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Mail from Treskavec: Contribution to the Study of Medieval Mail Armour

UDK 904:623.445.1(497.775)"653"

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Abstract: *This text presents a little-known example of mail armour from the Treskavec monastery near Prilep, kept at the Prilep Bureau and Museum. The SEM, EDX, XRF and metallographic analyses indicate the material and the manner in which the piece was made. In addition, the text reviews the emergence and the use of this type of defensive equipment, the (dis)continuity of its use in the Byzantine army, the right of inheritance, as well as the toponymy which points to a possible centre of production or, perhaps more likely, a workshop for repairs. The review of the movable findings in the Balkans points out the possible problems which made it unpopular in paintings from the early and middle Byzantine period. The numerous images of mail armour in monumental paintings from the late Byzantine period are classified in five variants on the basis of appearance. In the end, the text looks into how it may have found its way to the monastery.*

Key words: *defensive equipment, mail armour, Treskavec, warrior saints, Macedonia.*

The permanent collection at the NI Bureau and Museum of the City of Prilep¹ houses an exceptional example of medieval defensive clothing. It is a mail armour²

¹ I would like to thank the director of the Prilep Bureau and Museum, Gordana Spiroska Daniloska, and archaeologist Dusko Temelkovski, senior custodian, who granted me access to study and document the mail armour.

² It is not known how the mail armour was found. There is only basic information that the find was brought to the Museum of the City of Prilep from the Treskavec monastic complex in 1973. So far it has featured in several exhibitions and catalogues. See: Б. Талески, *Оружјето низ вековите*, in И. Велкоски (ed.) *Оружјето низ вековите. Изложба организирана по повод 40-годишнината од формирањето на музејот во Прилеп, Прилеп, Јуни 1995, Прилеп 1995*, pp. 11, k.e. 35, fig. 7.; *Старо оружје, историја-култура-традиција*, in Е. Петрова (ed.), *Старо оружје, изложба организирана во Музеј на Македонија, Скопје 1998, Скопје 1998*.

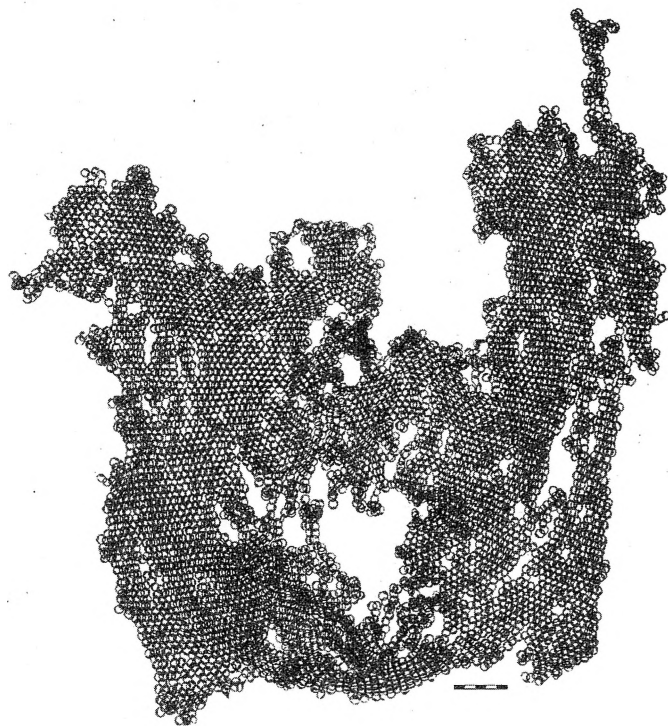


Fig. 1 Mail armour from the
Treskavec monastery near
Prilep,

brought from the monastery of Treskavec³. The find is a large fragment of mail armour, made of rings linked with rivets. The fragment measures 59x44 cm (fig. 1). Each ring

³ The Katholicon of St. Assumption of Virgin Mary and the Treskavec monastic complex are built in the picturesque environment of the Zlatov Vrv peak. There are older buildings in the same location, which indicate that it was inhabited as far back as antiquity, while the burial sites discovered in the vicinity date from the 4-3 century BC to 4-5 century AD. The great number of spolia, re-used during the construction of various parts of the katholicon, underline the sacral nature of this area. There is no precise knowledge when the monastic complex and the katholicon were built. The portraits of the Byzantine emperor Andronicus II and his son and co-ruler Michael IX, completely painted over in late 19 century, indicate that the katholicon existed in late 13 and early 14 centuries, i.e. between 1299 and 1316. In 1334, the Serbian king Stefan Dušan launched a strong offensive on the Macedonian territories under Byzantine rule, conquering Prilep and annexing it to the Serbian medieval state. Later, he issued several chrysobulls, gifting the monastery with expansive lands and villages. His portrait was painted while he still held the title of king, i.e. in the period after he conquered Prilep in 1334 and before he was declared emperor in 1345. Later, the katholicon in the monastic complex underwent major refurbishments in late 15 and 16 centuries. The importance of the Treskavec monastery declined after the Ohrid Archbishopric was abolished in 1767, but nevertheless persisted. The katholicon was renovated in the second half of 19 century. The history of the Treskavec monastery since its foundation has been turbulent, with numerous ups and downs, but it still stands strong. Б. Бабиќ, *На Маргинама историје манастира Трескавца*, In *Зборник ликовне уметности*, 1 (1964); Ead., *Манастирот Трескавец со црквата Св. Успение Богородично*, In В. Мошин, *Споменици за средновековната и поновата историја на Македонија*, том IV, Скопје 1981.; Е. Димитрова, С. Коруневски и Грандаковска С. *Средновековна Македонија (Историја на уметноста, архитектура и книжевност)*, In П. Кузман, Е. Димитрова и Донеv J., *Македонија: милениумски културно-историски факти*, том 3, Скопје, 2013, pp. 1525-1803.; А. Василески, *Манастирот Трескавец со црквата Успение на Пресвета Богородица* (in print).

is linked with four other rings to form a mesh. The outer diameter of the rings is 1 cm. They are made of wire 1 mm thick with an approximately circular cross-section, with 6 mm of overlap at the ends where they are flattened (fig. 2). The wire is 2 mm wide at the hammered ends. In the centre of the broader section, the ring is perforated and a rivet is inserted; here the ring measures 2 mm. Each of the rings is identically manufactured⁴.

Samples of the mail armour underwent four types of analyses: a) SEM (Scanning Electron Microscopy); b) metallographic; c) EDX (Scanning Electron Microscopy [SEM] with Energy Dispersive X-Ray Analysis)⁵ and d) XRF analysis (X Ray)⁶.

The analyses showed that the material used for the rings is iron (Fe) with traces of Si, Mg, Ca, S, Al, K and Cl (T.1), while the metallographic analysis showed that the wire used for each ring was drawn⁷ (fig. 3).

The Emergence of Mail Armour

Mail has a long history of usage, the oldest item coming from Hjortspring, Denmark⁸, deposited in the second half of 4 century BC⁹. Several other mail fragments, dating from the Iron Age, have been found at archaeological sites across Europe, such as: Colchester¹⁰ and Kirkburn in Great Britain¹¹, Horný Jatov in Slovakia, Ciumești in

⁴ Researchers have discussed at length the techniques and methods of manufacturing mail armour. For more details see: M. Burgess, *The mail-maker's technique*, In *The Antiquaries Journal*, vol. XXXIII (1953), pp.48-55.; ead. *Further research into the construction of mail garments*, in *Antiquaries Journal*, vol. XXXIII (1953), pp. 193-202.; ead. *The mail shirt from Sinigaglia*, In *Antiquaries Journal* vol. XXXVII, No. 3-4 (1957), pp. 199-205.; ead. *A reply to Cyril Stanley Smith on mail making method*, In *Technology and Culture* (1960), pp. 151-155.; A. J. Arkell, *The making of mail at Omdurman*, In *Kush*, vol. IV (1956), pp. 83-85.; C. S. Smith, *Methods of making chain mail (14th to 18th centuries): A metallographic note*, In *Technology and Culture* (1960), pp. 60-66.; D. Sim, *Roman chain-mail: Experiments to reproduce the techniques of manufacture*, In *Britania*, vol. XXVIII (1997), pp. 359-372.; A. Jouttijärvi, *Fremstilling af ringbrynjer/The manufacture of chain-mail*, In H. Lyngstrøm (ed.), *Early Iron: Netværk for tidlig jernteknologi*, København 1996, pp. 53-60.; S. A. O'Connor, *Technology and dating of the mail*, In Dominic Tweddle (ed), *The Archaeology of York 17/8: The Anglian helmet from Coppergate*, York 1992, pp. 1057-1081.

