

KARINA GRÖMER  
Natural History Museum Vienna  
Prehistoric Department  
Burgring 7  
A – 1010 Vienna  
karina.groemer@nhm-wien.ac.at

ANITA RAPAN PAPEŠA  
Gradski muzej Vinkovci  
Trg bana Josipa Šokčevića 16  
HR – 32 100 Vinkovci  
anita@muzejvk.hr

## **Jednostavne tkanine i žigosana koža: organski nalazi s avarodobnog groblja u Nuštru (istočna Hrvatska)**

### **Simple cloth and stamped leather: organic finds from the Avar graveyard in Nuštar (Eastern Croatia)**

UDK: 904:726.821(497.5 Nuštar)''653''

Izvorni znanstveni rad/Original scientific paper

*U arheološkom kontekstu organski nalazi su prilično rijetki, posebice u umjerenim klimama. Usprkos tome, oni oblikuju važan dio načina života arheoloških populacija i mogu pružiti informacije o svakodnevnom životu, uzgoju životinja, umjetnosti, trgovini, gospodarstvu, tehnološkom razvoju itd. Jedan od načina pronalaska organskih nalaza, u ovom slučaju ostataka tkanina, slučajevi su kada se oni odupru vremenu ostajući pričvršćeni za metalne nalaze. U procesu korodiranja metal oko tekstilnih niti oblikuje produkte korozije zadržavajući tako oblik tekstila. Mali broj takvih nalaza (osam) nađen je u sedam kasnoavarodobnih grobova na lokalitetu Nuštar/Dvorac. S obzirom na druge nalaze iz tih grobova, možemo ih datirati u razdoblje između 750. i*

*Organic finds are rather rare in an archaeological context, especially in moderate climate zones. Nevertheless, they form an important part of the way of life of archaeological populations and can provide information about everyday life, farming, art, trade, economy, technological development... One way of discovering organic finds, in this case textile remains, are those cases when they withstand the test of time by remaining attached to metal finds. As part of the corrosion process, metal forms corrosion products around textile fibres, thus preserving the shape of the textile. A small number of such finds – 8 – was found in 7 Late Avar Period graves at the Nuštar/Dvorac site. According to other finds from these graves, they can be dated in period between 750 and 800 AD.*

800. godine. Metalni nalazi sa očuvanim tekstilom iz Nuštra uključuju dijelove pokojnikove odjeće (pređice, okove, spojke) i oruđa (nož). Analize tekstila pokazale su kako se radi o jednostavnim tkaninama napravljenima od jednostavnog tkanja s nitima pređenim u Z-smjeru. Analiza tkanina pokazala je kako se radi o dijelovima odjeće raznih funkcija i o mrtvačkim pokrovima. Unatoč tome što u usporedbi s ostalim avarodobnim nalazištima iz istog razdoblja nije uočeno ništa novo, ovaj je rad važan jer arheološki tekstil ima veliku vrijednost koja se može iskoristiti i u drugim znanstvenim poljima.

*Ključne riječi:* organski nalazi, avarodobni grobovi, analiza tkanine, Nuštar, rani srednji vijek

## Uvod

Istočna Hrvatska, smještena na rubu svjetova u razdoblju od prapovijesti do danas, često je mjesto nalaza predmeta koji su uobičajeni za istočnu ili zapadni kulturni krug, što se uočava i na kasnoavarodobnim nalazima koji su sami po sebi mješavina različitih utjecaja. Iako takvi nalazi imaju određen stupanj nezavisnosti i mogu se zasebno promatrati, imaju i analogije izvan područja koje su naseljavali Avari.<sup>1</sup> U posljednje je vrijeme dokazano kako veliki utjecaj na kasnoavarodobnu materijalnu kulturu (npr. nakit, skupoćeno posuđe) dolazi s područja Mediterana i Bizanta, a također su uočljive i veze s ostalim kulturama istoga razdoblja.<sup>2</sup> Jedna od mogućih ruta prenošenja ideja s istoka na zapad mogla je prolaziti i kroz istočnu Hrvatsku.

Lokacija u Nuštru odgovara hipotetskoj južnoj i jugoistočnoj granici Avarske države (kaganata) od kasnog 7. do kraja 8. stoljeća (karta 1) koja se pružala uz lijevu obalu rijeke Save.<sup>3</sup> U istraženom dijelu groblja nije potvrđena pretpostavka da je nuštarsko groblje korišteno za ukop vojne posade s granice. Vjerojatnije je da su groblje koristili stanovnici miroljubivog sela.

<sup>1</sup> Szenthe 2013, 317–318.

<sup>2</sup> Szenthe 2013a, 195.

<sup>3</sup> Filipec 2003, 126.

*Metal finds with preserved textiles from Nuštar include parts of the garments of the deceased (belt buckles, hinges, and clasps) and tools (knives). Textile analyses have revealed simple textiles made of tabby with Z-spun yarns. Analyses of these textiles have identified their function as different parts of garments and as shrouds. Compared to other contemporary Avar period sites, nothing new has been noticed, but the importance of this work lies in awareness of the great value of archaeological textiles, which can be put to use in many different fields of science.*

*Key words:* organic finds, Avar graves, textile analysis, Nuštar, Early Middle Ages

