for the appearance, structure and construction of Late Antique/Early Medieval lamellar armours. Finds of (nearly) complete lamellar armours are extremely rare and the state of their preservation does not always provide enough data for a reliable reconstruction. The two armours from Kranj are in this respect a source of enough trustable data, making a reliable description and reconstruction of their original aspect possible. Findings regarding the armour construction cannot be applied directly to all contemporary lamellar armours as they were of different design and construction. They were composed of lamellae of varying forms – as testified to by other more or less completely preserved Late Antique/Early Medieval lamellar armours and their reconstructions – according to the most up-to-date state of research. Additional data on Late Antique/Early Medieval

lamellar armours provided by written sources and rare contemporary representations of such defences confirm this assertion.

The two armours from Kranj are part of a group of settlement finds of small pieces or parts of lamellar armours discovered in the territory of present-day Slovenia and in the Balkan region that could be connected with the period of East-Roman rule. In “Carnium” (Kranj) and the central and eastern Slovenian region, this means the second half of the 6th century and suggests the context of Lombard “foederati” of Byzantium connected with other smaller Germanic groups. As an important status symbol of the Roman and Germanic military elite, the two armours additionally demonstrate the already known important position of “Carnium” in a broader region at that time.

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³⁵ The armours could have been suspended from the iron pegs (Fig. 42) that were found lying on the floor.

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DWA PANCERZE LAMELKOWE Z KRANJU (CARNIUM), SŁOWENIA, W ŚWIETLE ANALOGICZNYCH ZNALEZISK ARCHEOLOGICZNYCH, ŽRÓDEŁ PISANYCH I IKONOGRAFICZNYCH

Streszczenie

W 2005 r. w ogrodzie przy posesji Tomšičeva 38 w słoweńskim Kranju archeolodzy dokonali niezwykłego odkrycia, odsłaniając dwa kompletne pancerze lamelkowe z przełomu starożytności i wczesnego średniowiecza. Pancerze te, odkryte wraz z germańskim grotrem do rzucania („angon”), były nie tylko wyznaczonymi statusu, ale też efektywnymi elementami uzbrojenia elity ówczesnej kasty wojsowników. Zabytki te charakteryzują przede wszystkim militarną kulturę wschodnich Rzymian – Bizantyńczyków, będąc na wyposażeniu zarówno elitarnych, rzymskich oddziałów wojskowych, jak i wodzów ludów, które z Rzymem walczyły i mu służyły. Mogły być też elementami za pożyczonymi z kulturowego dorobku Konstantynopola.

Dwa pancerze lamelkowe przetrwały w doskonałym stanie, ale tylko jeden z nich został do tej pory poddany pracom konserwatorskim. Wykazuje on inspiracje i nawiązania do zabytków z terenu Cesar-

stwa Rzymskiego, do którego dzisiejsza Słowenia wciąż formalnie należała w przeciągu VI i przełomu VI i VII w. Znaleziska te podkreślają także duże znaczenie dawnego „Carnium” (dzisiejszy Kranj) w planach strategicznych władców Konstantynopola, dokumentowane także przez liczne odkrycia broni na całym terenem Słowenii.

Pancerze te mają też niezwykłą wartość naukową, gdyż są jednymi z najpełniej zachowanych egzemplarzy tego typu uzbrojenia ochronnego znanymi z terenu całej Europy. Pozwalają więc na uzyskanie wielu nowych informacji odnośnie konstruowania podobnych form uzbrojenia w późnej starożytności. Autorzy próbują rozjaśnić tę problematykę. Próbowią też – przy pomocy dostępnych analogii archeologicznych, źródeł pisanych i ikonograficznych z VI-VII w. – odpowiedzieć na pytanie, gdzie wytworzono pancerze z Kranju i kim byli ich użytkownicy.