⁵ The SEM, EDX and the metallographic analyses were carried out at Department of Non-Ferrous Metals and Waste Treatment, Technical University of Kosice, Faculty of Metallurgy.

⁶ The XRF analysis was made in the Central chemistry laboratory of the National Conservation Centre-Skopje, with the following instruments: a) XRF MIDEX Spectrometer, Spectro 10009264, b) AMETEK XRF tube, Mo – anode material, 50keV energy, c) Direct excitation with Ti and Ta filters and d) Detector VirtusM 2mm, SiLi.

⁷ The analyses will be published in detail in a separate paper at a later date.

⁸ I. M. Stead, *Iron Age cemeteries in East Yorkshire*, In *Archaeological report*, 22, (1991), pp. 54-56. According to R. Robinson, mail dating from 5 century BC was found in Zharkova, near Kiev. H. R. Robinson, *Oriental Armour*, Mineola, New York, 1967 (re-print 1995), pp 10.

⁹ J. W. Eadie, *The development of Roman mailed cavalry*, In *The Journal of Roman Studies*, vol. 57, No. 1/2 (1967), pp. 161-173.; A. D. H. Bivar, *Cavalry equipments and tactics on the Euphrates frontier*, In *Dumbarton Oaks Papers*, vol. 26 (1972), pp. 271-291.

¹⁰ J. Foster, *The Lexden Tumulus, A re-appraisal of an Iron Age burial from Colchester, Essex*, In *Bar British Series*, 156, (1986), pp. 82-85.

¹¹ Stead, *Iron Age*, pp. 56.

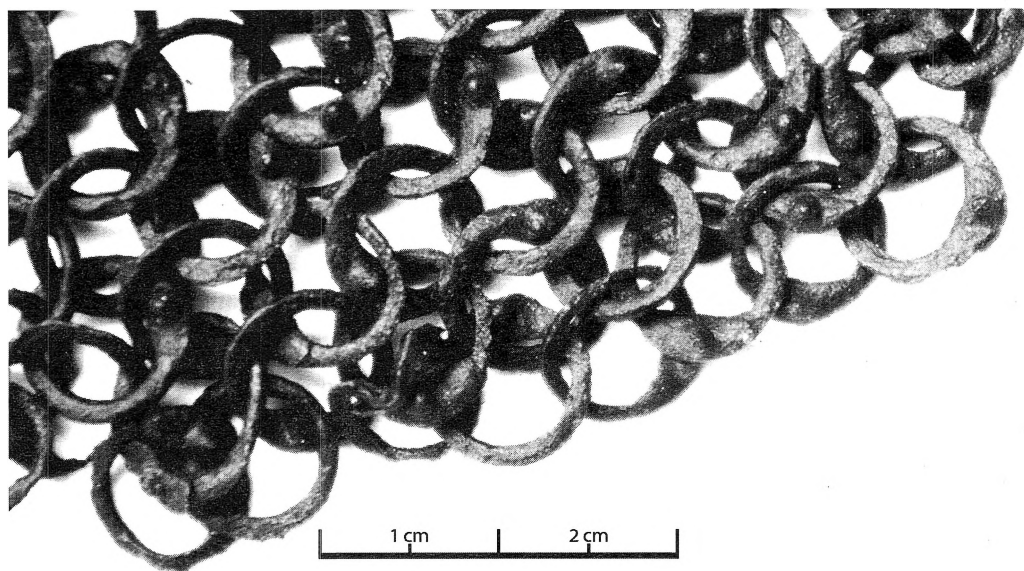


Fig. 2 Detail of the mail from the Treskavec monastery

Romania, and others¹². This type of armour was first mentioned in written sources by Polybius in 3 century BC, who noted that at the time mail was used by the wealthier army members¹³. Its flexibility, light weight, the ease of storage and maintenance were crucial for its rise as one of the longest serving and most frequently used armours¹⁴.

The stone sculpture found in Vachères in southern France, dating from 1 century BC or 1 century AD¹⁵, clearly depicts a warrior wearing knee-length mail. Deducing from the torc the warrior wears, it is most probably a Celtic warrior, a notion also supported by the work of the Roman writer Varro, *De Lingua Latina*¹⁶, written in the middle of 1 century BC. Writing about the origin of Latin words, the author notes that the Romans have taken this type of amour from the Celts¹⁷. This explicitly points to the

¹² W. A. B. van der Sander, *Fragments of a Lorica Hamate from a Barrow at Fluitenberg, Netherlands*, In *JRMES* 4, (1993), pp. 1-8. With quotes.

¹³ Polibius VI.23.15. The manufacture of mail requires lots of time and iron resources. After its emergence, the craftsmen who manufactured it were quite rare, because they had to possess various skills, most importantly wire drawing and linking the ring ends with rivets, an extremely time-consuming operation. From the 2 century onwards mail was made on a greater scale, thus becoming more accessible and widespread in the army. A. D. H. Bivar, *Cavalry Equipments and Tactics on the Euphrates Frontier*, In *Dumbarton Oaks Papers*, vol. 26 (1972), pp. 276.

¹⁴ The army favoured mail because of its light weight, mobility and air circulation it provided in the summer, i.e. during military campaigns. It was easily carried in bags during marches.

¹⁵ Judging by the manufacturing style, it has Roman origins, but the depicted warrior with torc suggests that the warrior is Celtic. Stead, *Iron Age*, pp. 56.; B. Kanlif, *Rimsko Carstvo, narodi i civilizacija*, Beograd 1980, pp. 180.; M. Garašanin, *Naoružanja i oprema keltskog ratnika*, In *Vesnik : Vojni Muzej JNA*, 7-8, (1963), pp. 52-54.

¹⁶ Varro, *De Lingua Latina*, v, 116.

¹⁷ I. M. Stead, *Iron Age*, 56.

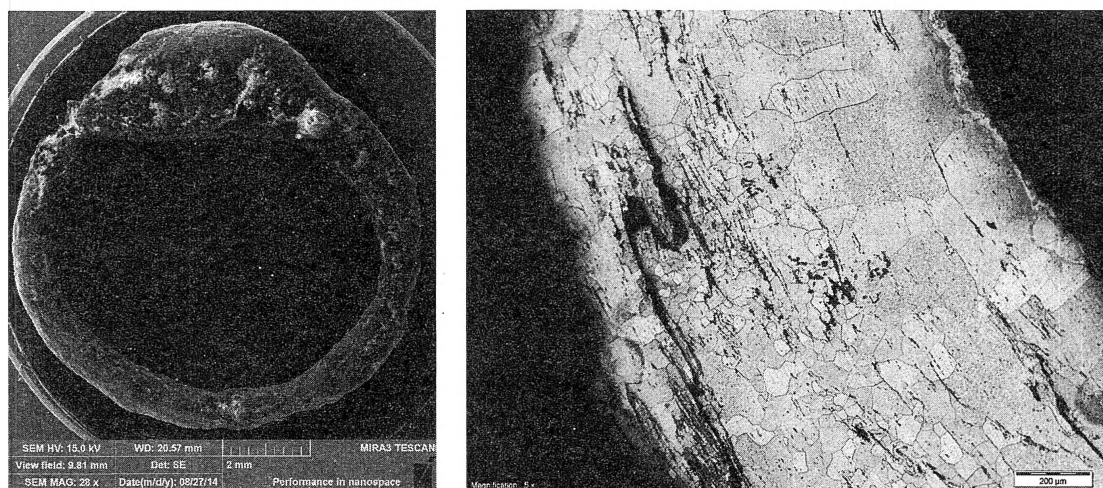


Fig. 3 Sample of the mail underwent SEM analysis (left) and Metallographic analysis (right)

pre-Roman origins of mail, but later finds as well as pictorial depictions on sculptures and reliefs show that its use was widespread in the Roman army¹⁸.

From the moment it arrived on the historical stage, it remained in use until the beginning of the 20 century¹⁹. Scholars have argued at length with regards to its utilization in the Byzantine army before its first contact with the crusaders. The studies into the modest material remains, compared with contemporary and later pictorial and written sources, give us the right to discard the possibility for a hiatus in the continuous use of this type of equipment in the Byzantine army.