## Introduction

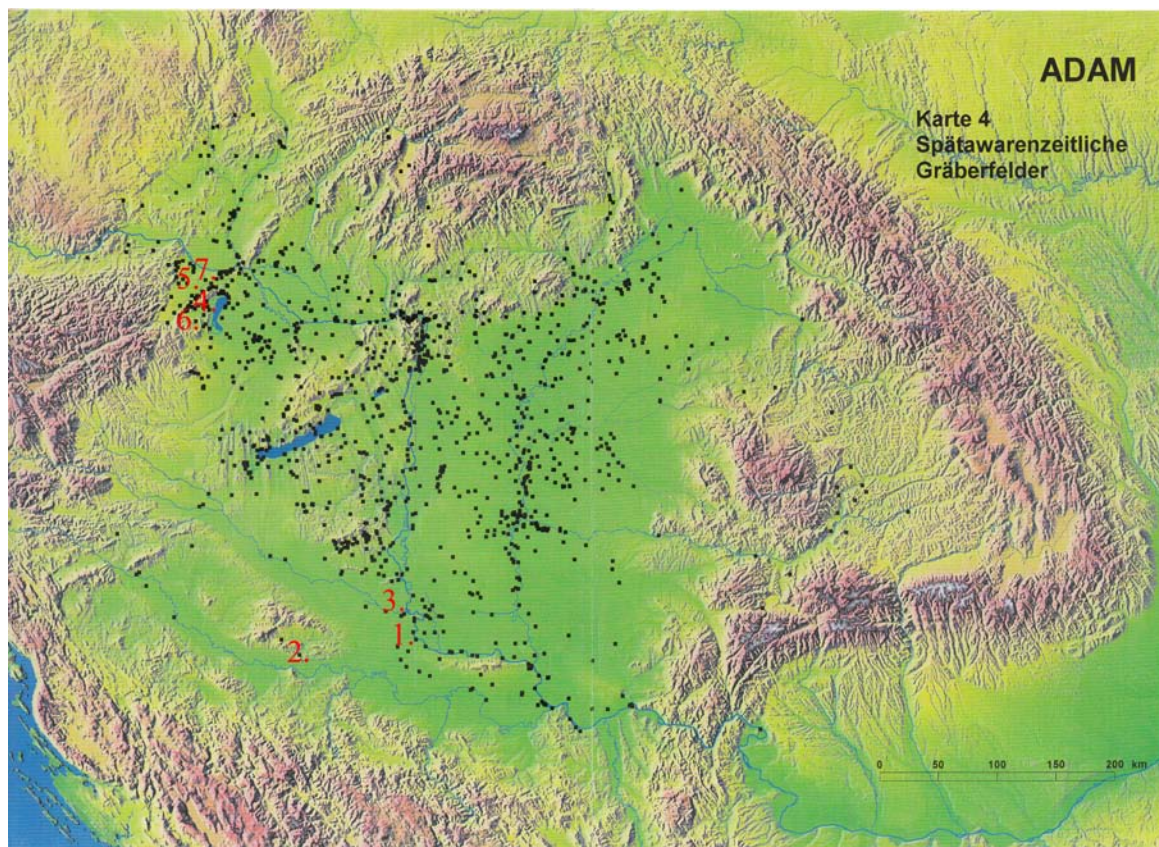
Eastern Croatia has been located at the intersection of two worlds from prehistory to modern day, and thus commonly acts as a source of finds that are typical for both the “Eastern” and “Western” cultural spheres. This can be also observed in Late Avar period artefacts, which are themselves a hint for the blending of different influences. Although such finds have some degree of independence (and can be observed as self-contained), they have analogies outside beyond the areas settled by Avar people.<sup>1</sup> Recently, it has been proven the areas of the Byzantine Empire and the Mediterranean exerted a great influence on Late Avar period material culture (e.g. jewellery, highly valuable vessels), though contact with other concurrent cultures and regions is also evident.<sup>2</sup> One of the possible routes for transmitting ideas from the east to the west could have passed through Eastern Croatia.

The location in Nuštar fits the hypothetical southern and south-eastern border of the Avar state (*Khaganate*) between the late 7<sup>th</sup> and the late 8<sup>th</sup> century AD (map 1), which stretched along the left bank of the river Sava.<sup>3</sup> The presumption that the graveyard at Nuštar site could have been used as a burial site for military personnel was not proven at the excavated area. It is more likely that the graveyard was used by inhabitants of a peaceful village.

<sup>1</sup> Szenthe 2013, 317–318.

<sup>2</sup> Szenthe 2013a, 195.

<sup>3</sup> Filipec 2003, 126.



Karta / Map 1: Kasnoavarodobna groblja / Late Avar period cemeteries: 1. Nuštar, 2. Brodski Drenovac, 3. Bijelo Brdo, 4. Sommerein, 5. Leobersdorf, 6. Frohsdorf, 7. Zwölfaxing (Szentpéteri 2002, Karte 4; prilagodila / adapted by A. Rapan Papeša, 2015.)

### Kasnoavarodobno groblje u Nuštru

Selo Nuštar nalazi se 6 km sjeverno od Vinkovaca u središtu Vukovarsko-srijemske županije. Lokalitet Dvorac nalazi se 1 km jugozapadno od centra sela na njegovu rubu. Lokalitet se ne ističe u prostoru – smješten je na lesnoj gredi koja se pruža u smjeru istok-zapad između rijeke Vuke i potoka Ervenice i sastavni je dio geološke cjeline koju čine đakovačko-vinkovački ravnjak i zapadni obronci Fruške gore.

Prvi grobovi na lokalitetu otkriveni su u siječnju 2011. godine tijekom građevinskih radova za izgradnju nogometnog stadiona. Građevinski radnici prekopali su najmanje sedam grobova. Lokalni povjerenik i suradnik muzeja o nalazima je dojavio Gradskom muzeju Vinkovci.<sup>4</sup>

<sup>4</sup> Rapan Papeša 2012, 4.

### The Late Avar Period graveyard in Nuštar

The village of Nuštar lies at a distance of 6 km north of the town of Vinkovci, in the centre of Vukovar-Srijem County. The site Dvorac (Castle) lies 1 km southwest from the centre of the village, on outskirts of the village. The site does not stand out visually; it is located on a loess ridge that stretches from east to west between the river Vuka and the stream Ervenica.

The first graves on this site came to light in January 2011, during construction works for a football field. At least seven graves were disturbed by workers on the site. The finds were reported to Vinkovci Municipal Museum by an associate of the museum.<sup>4</sup>

<sup>4</sup> Rapan Papeša 2012, 4.





Sl. / Fig. 1: Zračna slika lokaliteta nakon istraživanja / Aerial photo of the site after excavation (snimio / photo by Z. Tanocki, 2011.)

Površina koju groblje zauzima unutar građevinskog iskopa definirana je u svibnju, a istraživanja su provedena od 2. rujna do 18. listopada 2011. godine. Istraženo je približno 2/3 groblja, odnosno svi grobovi koji su bili ugroženi građevinskim radovima. Otvorena je površina od oko 140 x 100 m, ali grobovi su bili koncentrirani u jugoistočnom dijelu iskopa na površini od oko 60 x 40 m.<sup>5</sup>

Tijekom istraživanja imenovan je 201 grob, a istraženo ih je 196 (u trima se slučajevima nije radilo o grobovima, a dva su groba većim dijelom izlazila izvan iskopne površine). Nalazi su bili uglavnom u jako dobrom stanju, dok su koštani ostatci vrlo loše očuvani.

Istraženo je ukupno deset prilično regularnih ukopnih redova (sl. 1). Grobovi su orijentirani u smjeru zapad-istok. Uglavnom su pravilna oblika, a u većini su uočeni tragovi drvenih konstrukcija.<sup>6</sup> Svaki je grob u principu iskopan za jednog pokojnika, a višestrukih je ukopa svega sedam.

The area that graveyard occupies was determined in May 2011 and excavated between 2 September and 18 October 2011. About 2/3 of the graveyard has been excavated – all the graves that were endangered by construction works. The area opened measured about 140 x 100 m, but the graves were concentrated in south-east part, covering an area of approximately 60 x 40 m.<sup>5</sup>

During the excavations, 201 graves were named and 196 were excavated (3 were not graves, while 2 were largely located beyond the excavation area). The finds were found in a very good condition, but the skeletal remains were in a very poor state of preservation.

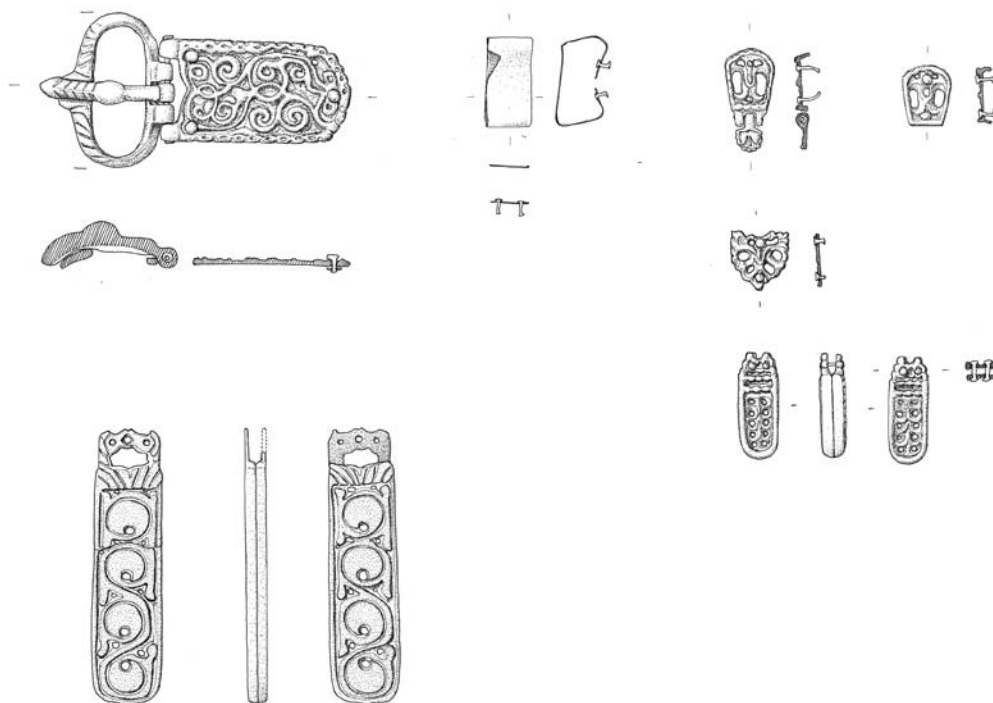
A total of 10 fairly regular burial rows have been excavated (Fig. 1). The orientation of the graves was west-east. The graves are mostly of a regular shape, and the remains of wooden structures were observed in the vast majority of graves.<sup>6</sup> Generally, each grave was dug for one deceased person, and there were only seven multiple burials.

<sup>5</sup> Rapan Papeša 2012a.

<sup>6</sup> Rapan Papeša 2013.

<sup>5</sup> Rapan Papeša 2012a.

<sup>6</sup> Rapan Papeša 2013.



Sl. / Fig. 2: Tipični nalazi iz muških grobova / Typical finds from male graves (crtež / drawing by M. Galić, 2012/2013; uredila / edited by A. Rapan Papeša, 2015.)

Antropološke analize pokazale su da je na groblju ukopano ukupno 188 osoba<sup>7</sup>: 65 muškaraca, 44 žene, 35 odraslih neodrediva spola, 42 djece i dvije osobe nepoznata spola i dobi.<sup>8</sup> Zabilježena su i dva ukopa konjanika s konjem.<sup>9</sup> Nalazi su nađeni u 175 grobova. Najčešći nalazi kod svih spolnih i dobnih skupina keramičke su posude i željezni noževi. U muškim je grobovima (sl. 2) čest nalaz ukrasna pojasna brončana garnitura (ali i jednostavni, svakodnevni pojasi), dok se u ženskim grobovima (sl. 3) često nalazi nakit (naušnice, perle ogrlice, narukvice i prstenje) ili oruđe (iglenice, pršljenci). Ukopi djece često su samo umanjene slike grobova odraslih s jako sličnim nalazima. Groblje u Nuštru u prosjeku predstavlja društvo koje bi se moglo opisati kao viša srednja klasa.

Sudeći prema nalazima iz grobova (pojasne garniture, nakit, oruđe i keramika), većina ukopa može se smjestiti u kasnoavarsko razdoblje. To se razdoblje apsolutno kronološki smješta u 8. i početak 9. stoljeća.

Anthropological analyses have shown that a total of 188 individuals<sup>7</sup> were buried at the graveyard: 65 males, 44 females, 35 adults (indeterminate sex), 42 children and 2 people of indeterminate age and sex.<sup>8</sup> In addition, 2 burials of a horseman with his horse were recorded.<sup>9</sup> Grave goods were found in 175 of the graves. The most common finds for all age and sex groups were pottery vessels and iron knives. Male graves (Fig. 2) often featured decorative bronze belt sets (but also simple, everyday belts), while female graves (Fig. 3) usually contained some kind of jewellery (earrings, necklace beads, bracelets, and finger-rings) or tools (needle cases, spindle whorls). The burial sites of children were frequently smaller versions of adult graves, with very similar finds. On average, the burial site at Nuštar represents a society that could be described as upper middle class.

Based on the finds from the graves (belt sets, jewellery, tools and pottery), most of the burial sites belong to the Late Avar Period. In an absolutely

<sup>7</sup> U preostalim 8 grobova nisu nađeni ljudski ostatci.

<sup>8</sup> Premužić, Rajić Šikanjić, Rapan Papeša 2013.

<sup>9</sup> Premužić *et al.* 2012.

<sup>7</sup> The remaining 8 graves contained no human skeletal remains.

<sup>8</sup> Premužić, Rajić Šikanjić, Rapan Papeša 2013.

<sup>9</sup> Premužić *et al.* 2012.



Sl. / Fig. 3: Tipični nalazi iz ženskih grobova / Typical finds from female graves (crtež / drawing by M. Galić, 2012/2013; uredila / edited by A. Rapan Papeša, 2015.)

U usporedbi s ostalim istovremenim kasnoavardobnim grobljima u Hrvatskoj, lokalitet Nuštar/Dvorac izdvaja se jedinstvenim konstrukcijama u grobnim rakama i nalazima. U usporedbi s kasnoavardobnim grobljima općenito, arheološki nalazi iz Nuštra imaju više ili manje slične nalaze, a jedinstvenima ih čini zbir različitih utjecaja (zapadnih i istočnih) na jednom mjestu.

chronological sense, we can define this time period as somewhere between the late 8<sup>th</sup> and beginning of the 9<sup>th</sup> century.

Compared to other contemporaneous Late Avar period cemeteries in Croatia, the Nuštar/Dvorac site stands out for its unique grave pit constructions, as well as its finds. In comparison with other Late Avar period cemeteries, the finds from Nuštar have more or less comparable finds, but what makes them unique is their blending of different influences (Western and Eastern) at one site.

This paper shall present the organic finds, namely textiles, preserved on several of the metal objects found in the graves.