Mail in the Early and Middle Byzantine Period

There is no clear idea of the use of mail in the early and middle Byzantine period. Historical sources are unclear and there are practically no pictorial sources²⁰. As a

¹⁸ In the Roman period this type of defensive weapon was called *Lorica Hamata*. *Lorica Hamata* was worn during the entire Roman period by legionaries and auxiliary soldiers, both in the infantry and the cavalry. D. Sim, *Roman Chain-Mail*, pp. 359-372, (reprint); J. W. Eadie, *The Development of Roman Mailed Cavalry*, In *The Journal of Roman Studies*, vol. 57, No. 1/2 (1967), pp. 161-173.; Bivar, *Cavalry*, pp. 271-291. Regarding the territory of the Republic of Macedonia, I am familiar with two items of mail armour dating from the 6 century. The first item is a relatively small fragment found at the archaeological site of Markovi Kuli, Vodno, housed in the Museum of the City of Skopje (unpublished). I would like to thank my colleague, Kiro Ristov, MA, custodian-advisor in the Museum of the City of Skopje, for the information. The second item comes from the archaeological site of Stobi, dating from the 6 Century (unpublished). This find was exhibited at the annual archaeological exhibition in 2009 in PI Museums of Macedonia.

¹⁹ A. J. Arkell, *Omdurman*, pp. 83-85.

²⁰ M. Markovic is looking for the reasons for the absence of mail in the pictorial depictions from this period in the possible association of mail with the lower ranks of the Roman army, thus regarded as unworthy for the warrior saints. M. Марковић, *О иконографији светих ратника у источно-хришћанској уметности и о представама ових светитеља у Дечанима*, In *Зидно сликарство манастира Дечана*, Београд 1995, pp. 597-598. However, the examples from Starozagorsko and the

result, it is believed that mail was out of use in this period and was reintroduced later, after the contact with crusaders, as part of the Byzantine army equipment²¹. This cannot be accepted as the absolute truth, as many historians suggest, although it is supported with the modest archaeological material found. Military manuals from the early and middle Byzantine period contain various names for this part of the warrior defensive equipment. They change over time and can be found as: ζάβα, λωρικιον, τώραζ, λωρίκα, ἄλυσιδωτά, λорίκαψιλὰ, δελαδε and κοινὰ. These terms, however, did not always denote the same type of equipment, which creates confusion in terms of their concrete meaning²².

The depictions of weapons in the Byzantine cultural circle are usually linked with depictions of warrior saints and the narrative scenes in monumental paintings. In the period between 726 and 843, i.e. at the time of Byzantine iconoclasm, when pictorial depictions with Christian content are absent, there are no pictorial depictions of weapons. After the cult to icons returned, they regained popularity after a lengthy period. In the 10 and 11 centuries they are still quite rare, and we learn about the weapons of the Byzantine army and other peoples only from military manuals and miniatures. The warrior saints gained in popularity at the time of the Komnenos, a period when the respect for the warrior saints resembled a national cult²³. Their depictions after the iconoclasm period tend to copy the same images from the preceding period. The Christian warrior saints' appearance did not have many similarities with the contemporary Byzantine environment, copying the uniforms from the time of the Roman empire, as well as the weapons (spear, sword, shield).

After the iconoclasm period, mail is conspicuously absent from pictorial monumental depictions until the 12 century. It is assumed that this was due to the influence of the tendencies in painting after iconoclasm, as well as the manner in which this armour was worn. The tendencies to copy the appearance of the Roman emperors did not allow for contemporary representation of the weapons and the equipment that were painted as attributes of the warrior saints. The situation persisted until the 12 century, resulting in a total absence of depictions of mail in Byzantine monumental painting.

Ivion monastery testify to the opposite. These items are made of brass with silver-plated and gold-plated rings, respectively, indicating they were meant for the higher-ranking soldiers.

²¹ P. Grotowski, *Arms and Armour of the Warrior Saints: Tradition and Innovation in Byzantine Iconography (843-1261)*, Leiden, Boston, Brill, 2010: pp. 161. The author finds confirmation for his assumption in the absence of pictorial depictions in this period and their re-emergence in 13 century. The same author justifies the absence of mail with its possible unpopularity among the members of the imperial army, as the use of mail in that same period is mentioned in historical sources. Ibid. pp. 157.

²² For more details regarding the terms for armour and weapons in Byzantium in general, see: Т. Колиас. *Византийски оръжия: принос към византийското оръжейно изкуство: (от неговото начало / края на IV в. – до латинското нашествие / 1204 г.)*. Велико Търново, 2012.; J. F. Haldon, *Some Aspects of Byzantine Military Technology from the Sixth to the Tenth Century*, in *Byzantine and Modern Greek Studies* vol. 1, (1975), pp. 19, 18-19.; Grotowski, *Warrior Saints*, pp. 154-162.; *The History of Leo the Deacon: Byzantine Military Expansion in the Tenth Century*, Washington, 2005, pp. 40, note 141.

²³ Марковић, *Иконографији*, pp. 597.

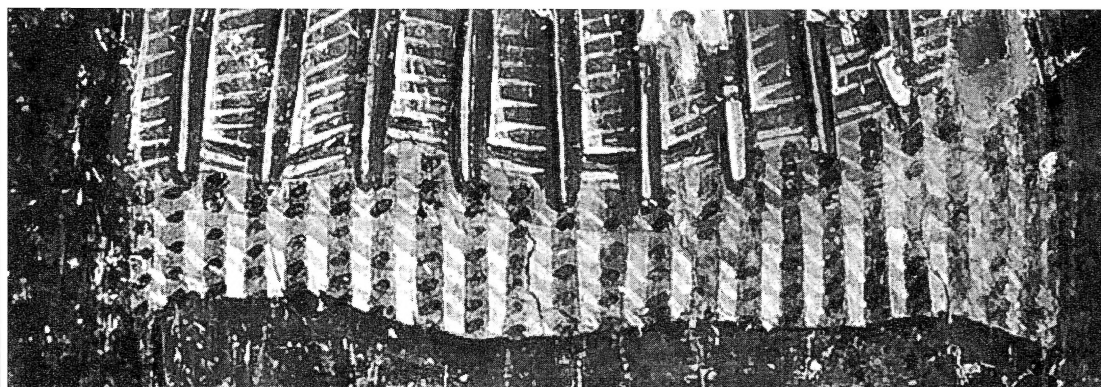


Fig. 4 Detail of mail armour from the depiction of St. Theodore Tyron from St. Nikita monastery – v. Banjani

After the 12 century, the so-called neo-classical style in the depiction of warrior saints was gradually abandoned²⁴, which in turn meant that mail became an integral part of numerous depictions of warrior saints and narrative scenes, discussed further in the text. Another possible reason for the absence of pictorial depictions of this type of equipment can be sought in the changes in the manner it was worn. Namely, in the numerous depictions of warrior saints equipped with mail, dating from the 13 and 14 centuries, it is noticeable that it was usually worn under clothes made of cloth²⁵ or another type of armour. This novelty might have influenced the perception of the painters from this period, who completely dispensed with the hidden armour from their artistic repertory.

Contrary to pictorial depictions, movable archaeological material provides us with information about the use of this type of defensive equipment in the Byzantine army. Although scant, the findings at Starozagorsko²⁶, Strimen²⁷, the Ivron monastery²⁸

²⁴ *Ibid.*, pp. 598.

²⁵ Historical sources reveal that mail was often worn together with a cloak that protected the armour from rain, damp, cold, etc., while on sunny days it protected the metal from overheating. The cloaks were broad, especially those made for the cavalry, and were used for covering both warrior and weapons, while the broad cloaks also provided freedom of movement and handling weapons. They were made of tanned or untanned leather, cotton and hemp. The way they were made also provided additional protection by absorbing the strikes of different weapons. For more details see T. Kolias with references: T. Г.Колиас, *Византийски оръжия*, pp. 64-67; Haldon, *Military Technology*, pp. 19, 36, 37. J. Haldon, *Warfare, State and Society in the Byzantine world: 564-1204*, London, 1999, pp. 128, 129.

²⁶ In older publications this item is mentioned as a find from Sofia, however in the latest publication published on the occasion of the 1000th anniversary of the death of Tsar Samuil, the authors make a correction and note that the same item is, in fact, from the area of the village of Mihailovo, municipality of Stara Zagora. Compare with: G. Grozdanova et al., *Appendix*, In L. Vagalinski (ed.) *Tsar Samuil (1014): In battle for Bulgaria*, Sofia, 2014, pp. 133-135, cat. no. 36.