### Methodology – textile analysis

Textiles are organic materials and disintegrate easily, especially if buried in the ground. The great majority of archaeological textiles are tiny fragments, preserved in connection with metal artefacts made of bronze, iron or silver. Although often mineralised, and better described as pseudomorphs than textiles, it is nonetheless possible to extract information from them based on the quality of the weave and yarn, as well as identifying whether they had been made of plant fibre or wool.<sup>10</sup>

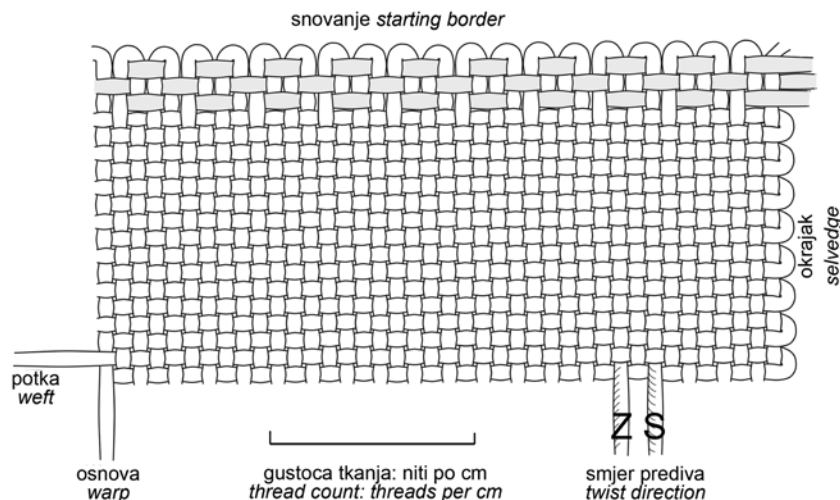
In the case of the mineralised grave finds, weave type and technical details (Fig. 4) such as thread count, yarn diameter, use of plied or single yarn, twist direction (*S* or *Z*), weaving errors, specific pattern types and seams can be studied.<sup>11</sup> The stratigraphic position of textile remain(s) holds important potential for interpreting their function. This step of the analysis is called “microstratigraphy”.<sup>12</sup>

For the Avar textiles from Nuštar, measurements of technical details were carried out with the DinoLite Digital Microscope and light microscope (Zeiss SteREO Discovery.V20). In this, the thread diameter and the fine structures of the weave were documented. Fibre analyses were conducted with

<sup>10</sup> Nowak-Böck 2010.

<sup>11</sup> Walton, Eastwood 1988.

<sup>12</sup> Hägg 1989.



Sl. / Fig. 4: Tehnički detalji tkanine / Technical details of a textile (autorica / author K. Grömer, 2012.)

U ovom će radu biti predstavljena organska materija, odnosno tkanina očuvana na nekolicini metalnih nalaza iz grobova.

### Metodologija – analiza tkanine

Tkanina je organski materijal i lako se raspada, posebno kada je ukopana u zemlju. Velika većina arheološkog tekstila u biti su mali fragmenti povezani s metalnim artefaktima izrađenima od bronce, željeza ili srebra. Iako često mineralizirani i bolje određivi kao pseudomorfi nego kao tkanina, iz njih se ipak mogu izvući podatci o tkanju i vrsti niti te odrediti jesu li izrađeni od biljnih vlakana ili vune.<sup>10</sup>

U slučaju mineraliziranih nalaza iz grobova moguće je promatrati vrstu tkanja i tehničke detalje (sl. 4) kao što su broj niti, promjer pređe, uporaba nanosila ili jednostavnog tkanja, smjer pređenja (S ili Z) i greške u tkanju.<sup>11</sup> Stratigrafski smještaj ostat(a)ka tkanine sadrži potencijalno važne informacije za interpretaciju njihove funkcije. Ovaj se korak analize naziva mikrostratigrafija.<sup>12</sup>

Za avarske tkanine iz Nuštra mjerenja i tehnički detalji obavljani su digitalnim mikroskopom DinoLite i svjetlosnim mikroskopom Zeiss SteREO

the Scanning Electron Microscope (JEOL, JSM-6610LV) at the Central Research Laboratories, located at the Natural History Museum Vienna. Electron microscopy is applied to study objects down to a micro- and even nanometre scale (0.000001 mm) in a structural or analytical manner. There are some problems inherent to the fibre analysis of material, the Nustar finds are covered with consolidation products (attached by restorers to stabilise the artefact). In most cases, the surface of the fibres cannot be viewed without removing the consolidant and/or taking samples.

### Catalogue of the graves with textile remains

Out of the 196 graves excavated in Nuštar, only 7 (3.57 %) of them yielded scarce finds of textile remains (Tab. 1). The position of the graves in question, which are scattered throughout the excavated area, confirms that the only possible reason for the preservation of the textiles was their proximity to metal. However, special conditions must have played a great part in preserving the textiles, since over 1260 metal items originated from the graves at Nuštar – yet only 0.6 % of that number showed traces of preserved textile.

Textile fragments were observed on both bronze (3) and iron (5) items originating from the graves of all sex and age groups, but male burials aged

<sup>10</sup> Nowak-Böck 2010.

<sup>11</sup> Walton, Eastwood 1988.

<sup>12</sup> Hägg 1989.

Discovery.V20. Na ovaj su način dokumentirane debljina pređe i fine strukture tkanja. Analiza vlakana obavljena je elektronskim mikroskopom JEOL, JSM-6610LV u Centralnom istraživačkom laboratoriju smještenom u Prirodoslovnom muzeju u Beču. Elektronska mikroskopija koristi se za proučavanje predmeta u mikro i nanometarskoj skali (0,000001 mm), u strukturnom ili analitičkom pristupu. Postoje određeni problemi svojstveni vlaknima na analiziranom materijalu jer su ona prekrivena proizvodima za konsolidaciju (stavljenima od konzervatora radi stabilizacije predmeta). U većini se slučajeva površina vlakana ne može vidjeti bez uklanjanja konsolidanta ili/i uzimanja uzoraka.

### Katalog grobova s ostacima tkanine

U samo sedam (3,57 %) od 196 istraženih grobova u Nuštru nađeni su oskudni nalazi tekstilnih ostataka (tab. 1). Razmještaj dotičnih grobova raštrkanih širom istraživane površine potvrđuje da je blizina metala jedini mogući razlog očuvanja tekstila. Veliku ulogu u očuvanju tekstila ipak su morali igrati posebni uvjeti jer od preko 1260 metalnih nalaza koji potječu iz Nuštra svega 0,6 % pokazuje tragove očuvane tkanine.

35 to 50 years dominate. Most of these items (6) can be associated with the belt: buckles, hinges and rings. The remaining two are a knife and a breast clasp, another form of fastening garment. Finds with attached textiles come from graves with wooden constructions, very often a combination of several grave pit modifications. This fact is not very telling due to the predominance of these types of grave pits in Nuštar, but it could be one of reasons why the textiles were preserved. According to other finds from the graves, they can be dated to the second half of 8<sup>th</sup> century.