²⁷ U. Dymaczewska, A. Dymaczewski and Hilczzerovna Z., *Wyniki Badan Wykopalskowych na grodzisku w Strymen : Okrog Ruse (Bulgaria)*, In *Slavia Antiqua*, XIII, (1956), pp.43-58.

²⁸ R. D'Amato, *Byzantine Imperial Guardsman 925-1025: The Tághmata and Imperial Guard*. Oxford, 2012, pp. 53.

and Veliki Gradac²⁹ support the theory of no discontinuity in the use of mail in the Byzantine army. The Museum of Archaeology in Sofia houses an exhibit of mail from Starozagorsko, made of silver-plated rings, dating from the 9-10 centuries. The Iviron monastery on Mount Athos possesses a mail with gold-plate traces, which the people associated with Leo the Deacon (c. 980). Recent research shows it actually dates from the rule of Basil II³⁰. According to R. D'Amato, both finds are representative of the classic/late Roman style. Each ring has a rivet and is linked with four other rings. The rings' diameter is 8-9 mm for the piece from Starozagorsko and 10 mm for the piece from the Iviron monastery³¹. The few finds of this type of defensive equipment, as well as weapons in general, in the territories of the former Eastern Roman Empire are also largely due to the spread of Christianity. Actually, the homogenous population of Byzantium, respecting burial rites, did not lay weapons in the graves of the deceased, just personal objects³². On the other hand, the former was the established practice in Slav military burials³³.

In addition, the small number of finds in an archaeological context is most likely due to the longevity of this type of armour. The easy maintenance, i.e. repairs, which the warrior could do on his own and on the spot, to a certain extent, made its long-term use possible. Written sources tell us that in Byzantium defensive weapons were given as heirlooms. In 1325, *scouterious* Theodore Sarantenos, a rich member of the Verona gentry, left his son,

²⁹ M. Janković, *Implements and Weapons from 9th-11th Centuries found at Ključ Dunava*, In *Balkanoslavica*, 10, (1983), pp. 59-60.

³⁰ D'Amato, *Imperial Guardsmen*, pp. 54.

³¹ Ibid. pp. 55.

³² For the burial practices in the Middle Ages of the population that lived on the territory of the Republic of Macedonia, see E. Манева, *Пепелиште: средновековна некропола: локалитет Трнче Стреа*, Скопје, 2000.; Eadem. *Корешница: средновековна некропола*, Скопје, 2000.; Eadem, *Средновековен накит од Македонија*, Скопје, 1992.; E. Манева и Ананиев Ј., *Керамидарка – С. Мокрино кај Струмица: ископување 1988*, In *Macedoniae Acta Archaeologica*, 11, 1987-1989, (1990), pp. 215-226.; B. Aleksova, *Prosek-Demir Kapija: Slovenska nekropola i slovenske nekropole u Makedoniji*, Beograd; Skopje, 1966.; Л. Кепеска, *Трпчева Црква: Средновековна некропола*, Прилеп, 2010.; Л. Блажевска, *Средновековна некропола на локалитетот „Ограда“ во с. Бистренци, кај Демир Капија: истражувања 2000/2001*, In *Археологија*, бр. 2, (2005), pp. 239-253.; B. С. Јовановић, *Запажања о средновековној некрополи у Демир Капији*, In *Зборник Филозофског факултета*, X-I (1970), pp. 119-147.

³³ According to A. N. Kirpichnikov, on the territory of Russia there are 112 pieces of mail, 40 of which are complete, while the others are in fragments. All pieces date from 9 to the 13 century. A. Н. Кирпичников, *Древнерусское оружие. Выпуск 3 : доспех, комплекс боевых средств IX-XIII вв.*, Ленинград, 1971. Additionally see A. Ф. Медведев, *Оружие Новгорода Великого* In A. В. Арциховского and Колчина А. Б. (ур.), *Труды Новгородской археологической экспедиции*, том II, Москва, 1959.; Л. Нидерле, *Словенске старине*, Нови Сад, 1954, pp. 149-151.; W. Hansel, *Słowiańszczyzna wczesnośredniowieczna: zarys kultury materialnej*. Warszawa, 1987, pp. 697-732.; A. N. Kirpichnikov and L. Niderle point out that the Slavs received this type of defensive clothing from the East, from the peoples they were constantly in contact with, and then it spread towards Western Europe. However, one cannot neglect the fact that as early as the 9 century the Russians set out on expeditions towards Byzantium to conquer Constantinople, so this type of defensive clothing might not have been taken from the East, but rather from Byzantium.



Fig. 5 Detail of mail armour
from the depiction of St. George
from St. Nikolas monastery – v.
Manastir

among other things, his *lorikion*³⁴. The Bistrica and Athos manuscripts of Dušan's Code, article 48, state that "When a noble dies, his good horse and arms shall be given to the Tsar, but his great robes of pearls and golden girdle, let his son have them, and let them not be taken by the Tsar."³⁵ This is a clear testament to the long use of arms, as property of the tsar or the noblemen in charge of equipping the army³⁶.

³⁴ M. G. Parani, *Reconstructing the Reality of Images: Byzantine Material Culture and Religious Iconography (11th -15th Centuries)*, Brill, Leiden, Boston, 2003, pp. 114. For the phenomenon of lending, inheriting and gifting arms, see: T. P. Vukanović, *Oružje u srednovekovnoj Srbiji, Bosni i Dubrovniku*, In *Glasnik Muzeja Kosova i Metohije*, VII-VIII, (1962-1963), pp. 278-280.

³⁵ Д. Богдановић, *Бистрички препис и превод бистричког преписа*, In М. Беговић (гл. ур.), *Законик Цара Стефана Душана: книга II: студенички, хиландарски, ходошки и бистрички рукопис*. Београд, 1981, pp. 183.; Ђ. Krstić, *The Code of Tsar Stephan Dušan: Translated from the Serbian version of the Bistritza transcript*, In Мехмед Беговић (гл. ур.), *Законик Цара Стефана Душана: книга II: студенички, хиландарски, ходошки и бистрички рукопис*. Београд, 1981 pp. 243.; Д. Богдановић, *Атонски препис и превод атонског преписа*, In М. Беговић (гл. ур.), *Законик Цара Стефана Душана: книга I: струшки и атонски рукопис*, Београд, 1975, pp. 175.

³⁶ It is known that in the period before the 10 century, the Byzantine army was based on strategikons, each of whom received property from the state in exchange for military service. The property, as well as the weapons and the horse, were inherited by the eldest son, together with the obligation for military

Mail in the Late Byzantine Period

The 13 and 14 centuries provide a clearer picture of the use of mail, now frequently shown as equipment of the warrior saints as well as warriors in narrative scenes. Warrior saints usually wear it alongside a different type of defensive armour, or under cloth.

In attempts to discern mail in monumental paintings from the late Byzantine period, some researchers look for similarities with depictions from Western Europe, not taking into account the fact Byzantine artists created their own patterns for its depiction. M. Parani, probably on the basis of the depiction of warriors in mail on the Bayeux tapestry³⁷, wrongly identifies this type of armour in Byzantine painting³⁸, emphasizing that she cannot find a realistic depiction of this type of defensive equipment³⁹.

Mail is present in numerous depictions from the late Byzantine period in the Republic of Macedonia, as part of the equipment of warrior saints St. George (T.V.1),

service. From the late 10 century, Byzantium applied the *pronia* system, which resembled feudalism in Western Europe. Thus, the majority of the obligations for forming and equipping the army fell on proniars. Depending on the size of the property they owned, they were obliged to bring along a certain number of armed personnel to war. This type of distribution of land and the obligations for forming an army was also applied in the states that were formed on Byzantine territory. An example is the Serbian medieval state, but in this case the weapons and the horse belonged to the ruler. For more on stratotic property and pronia, see Острогорски, *Пронија: прилог историји феудализма у византији и у јужнословенским земљама*, Београд, 1951.; ead. *О византијском феудализму*, Београд, 1969.; J. Haldon, *Military Lands, and the status of Soldiers: Current problems and interpretations*, In *Dumbarton Oaks Papers*, Vol. 47 (1993), pp. 1-67.; M. C. Bartusis, *Serbian Pronia and Pronia in Serbia: The diffusion of an institution*, In *Recueil des travaux de l'Institut d'études byzantines*, XLVIII (2001), pp. 178-216.; К. Јиричек, *Историја срба, друга књига*, Београд 1990, pp. 104-117.