### Find No. PN 87 / Grave 9 (Pl. 1)

Short description of the grave: Rectangular grave pit with hollows under the head and feet (2.57 m x 0.73 m x 0.87 m), orientation W-E. Skeleton in extended supine position, arms stretched next to the body, extremely badly preserved. Anthropological determination: probably female (20–35 years old). Finds: On the knees there is a vessel, bronze finger-rings on each hand and iron bracelets on the left and right arm; 2 breast clasps under the chin. Clasp PN 87 has preserved textile; it was found face down in the grave.

Tablica / Table 1: Grobovi s nalazima tekstila / Graves with textile finds

Broj groba / Grave number	Spol/Dob / Sex/Age	Vrsta rake / Type of grave	Datacija / Dated
5	M/35-50; Horse, M/5-7	udubljenja na dnu, 3 vodoravne grede / bottom depression, 3 horizontal beams	Sredina 8. st. / Middle 8 <sup>th</sup> century
9	?*F/20-35	udubljenja na dnu, sužavanje stepenicama / bottom depression, vertical walls modified by steps	Kraj 8. st. / Late 8 <sup>th</sup> century
10	C/0-5	udubljenja na dnu / bottom depression	Druga polovina 8. st. / Second half of 8 <sup>th</sup> century
46	M/35-50	udubljenja na dnu, utor za drvenu dasku / bottom depression, fillister for wooden top	8. st. / 8 <sup>th</sup> century
58	M/35-50	udubljenja na dnu, sužavanje stepenicama / bottom depression, vertical walls modified by steps	8. st. / 8 <sup>th</sup> century
69	Odrasli / Adult	udubljenja na dnu / bottom depression	Sredina 8. st. / Middle 8 <sup>th</sup> century
126	M/35-50	udubljenja na dnu, sužavanje stepenicama, 3 vodoravne grede / bottom depression, vertical walls modified by steps, 3 horizontal beams	Sredina 8. st. / Middle 8 <sup>th</sup> century

\*Zbog slabe očuvanosti antropološki pretpostavljen spol / Due to poor state of bones sex is assumed



Ulomci tkanine uočeni su na brončanim (tri) i željeznim (pet) predmetima koji potječu iz grobova svih dobnih i spolnih skupina, ali dominiraju ukopi muškaraca u starosti od 35 do 50 godina. Pređice, okovi i alke koji predstavljaju većinu nalaza (šest) mogu se vezati uz pojas. Preostala dva predmeta su nož i spojka koja se koristila kao alternativni način kopčanja odjeće. Nalazi tekstila pojavljuju se u grobovima s drvenim konstrukcijama, pri čemu je vrlo često riječ o nekoliko modifikacija grobne rake. Budući da ovakvi tipovi raka prevladavaju u Nuštru, to i ne govori previše, ali možda je ovo jedan od razloga zašto je tkanina očuvana. S obzirom na ostale nalaze iz grobova, može ih se datirati u drugu polovinu 8. stoljeća.

### Nalaz PN 87 / Grob 9 (T. 1)

Kratki opis groba: Pravokutna raka s doglavnim i donožnim udubljenjima (2,57 m x 0,73 m x 0,87 m), orijentacija Z-I. Kosturni ukop ispružen na leđima, ruke pružene uz tijelo, iznimno loše očuvan. Antropološki vjerojatno žena (od 20 do 35 godina). Prilozi: posuda nađena na koljenima, brončano prstenje na prstima obje ruke, željezne narukvice na obje ruke, ispod brade dvije spojke. Spojka PN 87 ima očuvanu tkaninu, a u grobu je nađena licem prema dolje.

Opis tekstila: Očuvan organski fragment tkanine na prednjoj strani spojke s umetnutim staklima. Tkanina je srednje fino tkanje.

Vrsta tkanja: obično tkanje

Veličina tkanine: 2,00 x 0,7 cm

Materijal: analiza niti nije moguća

Boja: zelenkasto smeđa, izvorno vjerojatno *prirodno bijela*

Tehnički detalji (nije identificirana osnova i potka):  
Sustav niti 1: 0,3–0,4 mm jednostavna Z pređa, kut uvijanja 30°, gustoća od 18 do 20 niti po cm  
Sustav niti 1: 0,3–0,4 mm jednostavna Z pređa, kut uvijanja 30°, gustoća od 16 do 18 niti po cm  
Površina: glatka i ravna

Interpretacija: Spojka je nađena licem prema dolje u smjeru tijela, srednje fino tkanje na prednjoj strani je dio odjevnog predmeta gornjeg dijela tijela.

Description of the textile: Organic preserved textile fragment on the face side of a breast clasp with glass inserts. The textile is a medium fine tabby.

Weave type: tabby

Size of the textile: 2.00 x 0.7 cm

Material: no fibre analysis possible

Colour: greenish-brown, original colour presumably "natural white"

Technical details (no identification warp and weft):

Thread system 1: 0.3–0.4 mm z-single yarn, twist angle 30°, density 18–20 threads per cm

Thread system 1: 0.3 mm z-single yarn, twist angle 30°, density 16–18 threads per cm

Surface: even and flat

Interpretation: The clasp was found with the face side down (facing the body); the medium fine tabby on the face side is a part of the garment on the upper body.

### Find No. PN 200 / Grave 10 (Pl. 2)

Short description of the grave: Rectangular grave pit with hollows under the head and feet (1.50 m x 0.55 m x 0.57 m), orientation W-E. Skeleton in extended supine position, extremely badly preserved. Anthropological determination: child (0–5 years old). Finds: Bronze items belonging to a belt were found in the stomach area, among them an iron ring with attached textiles and a pot in the hollow under the feet. The iron ring PN 200 was found next to the hips (right side). It was used to fix an iron knife to the belt.

Description of the textile: At least two layers of a medium fine tabby textile on the iron ring PN 200.

Weave type: tabby

Size of the textile: 1.8 x 1.1 cm

Material: SEM fibre analysis: bast fibre (plant fibre, no specific characteristics visible)

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.3 mm z-single yarn, twist angle 20–30°, density 12 threads per cm

Thread system 1: 0.3–0.4 mm z-single yarn, twist angle 20–30°, density 12 threads per cm

Surface: open weave, flexible fabric

### Nalaz PN 200 / grob 10 (T. 2)

**Kratki opis groba:** Pravokutna raka s doglavnim i donožnim udubljenjima (1,50 m x 0,55 m x 0,57 m), orijentacija Z-I. Kosturni ukop ispružen na leđima, iznimno loše očuvan. Antropološki određen kao dijete (do pet godina). Prilozi: na području trbuha nađeni dijelovi brončane pojasne garniture, među njima i željezna alka s pričvršćenom tkaninom, a u donožnom udubljenju lonac. Željezna alka PN 200 nađena je uz kuk (desna strana). Korištena je za vješanje noža s pojasa.

**Opis tekstila:** Najmanje dva sloja tkanine srednje finog tkanja na željeznoj alki PN 200.

Vrsta tkanja: obično tkanje

Veličina tkanine: 1,80 x 1,1 cm

Materijal: SEM analiza niti – niti lika (biljna vlakna, nisu vidljiva posebna obilježja)

Boja: crvenkasto smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: 0,3 mm jednostavna Z pređa, kut uvijanja od 20° do 30°, gustoća 12 niti po cm

Sustav niti 1: od 0,3 do 0,4 mm jednostavna Z pređa, kut uvijanja od 20° do 30°, gustoća 12 niti po cm

Površina: otvoreno tkanje, fleksibilna tkanina

**Interpretacija:** Željezna alka nađena je s desne strane uz kuk. Tkanina na alci mogla bi biti dio odjeće ili mrtvačkog pokrova.

### Nalaz PN 309 i 316 / Grob 5 (T. 3)

**Kratki opis groba:** Pravokutna raka s doglavnim i donožnim udubljenjima (2,50 m x 1,45 m x 1,27 m) i tri para rupa za vodoravne grede, orijentacija Z-I. Ukop konja i čovjeka, konj je položen čovjeku s lijeva. Arheozoološki određen kao pastuh star sedam godina. Kosturni ukop ispružen na leđima, ruke pružene uz tijelo; kosti disclocirane uslijed pada grobne konstrukcije. Antropološki određen kao muškarac (od 35 do 50 godina). Prilozi: izmiješani su nalazi pojasne garniture i konjske opreme. Na području trbuha nađeni dijelovi brončane pojasne garniture, među njima i željezna alka s pričvršćenom tkaninom. Brončani okov PN 309 nađena je *in situ* na trbuhu pokojnika. Na području zdjelice nađen je i jedan željezni predmet nepoznate namjene (PN 316).

**Interpretation:** The iron ring with the textile was situated on the right side of the hips. The textile on the ring may have belonged to a garment or a shroud.

### Find No. PN 309 and 316 / Grave 5 (Pl. 3)

**Short description of the grave:** Rectangular grave pit with hollows under the head and feet (2.50 m x 1.45 m x 1.27 m) and 3 pairs of holes that once held horizontal beams, orientation W-E. Burial of a horse and a man, horse laid to the left of the man. Zooarchaeological determination: male horse, 7 years old. Skeleton in extended supine position, arms stretched out next to the body, bones dislocated due to the collapse of the grave construction. Anthropological determination: male (35–50 years old). Finds: admixed belt set and horse harness. The belt fitting PN 309 was still situated *in situ* at the stomach of the deceased. An iron object of unknown function (PN 316) was found at the pelvic region.

**PN 309: Description of the textile:** Small fragment of a fine tabby textile on the face side of a belt fitting (PN 309).

Weave type: tabby

Size of the textile: 0.7 x 0.9 cm

Material: fibre analysis was not possible due to the adhering consolidation products

Colour: reddish brown due to corrosion products, original colour presumably “natural white”

Technical details (no identification warp and weft):

Thread system 1: 0.2–0.3 mm z-single yarn, twist angle 40°, density 16 threads per cm

Thread system 1: 0.3 mm z-single yarn, twist angle 40°, density 16 threads per cm

Surface: flat and even

**Interpretation:** the textile on the outer side of the belt fitting could have belonged to a garment situated in this region (upper garment or trousers), but could also have belonged to a shroud.

**PN 316: Description of the textile:** Iron object of unknown purpose with several layers of fine tabby textiles, 6 layers could be counted.

Weave type: tabby

Size of the textile: 2.5 x 1.0 cm

**PN 309: Opis tekstila:** Mali fragment finog tkanja na naličju pojasnog okova (PN 309).

Vrsta tkanja: obično tkanje

Veličina tkanine: 0,7 x 0,9 cm

Materijal: analiza niti nije moguća zbog pričvršćenih proizvoda za konsolidaciju

Boja: crvenkasto smeđa zbog procesa korozije, izvorno vjerojatno *prirodno bijela*

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: od 0,2 do 0,3 mm jednostavna Z pređa, kut uvijanja 40°, gustoća 16 niti po cm

Sustav niti 1: 0,3 mm jednostavna Z pređa, kut uvijanja 40°, gustoća 16 niti po cm

Površina: ravna i glatka

**Interpretacija:** tkanina na vanjskoj strani pojasnog okova može pripadati odjeći ovog područja (gornja odjeća ili hlače), ali može pripadati i mrtvačkom pokrovu.

**PN 316: Opis tekstila:** željezni predmet nepoznate namjene s nekoliko slojeva tkanine finog tkanja, moglo se izbrojati šest slojeva.

Vrsta tkanja: obično tkanje

Veličina tkanine: 2,5 x 1,0 cm

Materijal: SEM analiza niti – niti lika

Boja: crvenkasto smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: od 0,2 do 0,3 mm jednostavna Z pređa, kut uvijanja od 30° do 40°, gustoća od 14 do 16 niti po cm

Sustav niti 1: 0,2 mm jednostavna Z pređa, kut uvijanja od 30° do 40°, gustoća od 14 do 16 niti po cm

Površina: glatka

Napomena: tkanina je višestruko preklapana ili skupljana.

**Interpretacija:** kontekst usporediv s PN 309, možda također pripada odjeći. Ako je predmet ulomak pređice, tkanina bi mogla biti gornja odjeća koju drži i skuplja pojas.

### Nalaz PN 423 / Grob 46 (T. 4)

**Kratki opis groba:** Pravokutna raka s doglavnim i donožnim udubljenjima (2,41 m x 1,03 m x 1,19 m), orijentacija Z-I (otklon 2° prema S). Kosturni ukop ispružen na leđima, iznimno loše očuvan. Antropološki određen kao muškarac (od 35 do 50

Material: SEM fibre analysis: bast fibre

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.2–0.3 mm z-single yarn, twist angle 30–40°, density 14–16 threads per cm

Thread system 1: 0.2 mm z-single yarn, twist angle 30–40°, density 14–16 threads per cm

Surface: even

Remark: The textile was folded or gathered several times.

**Interpretation:** Context comparable to PN 309, possibly also a part of a garment. If the object was a fragment of a belt buckle, the textile could be an upper garment that was held and gathered by the belt.

### Find No. PN 423 / Grave 46 (Pl. 4)

**Short description of the grave:** Rectangular grave pit with hollows under the head and feet (2.41 m x 1.03 m x 1.19 m), orientation W-E (deviation 2° N). Skeleton in extended supine position, extremely badly preserved. Anthropological determination: male (35–50 years old). Finds: A pot was found in the grave, together with an iron knife next to the right hand and the iron belt buckle PN 423. The belt buckle was situated at the pelvic region of the deceased.