³⁷ Although for quite some time there have been opinions in literature that the horsemen on the Bayeux tapestry are outfitted with hauberks, this might be an example of splint armour or a type of scale armour. The depiction of warriors carrying their weapons hung on a stick clearly shows that parts of the armours are made of rhomboid plates which are not linked, while other parts are made of overlapping square plates. In the depictions where warriors wear such armour, some also have rhomboid or square plates, while a different group of warriors have armours of amorphous plates, which only appear to be circular in shape, however in no way do they form or look like mail as depicted in earlier or later depictions. S. Bertrand, *La tapisserie de Bayeux: et le manière de vivre au onzième siècle*, Bayeux, 1966, fig. 37, 38, 43-50, 76, 77, 88-91, 101, 103-143.

³⁸ Parani, *Reconstructing*, pp. 109-110., assigns mail to the following depictions: St. Theodore Tyron and St. George in the monastery of St. Panteleimon in Nerezi, St. George in the church of St. Anargyroi, Kastoria and the depiction of St. George in St. Nicholas Kasnitzes, Kastoria. Grotowski, *Warrior Saints*, pp. 161, note 142.; Г. В. Баранов, *Три вида лорикта Константина Багрянородного и доспехи святых воинов на стеатитовых иконах из раскопок средневекового Херсонеса (К постановке вопроса)*, In *Материалы по Археологии и Истории Античного и Средневекового Крыма*, выпуск II, Севастополь; Тюмень, (2010), pp. 199-202.; Д. Ѓорѓиевски, *Средновековна дефанзивна облека: прилог кон проучувањето*, In *Патримониум.мк*, год. 6, бр. 11 (2013), pp. 136-137., rightly notes that these images do not depict mail. These examples show that an attempt was made to depict a different type of armour made of small metal pieces-*pholids*, which often overlap, which indicates that this was scale armour.

³⁹ Parani, *Reconstructing*, pp. 114. identifying scale armour as mail and looking for depictions similar to those in Western Europe, says that although this type of armour was widely used in Europe, she did not succeed in finding a realistic depiction of mail in late Byzantine monumental painting.

monastery of St. Nicholas in the village of Manastir – Mariovo (1271), St. Theodore Tyron (T.III.1) and a warrior from the composition “Myrrhbearers at the Tomb of Christ” (T.VI.1) from the church of St. Nicholas in Varos (1298/9), St. Mercurius (T.V.2) and a warrior from the composition “Angel on the Tomb” from the church of Holy Mary Perybleptos (1295), St. Mercurius and St. George from the eponymous church in the village of Staro Nagorichani (1317), St. George (T.IV.1), St. Theodore (T.III.2) and St. Nikita (T.II.1) from the eponymous monastery in the village of Banjani (after 1321), St. Artemius (T.IV.2), and a warrior from the composition “Myrrhbearers at the Tomb of Christ” (T.VI.2), and a warrior from the composition “The Mocking of the Christ” (T.VI.3) in the church of St. Archangel Michael Gabriel in Lesnovo (1341) St. George⁴⁰ (T.II.2) from the church of St. Andrew, Matka (1388/89) and.

In monumental paintings from the late Byzantine period on the territory of the Republic of Macedonia, mail is quite varied and can be found in different variants and fashions of wear. Ten of the fourteen depictions of mail are images of warrior saints, while four depictions are found as part of narrative scenes. In all ten depictions as part of warrior saints’ equipment, mail is presented as an integral part of pieces of clothing or armour, while in the narrative scenes it is worn on its own or over another type of armour. Five types of mail can be seen in these depictions: a) tunic with elbow-length sleeves (T.II.1,2), b) sleeveless tunic (T.III.1,2), c) sown on a garment as a tunic, with buttons on the right shoulder (T.IV.1,2), d) sown on a garment as a tunic, with buttons on the chest, and (T.V.1,2) e) mail as a sleeveless tunic (T.VI.1-3), worn over clothes or armour (all of the above are worn under clothes or armour). All examples depict mail almost identically, and although the images are quite stylized, they manage to successfully capture its look. All pieces depict it with approximately the same colours, using shades of gray and white. Playing with nuances, painters form fields that resemble a herringbone pattern, and these fields vary in size depending on the length of the motif (fig.4). Only the depiction of St. Demetrios in the monastery of St. Nicholas in the village of Manastir, Mariovo, breaks this pattern. The depiction here consists of two elongated fields, one in white, the other in green. The two fields are parallel to each other, with semicircular lines in gray drawn above, as if to imitate the rings (fig.5).

In all depictions where it is worn under clothing, the tunic-like mail reaches below the hips, while in the pieces where it is worn as a vest or independently it is waist-long. One can notice that warriors wore girdles on the independently worn armours. In the examples where armour is worn under clothing, it can be seen only in the region of the hips, the sleeves or under the collar. The same method of wearing mail is noticed on

⁴⁰ Гавро Шкриваниќ. *Оружје у средновековној Србији, Босни и Дубровнику*. Београд, 1957, pp. 142-144. In addition to this church, he correctly identifies mail in the depiction of St. Nestor in Bela Crkva-Karanska, on two soldiers from the composition The Road to Golgotha by Matejic, on the depiction of St. Procopius by Kalenic and in a depiction in the church in Staro Nagoricani. He also lists the depictions of St. Theodore Tyron and St. Theodore Stratelates, which obviously represent a different type of armour.

Orlando's Column in Dubrovnik (1418), where mail is worn under chest armour and spaulders⁴¹.

Museums across the Balkan Peninsula house large numbers of mail armour dating from the 13 to early 15 century⁴². The archives in Dubrovnik provide us with information on how the military centres in these areas received their supplies. Data about the procurement of defensive armour is most numerous regarding the medieval Serbian state, with notes on the procurement of mail as well as mail with protective headgear from Venice and Dubrovnik on several occasions⁴³. It should be taken into account that weapons were only partially imported, as the need for weapons was mostly met with domestic production. There is no solid data of such activities on the territory of Macedonia, however the preserved toponyms suggest such a possibility. Many toponyms are in fact names suggesting that the villages were specialized or partly specialized, where a large section of the population was dedicated to the blacksmith craft or other specialized smithy crafts⁴⁴. A large number of toponyms suggest that there were specialized weaponry workshops⁴⁵, including the name of the village of *Brnjarci*, near Skopje⁴⁶. This term derives from the Old Church Slavonic word denoting mail,

⁴¹ Đ. Petrović. *Magister Johannes – Zane oklopar dubrovačke republike (1433-1456)*, In *Vesnik: Vojni Muzej-Beograd*, br. 18, (1972), pp. 79, Sl. 5.

⁴² In my correspondence with my colleagues from Serbia and Bosnia and Herzegovina, they underlined that many of the museums in the two countries house fragmented mail armour, but the majority of them are not published. Д. Миловановић. *Ризнице Манастира Хиландара: студијска колекција I*, 2008, pp. 161, cat. no. 79. In the Hilandar monastery on Mount Athos there is mail from the 14 century, which most probably belonged to one of the monks or was given as a relic.; *Oružje kroz vjekove*, Sarajevo, 1988, pp. 27., kat No. 144.; V. Ćurčić, *Starinsko oružje u Bosni i Hercegovini* In *Glasnik Hrvatskog Državnog Muzeja u Sarajevu*, LV, (1943), pp. 133-139.; M. Šercer, *Zbirka Oružja Milana pl. Plaunspbergera u Hrvatskome Povijesnome Muzeju*, In *Muzeologija*, 32 (1995), pp. 57-72.; С. Димитров, *Плетени ризници от Експозицията на археологически музей – Велико Търново*, In *Известия*, XXIII (2008), pp. 145-156.

⁴³ Ђ. Петровић, *Оружје*, In *Историја примењене уметности код срба: I том: Средновековна Србија*. Београд, 1977, pp. 124-126. In the period between 1332 and 1349, with the approval of the Venetian government, 500 mail armours, mail armours with protective headgear, etc., were brought into Serbia. Sources mention the request by Stefan of Dečani (1323) to Dubrovnik for the procurement of 200 mail armours.

⁴⁴ Some of the general blacksmith toponyms are Kovač, Klepač, Sasa, while Samokov is a toponym that derives from the name of the mechanical tool used by craftsmen.

⁴⁵ Toponyms that suggest there were specialized weaponry workshops are Sekirani, Sekirnik, Sekirci, Strelci. А. Фостиков. *Ковачки занат на тлу средновековне Србија*, In *Београдски Историски Гласник*, III, (2012), pp. 117-121.