**Description of the organic remains:** On the belt buckle there are two different textiles (Fig. 8; a coarser textile 423–1; and a finer textile 423–2) and a leather fragment (see micro-stratigraphy). Entomological remains were also found.

#### Coarser textile PN 423-1

Weave type: tabby

Size of the textile: 1.2 x 0.6 cm

Material: SEM fibre analysis: perhaps of animal origin

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.4 mm z-single yarn, twist angle 30–40°, density 12 threads per cm

Thread system 1: 0.4 mm z-single yarn, twist angle 40°, density 10–12 threads per cm

Surface: open weave

godina). Prilozi: u grobu je nađen lonac, a uz desnu ruku željezni nož i željezna pređica PN 423. Pređica je nađena na području zdjelice pokojnika.

**Opis organskih ostataka:** Na pređici su dvije različite tkanine (sl. 8; grublja tkanina 423–1 i finija tkanina 423–2) i komadić kože (pogledaj mikrostratigrafiju). Nađeni su i entomološki ostatci.

#### **Grublja tkanina PN 423-1**

Vrsta tkanja: obično tkanje

Veličina tkanine: 1,2 x 0,6 cm

Materijal: SEM analiza niti – možda životinjskog podrijetla

Boja: crvenkasto smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: 0,4 mm jednostavna Z pređa, kut uvijanja od 30° do 40°, gustoća 12 niti po cm

Sustav niti 1: 0,4 mm jednostavna Z pređa, kut uvijanja 40°, gustoća od 10 do 12 niti po cm

Površina: otvoreno tkanje

#### **Finija tkanina PN 423-2**

Vrsta tkanja: obično tkanje

Veličina tkanine: 1,0 x 1,8 cm; 1,6 x 1,2 cm

Materijal: analiza niti nije moguća zbog pričvršćenih proizvoda za konsolidaciju

Boja: crvenkasto smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: 0,2 mm jednostavna Z pređa, kut uvijanja 30°, gustoća od 18 do 20 niti po cm

Sustav niti 1: 0,2 mm jednostavna Z pređa, kut uvijanja 30°, gustoća neprebrojiva

Napomena: tkanina je jako uništena

**Ostatci kože:** Koža je jasno vidljiva, ali se zbog nedostatka identifikacijskih obilježja (uzorak zrnatosti, tekstura) nije mogla odrediti vrsta životinje ni vrsta štavljenja. Usprkos tome površina kože pokazuje zanimljive ukrase: reljef s trokutastim ili kapljastim žigovima (*Prägung*; žigosana koža), po tri u nizu.

**Entomološki ostatci:** Na pređici je nađena ličinka muhe (*diptera pupa*).

**Interpretacija:** kontekst pređice nađene na području zdjelice jasno određuju ulogu kože koja je prethodno je pripadala pojasu kopčanom pređicom. Koža je presavijena i u njoj je otkriven neidentificiran organski materijal.

#### **Finer textile PN 423-2**

Weave type: tabby

Size of the textile: 1.0 x 1.8; 1.6 x 1.2 cm

Material: fibre analysis not possible due to the adhering consolidation products

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.2 mm z-single yarn, twist angle 30°, density 18–20 threads per cm

Thread system 1: 0.2 mm z-single yarn, twist angle 30°, density not countable

Remark: the textile is in a very bad condition

**Leather remains:** The leather is clearly visible, but the type of animal and the type of tanning cannot be identified because clear identifying characteristics (grain pattern, texture) are missing. Nevertheless, the surface of the leather shows interesting decorations: triangular or drop-shaped embossments (*Prägung*; leather with stamping), three in a line.

**Entomological remain:** A fly larva was found on the buckle (*diptera pupa*).

**Interpretation:** As the belt buckle was found at the pelvic region, this context gives the leather a clear function: it formerly belonged to the belt that was closed by the buckle. The leather was folded and unidentified organic material was detected in it.

There are two layers of textiles on the belt buckle: on the face side a fine tabby (423–2), which is in a very bad condition. This textile bends over the edge of the buckle and can be seen on the back side, as well. Next to the body of the deceased person, a coarser wool tabby (423-1) was found.

It can be deduced that the fine tabby face and back side of the belt buckle are the remains of a “belted” garment (e.g. tunic). The wool cloth between the belted garment and the body could have belonged to a pair of trousers.

#### **Find No. PN 707 / Grave 58 (Pl. 5)**

**Short description of the grave:** Rectangular grave pit with hollows under the head and feet (2.32 m x 0.92 m x 1.28 m), orientation W-E. Skeleton in extended supine position, arms stretched out next

Na predici su dva sloja tkanine: na prednjici jako uništeno fino tkanje (423-2) koje se savija preko ruba predice i uočljivo je i na poledini, a prema tijelu pokojnika nalazimo grublje vuneno tkanje (423-1).

Možemo zaključiti da finija tkanina s prednje i stražnje strane predice pripada ostatcima opojasane odjeće, tj. odjeće skupljene pojasom (npr. tunici). Vuneno sukno između obavijene odjeće i tijela možda su hlače.

### Nalaz PN 707 / Grob 58 (T. 5)

Kratki opis groba: Pravokutna raka s doglavnim i donožnim udubljenjima (2,32 m x 0,92 m x 1,28 m), orijentacija Z-I. Kosturni ukop ispružen na leđima, ruke pružene uz tijelo, u dobrom stanju. Antropološki određen kao muškarac (od 35 do 50 godina). Prilozi: željezna predica i brončana kopča, lonac uz desno koljeno i uz desni kuk željezni nož (PN 707). Očuvani su i dijelovi drvene ručke noža.

Opis tekstila: željezni nož PN 707 s jednim slojem srednje grubog tkanja na jednoj strani.

Vrsta tkanja: obično tkanje

Veličina tkanine: 6,00 x 1,8 cm i 1,7 x 0,7 cm

Materijal: analiza niti nije moguća

Boja: crvenkasto-smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: od 0,4 do 0,5 mm jednostavna Z pređa, kut uvijanja od 20° do 30°, gustoća od 10 do 12 niti po cm

Sustav niti 1: od 0,4 do 0,5 mm jednostavna Z pređa, kut uvijanja od 20° do 30°, gustoća od 10 do 12 niti po cm

Površina: ravna i glatka, otvoreno tkanje

Interpretacija: Tkanina je nađena na oštrici noža, ali uz ruku pokojnika. Značajno je što je tkanina nađena samo s jedne strane artefakta i što ne prelazi rub. Postoje tri moguća objašnjenja za ove ostatke:

- moguća je da tkanina pripada odjeći ovog dijela tijela pokojnika (gornja odjeća, hlače ili pogrebna odjeća),
- tkanina predstavlja pokrov ili omot noža,
- tkanina je dio mrtvačkog pokrova koji je prekrivao pokojnika i njegove nalaze.

to the body, well preserved. Anthropological determination: male (35–50 years old). Finds: iron belt buckle and a bronze clasp, a pot next to the right knee and an iron knife (PN 707) next to the right hip an iron knife. Remains of the wooden knife handle are also preserved.