⁴⁶ М. Панов. *Енциклопедија на селата во Република Македонија*, Скопје, 1998, pp. 40.; The name of the village can be traced back to the 15 century, where in the comprehensive Turkish Defter it is mentioned under the name of *Brnarce*. It is also mentioned that the village was abandoned. М. Соколки и Стојановски А. (ур.), *Турски документи за историјата на македонскиот народ: Опишен пописан дефтер № 4 (1467-1468)*, Скопје, 1971, pp. 448. The village is no longer mentioned in the defterler from 1568-69. During the most recent archaeological field surveys at the Kale site in Brnjarci, movable material was uncovered that suggests that people lived here from the 3 century BC to the 14 century, with especially strong proof of life for the period between 11 and 14 centuries. I would

брѣна⁴⁷. The specific manufacture of this type of mail makes it highly unlikely that it referred to an armour workshop, but it is quite probable that this was a place where they were repaired.

* * *

The mail armour, which is the subject of this paper, was found deposited in the Treskavec monastery. There is no precise information on the conditions of its finding or whether there was any other, chronologically relevant material. Mail in itself offers very little data on the chronology, mostly because its manufacture remained unchanged for centuries. In this case, it is certain that the end of the 13 or the beginning of the 14 century is the *terminus post quem* of depositing the armour. It is highly likely that it was used for a long time before being deposited.

This is not the only example of a deposited mail armour or other type of arms in monastery treasuries. There are other mail armours deposited in the monasteries of Iviron and Hilandar on Mount Athos. In our case, there are several theories about how it found its way there: left as a relic to the faithful, left by a warrior who became a monk or a military chief⁴⁸, or perhaps the armour was part of the military equipment belonging to the crew in charge of defending the monastic complex.

The number of finds of this type of armour, dating from the 9 and 10 centuries, as well as the written historical sources, suggest there was no hiatus in the use of mail. Iconoclasm, the neoclassical style in the painting tendencies and the way it was worn could be the reasons behind its absence from pictorial and sculptural depictions in Byzantium after iconoclasm up to mid-12 century. On the other hand, its absence from movable material is the result of the population's burial rites, the longevity of this type of armour and the fact it was regarded as an heirloom, which is demonstrated in historical sources.

like to thank my colleague, Vladimir Atanasov, MA, head of the project "Archaeological Cadaster of the Republic of Macedonia", for the information. The project is carried out by NI Museum of Archaeology of Macedonia and is coordinated by the Cultural Heritage Protection Office and its director, prof. Viktor Lilcic. The Dečani chrysobulls from mid-14 century mention the village of бръньць (ДХ I 174-214) or бръньць (ДХ II 39; ДХ III 1932-1953) which might derive from the word denoting mail. This village is in the vicinity of the Treskavec monastery. П. Илиќ и Грковиќ, М., *Дечанске хрисовуље*, Нови Сад 1976, ДХ I 174-214; ДХ II 39; ДХ III 1932-1953.

⁴⁷ The Serbian translation of The Story of Troy, kept in Sofia, mentions the word брънар: „многo често брънаръ крѣпѣть мою бръню“. Шкриваниќ, *Оружје*, pp. 136. Here брънар has the meaning of a craftsman who repairs бръњи – mail.

⁴⁸ Джон Хелдон. *История Византийских войн*, Москва, 2007, pp. 199-200.; P. Kostovska, *Piety and Patronage: Layman Ioannikios or Abbot Akakios and the foundation of the monastery of St. Nicholas at Manastir*, In E. López- Tello Garcia and B. S. Zorzi (ed.), *Church, Society and Monasticism: Acts of the International Symposium in Rome, May 31-June 2 2006*, Roma, 2009, pp. 494-495. They note that it was not unusual for senior military officers to become monks after their military career. They also often built monasteries to which they gifted part of their property.

The depictions in the numerous churches and monasteries from the late Byzantine period are sufficient testimony for the popularity of mail in the Byzantine army. Pictorial finds, unlike the fragmented movable finds, allow us to reconstruct and categorise this type of defensive equipment, which can be typologically divided into 5 variants.

Мрежест оклоп од Трескавец: Прилог кон проучувањето на средновековните мрежести оклопи

Резиме

Мрежестиот оклоп кој е цел на расправа во овој труд е најден, депониран во манастирот Трескавец. Нема информации за точните услови на неговото наоѓање и дали тој бил придружен со друг, хронолошки податлив материјал. Мрежестите оклопи, сами по себе, нудат многу малку податоци за хронологијата, пред сè, поради тоа што нивната изработка останала непроменета со векови. Во овој случај со сигурност може да се земе крајот на 13 или почетокот на 14 век како *terminus post quem* на депонирање на оклопот. Голема е веројатноста тој да бил користен долго време пред истиот да биде депониран.

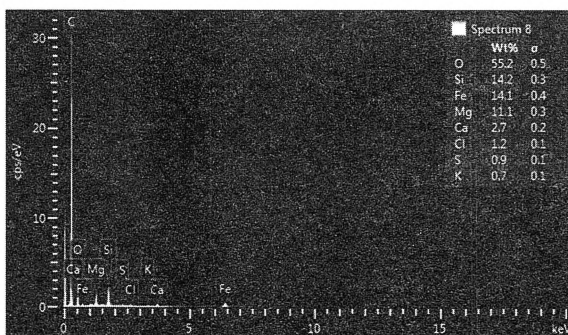
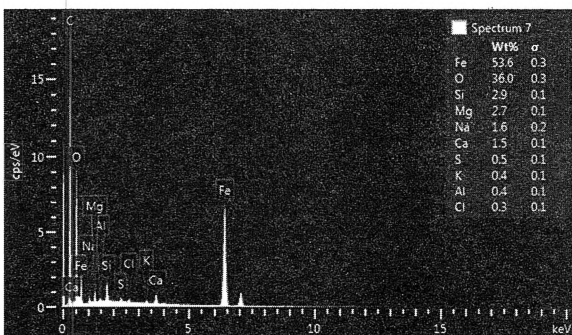
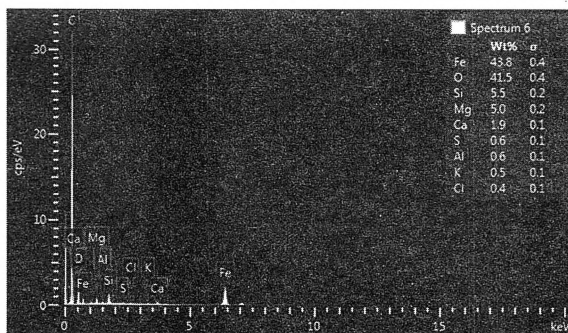
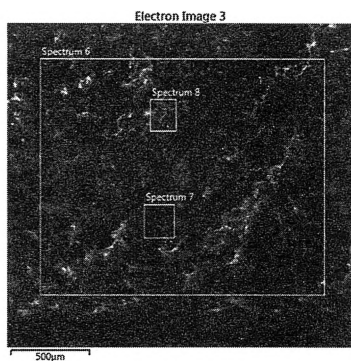
Ова не е единствен пример на депонирање на мрежест оклоп или друг вид на оружје во манастирските трезори. Во нашиот случај, постојат неколку можности кои укажуваат на тоа како тој достигнал тука: оставен како реликвија од верниците, оставен од некој замонашен воин или воен старешина⁴⁹ или, пак, оклопот бил дел од воената опрема на посадата која била задолжена за безбедноста на манастирскиот комплекс? Депонирање на мрежести оклопи се посведочени во манастирите Ивирион и Хиландер на Света Гора.

Неколките наоди на овој тип оклоп, датирани во 9 и 10 век, како и пишаните историски извори, укажуваат на непостоењето на хијатус во користењето на мрежестиот оклоп. Иконоборството, неокласичниот стил во сликарските тенденции и начинот на носење, можеби претставуваат причина за неговото отсуство од ликовните и скулптурални претстави во Византија по иконоборството, па сè до средината на 12 век. Отсуството, пак, помеѓу движниот материјал, најверојатно, се јавува како резултат на гробните практики на населението,

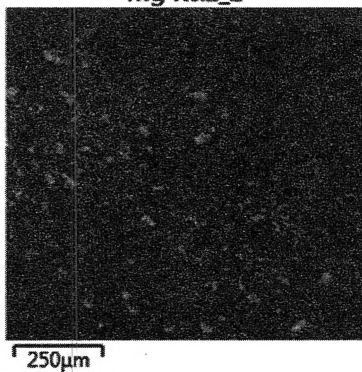
⁴⁹ Джон Хелдон. *Историја Византийских войн*, Москва, 2007, pp. 199-200.; P. Kostovska, *Piety and Patronage: Layman Ioannikios or Abbot Akakios and the foundation of the monastery of St. Nicholas at Manastir*, In E. López- Tello Garcia and B. S. Zorzi (ed.), *Church, Society and Monasticism: Acts of the International Symposium in Rome, May 31-June 2 2006*, Roma, 2009, pp. 494-495. Напоменуваат дека не ретко високите воени офицери по завршување на нивната воена кариера се замонашувале. Тие доста често граделе и манастири на коишто им даровале и дел од својот имот.

долготрајноста на овој вид на оклоп, како и неговата наследност посведочена во историските извори.

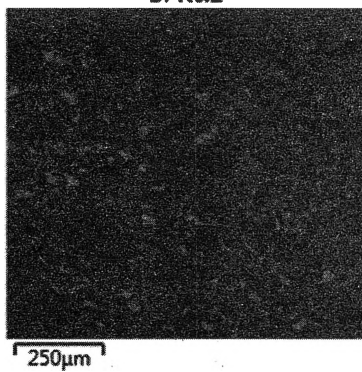
Претставите од бројните цркви и манастири од доцновизантискиот период се доволно сведоштво за неговата популарност во византиската војска. Ликовните претстави, за разлика од фрагментарно зачуваните движни наоди, ни дозволуваат да направиме реконструкција и типологија на овој вид на дефанзивна опрема, која типолошки може да се подели на 5 варијанти и тоа: а) мрежест оклоп во вид на туника со ракави до лакти, б) мрежест оклоп во вид на туника без ракави, в) мрежест оклоп зашиен на облека во вид на туника, со место на закопчување/откопчување на десното рамо, г) мрежест оклоп зашиен на облека во вид на туника со место на закопчување/откопчување на гради; сите овие се носени под облеката или оклопот, и д) мрежест оклоп во вид на туника без ракави, носен преку облека или оклоп.



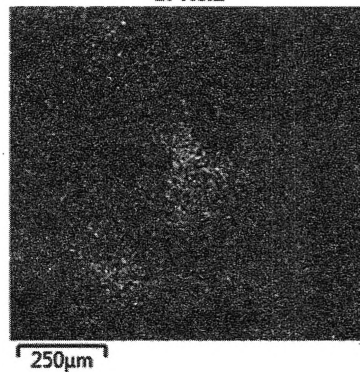
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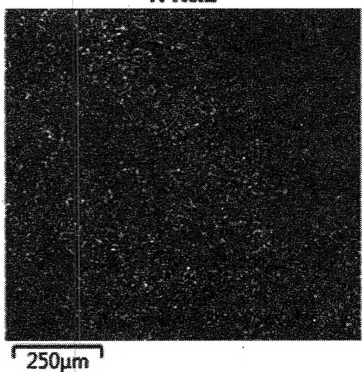
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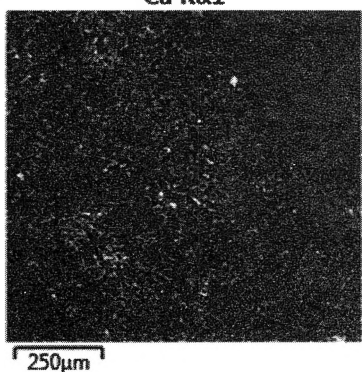
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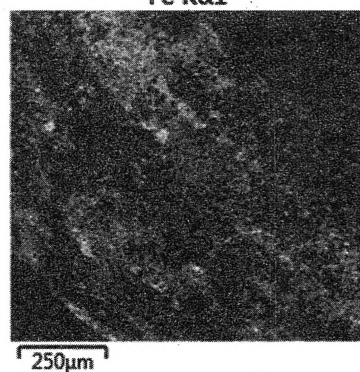
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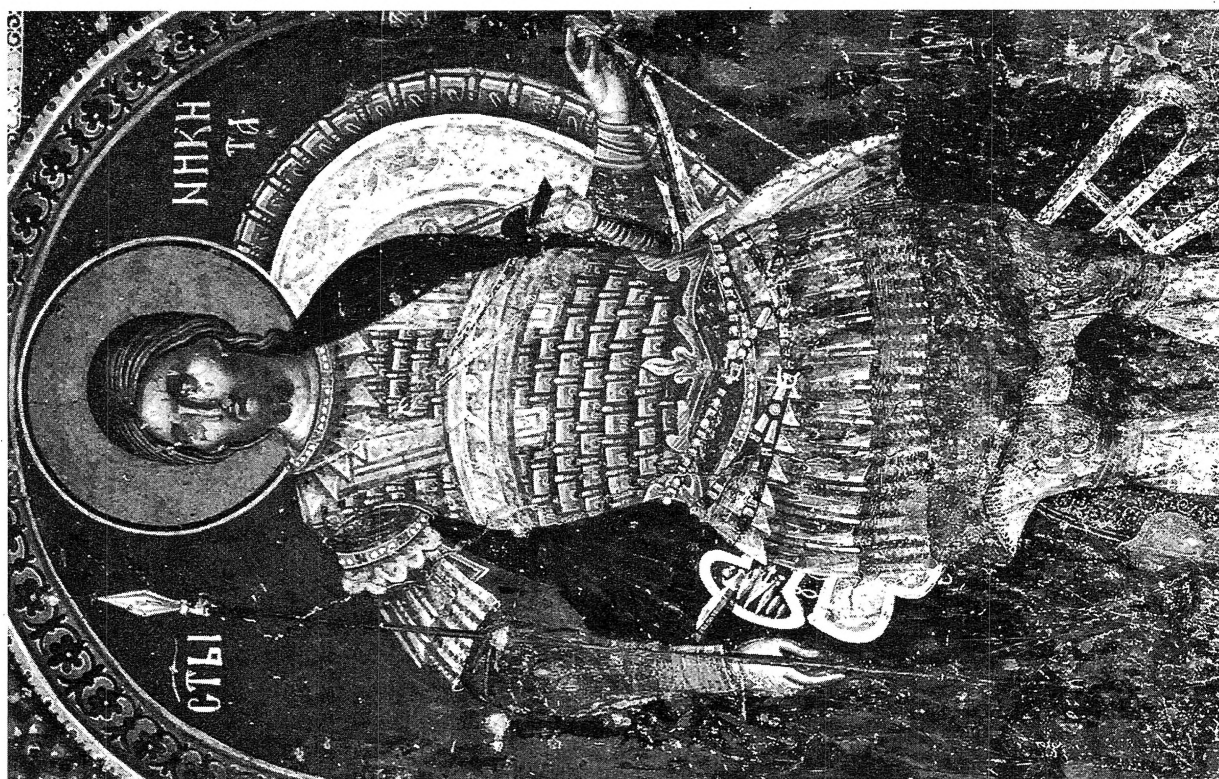
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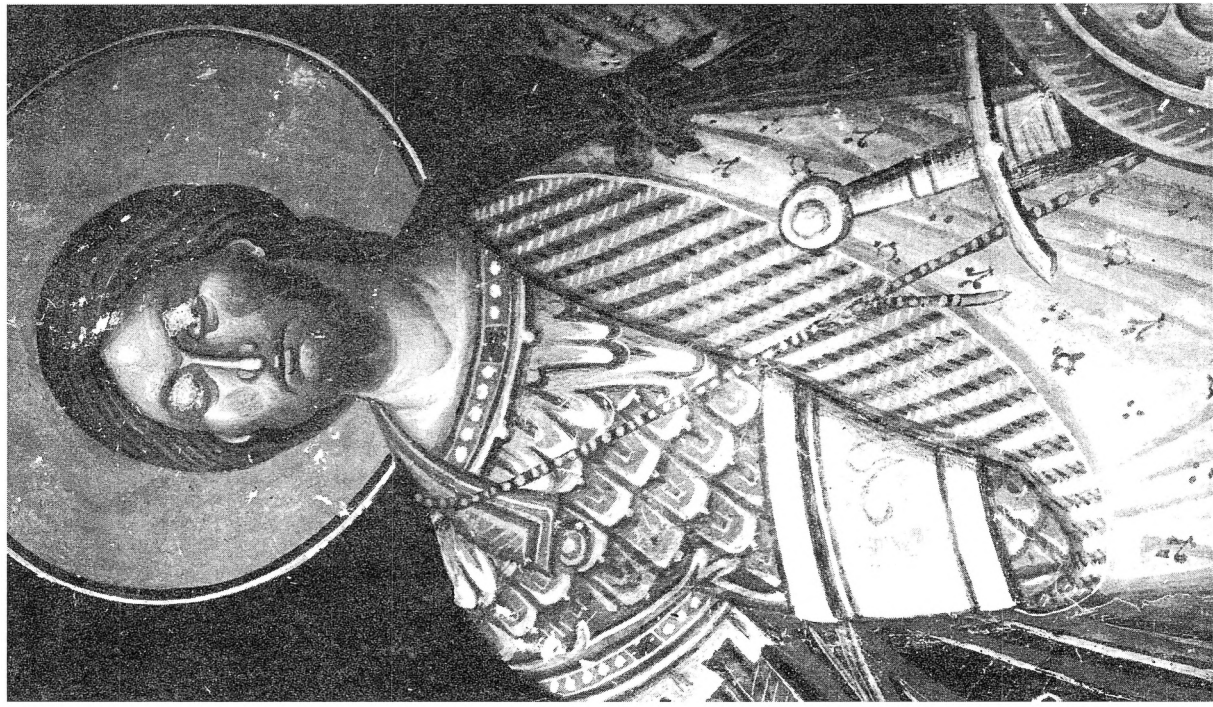
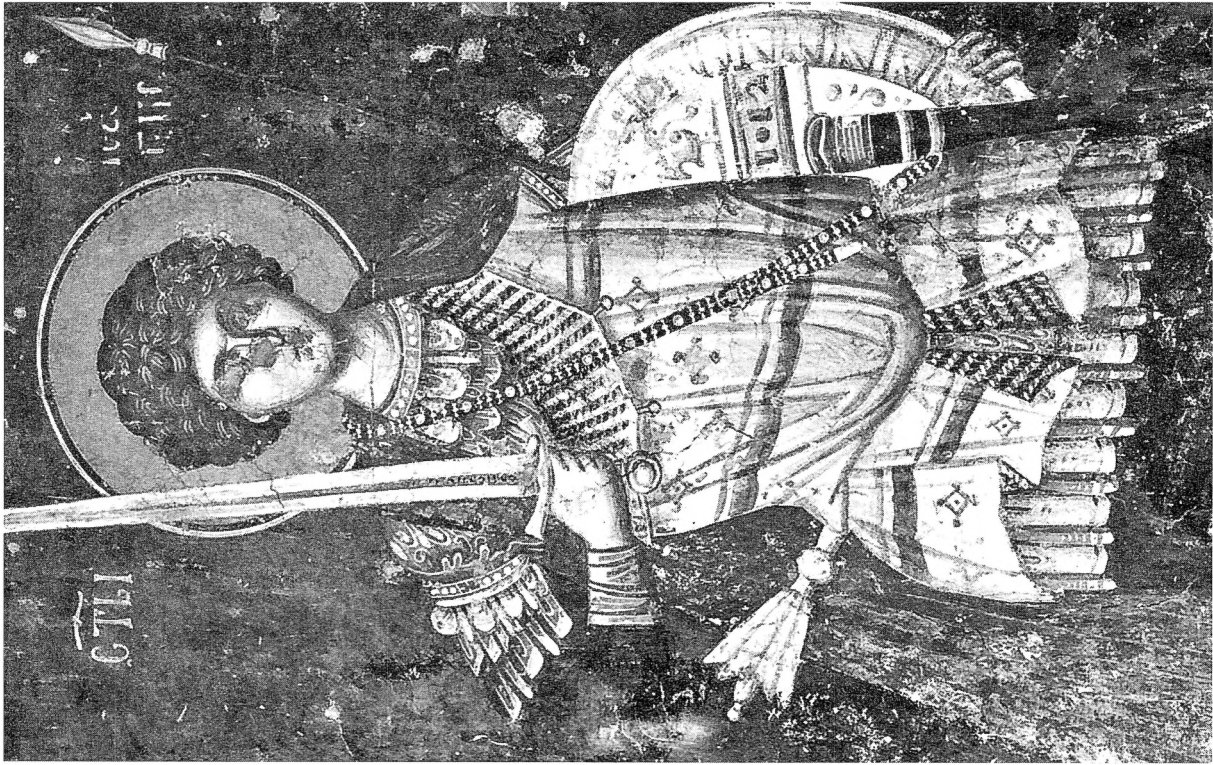


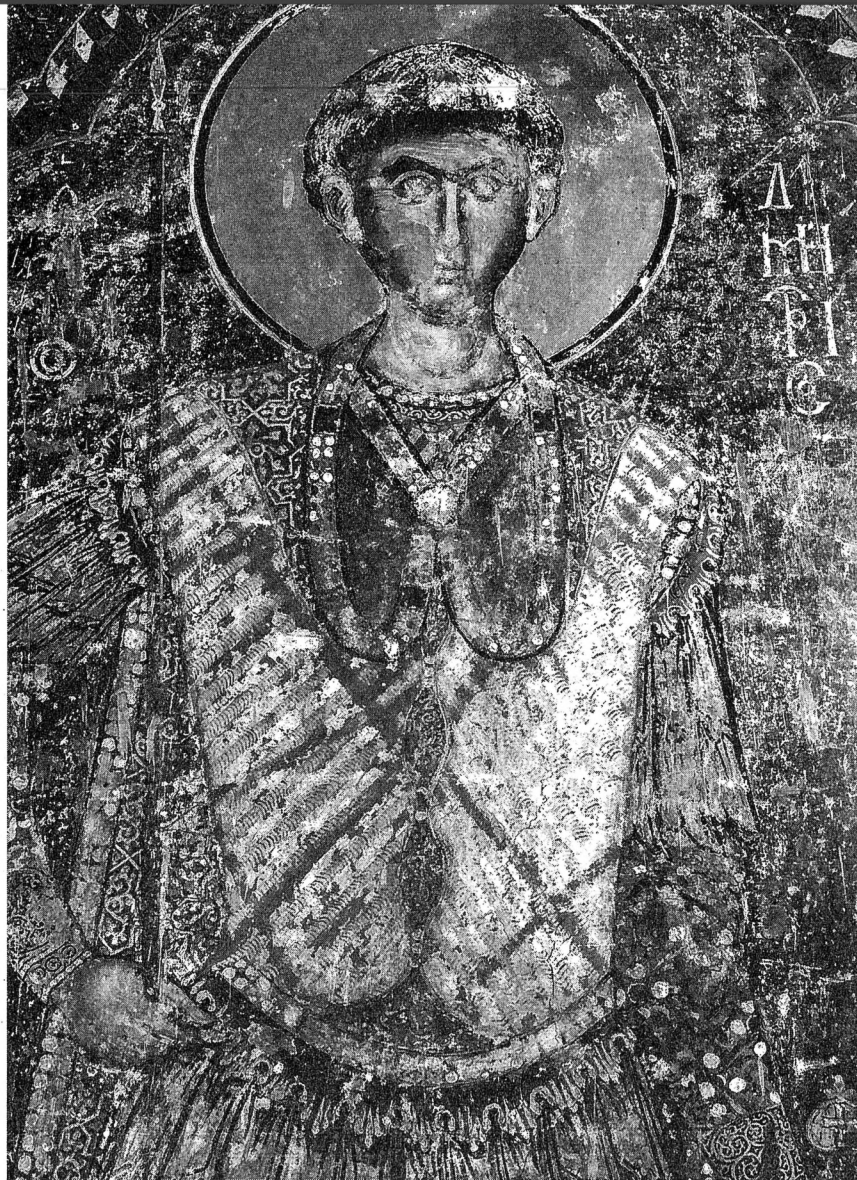
T. I – SEM Analysis of a sample of mail armour (up), EDX analysis of a sample of mail armour (down)





T. III – Depiction of saint warriors equipped with sleeveless mail tunic. St Theodore Tyron from the church of St. Nikolas in Varoš – Prilep (left) and St. Theodore from the monastery of St. Nikita in Banjani (right).





T. V – Depictions of saint warriors equipped with mail sown on a garment as a tunic, with buttons on the chest. St. George from the monastery of St. Nikolas in village of Manastir – Mariovo (left) and St. Mercurius from the church of Holy Mary Perybleptos in Ochrid (right).



T. VI – Depiction of warriors equipped with mail as a sleeveless tunic, worn over clothes or armour. Detail from the composition “Myrrhbearers at the Tomb of Christ” from the church of St. Nicholas in Varos (left), detail from the composition “Myrrhbearers at the Tomb of Christ” (center) and detail from the composition “The Mocking of the Christ” (right) in the church of St. Archangel Michael Gabriel in Lesnovo.