Description of the textile: Iron knife PN 707 with one layer of medium coarse tabby on one side.

Weave type: tabby

Size of the textile: 6.00 x 1.8 cm and 1.7 x 0.7 cm

Material: fibre analysis not possible

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.4–0.5 mm z-single yarn, twist angle 20–30°, density 10–12 threads per cm

Thread system 1: 0.4–0.5 mm z-single yarn, twist angle 20–30°, density 10–12 threads per cm

Surface: flat and even, open weave

Remark: The textile covers about 50 % of the knife blade. The thread direction of the fabric is parallel to the edges of the blade.

Interpretation: The textile was found on a knife blade, but situated next to the hip of the deceased. It is remarkable that the textile was found only on one side of the artefact, without bending over the edge. There are three different possibilities for interpreting such remains:

- Perhaps the textile belonged to a garment that was situated in this region of the deceased (upper garment, trousers or funeral dress),
- The textile could have represented a covering or wrapping for the knife,
- The textile was a fragment of a shroud that covered the deceased and his grave goods.

### Find No. PN 815 / Grave 69 (Pl. 6)

Short description of the grave: Rectangular grave pit with hollows under the head and feet (2.30 m x 0.83 m x 1.40 m), orientation W-E (deviation 4° N). Skeletal burial, only leg bones preserved. Anthropological determination: adult, neither gender nor age can be determined. Finds: Several belt fittings were found in the pelvic region, and part of a belt set and a knife were found in the hollow



### Nalaz PN 815 / Grob 69 (T. 6)

**Kratki opis groba:** Pravokutna raka s doglavnim i donožnim udubljenjima (2,30 m x 0,83 m x 1,40 m), orijentacija Z-I (otklon 4° prema S). Kosturni ukop, očuvane samo kosti nogu. Antropološki određen kao odrasla osoba nepoznata spola i dobi. Prilozi: u području zdjelice nađeno više posjanih okova, a dio garniture i nož nađeni u doglavnom udubljenju. Predica PN 815 nađena je na području desnog kuka.

**Opis tekstila:** Tkanina srednje grubog tkanja na obje strane pređice s područja kuka.

Vrsta tkanja: obično tkanje

Veličina tkanine: 1,5 x 0,7 cm

Materijal: analiza niti nije moguća zbog dodanih konsolidacijskih proizvoda

Boja: crvenkasto smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: od 0,4 do 0,5 mm jednostavna Z pređa, kut uvijanja od 30° do 40°, gustoća od 14 do 16 niti po cm

Sustav niti 1: 0,5 mm jednostavna Z pređa, kut uvijanja od 30° do 40°, gustoća od 14 do 16 niti po cm

Površina: jednostavna i glatka

Napomena: tkanina ima nabore, vidljivo je pet slojeva

**Interpretacija:** Tkanina je nađena s prednje i stražnje strane pređice i savija se preko ruba. Mjesto nalaza pređice *in situ* i tkanina pričvršćena za nju upućuje na opojasanu odjeću. To potvrđuje nekoliko nabora i višeslojnost tkanine. Obavijena odjeća može biti hlače ili gornja odjeća. Pod pretpostavkom da razni lijepo ukrašeni pojasi okovi koji pripadaju avarskom pojasi trebaju biti vidljivi, vjerojatnije je da tkanina pripada gornjoj odjeći koja je bila opasana pojansom i skupljena.

### Nalaz PN 975 / Grob 126 (T. 7)

**Kratki opis groba:** Pravokutna raka s doglavnim i donožnim udubljenjima (2,25 m x 0,79 m x 1,05 m), orijentacija Z-I (otklon 4° prema J). Kosturni ukop ispružen na leđima, loše očuvan. Antropološki određen kao muškarac (od 35 do 50 godina). Prilozi: u grobu nađen lonac, željezni nož i pojasna garnitura koju čine razni jezičci i okovi, brončana kopča i željezna pređica PN 975.

under the head. Belt buckle PN 815 was found in the right hip region.

**Description of the textile:** Medium coarse tabby textile on both sides of a belt buckle in the hip region.

Weave type: tabby

Size of the textile: 1.5 x 0.7 cm

Material: fibre analysis not possible due to the adhering consolidation products

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.4–0.5 mm z-single yarn, twist angle 30–40°, density 14–16 threads per cm

Thread system 1: 0.5 mm z-single yarn, twist angle 30–40°, density 14 threads per cm

Surface: plain and even

Remark: the textile has folds, 5 layers are visible

**Interpretation:** The textile was found on both the face and the back side of the belt buckle and it bends over one edge. The *in situ* position of the belt buckle and the textile attached to it indicates that the fabric belonged to the “belted garment”. This is confirmed by several folds and the multi-layering of the fabric. This belted garment could have been a pair of trousers or an upper garment. Presuming that the various beautifully decorated belt fittings belonging to the Avar belt were meant to be visible, it seems likely that the fabric belonged to an upper garment that was belted and gathered.

### Find No. PN 975 / Grave 126 (Pl. 7)

**Short description of the grave:** Rectangular grave pit with hollows under the head and feet (2.25 m x 0.79 m x 1.05 m), orientation W-E (deviation 4° S). Skeleton in extended supine position, badly preserved. Anthropological determination: male (35–50 years old). Finds: a pot, an iron knife and a belt composed of various strap ends and bronze belt fittings, a bronze clasp and the iron belt buckle PN 975.

**Description of the textile:** Medium fine tabby on various parts of the back side of the belt buckle PN 975. The textile bends over one edge, and fragments of it are also visible on the face side.

**Opis tekstila:** Srednje grubog tkanje na različitim dijelovima stražnje strane pređice PN 975. Tkani-na se savija preko ruba i fragmentarno je također vidljiva na prednjoj strani.

Vrsta tkanja: obično tkanje

Veličina tkanine: 1,7 x 0,5 cm; 2,00 x 1,5 cm

Materijal: SEM analiza vlakna – vuna

Boja: crvenkasto smeđa zbog procesa korozije

Tehnički detalji (nije identificirana osnova i potka):

Sustav niti 1: 0,3 mm jednostavna Z pređa, kut uvijanja 30°, gustoća od 14 do 16 niti po cm

Sustav niti 1: 0,3 mm jednostavna Z pređa, kut uvijanja 30°, gustoća od 14 do 16 niti po cm

Napomena: tkanina se savija preko ruba i vidljiva je na prednjoj i stražnjoj strani pređice

**Interpretacija:** Tkanina je nađena s prednje i stražnje strane pređice i savija se preko ruba. Mjesto nalaza pređice *in situ* i tkanina pričvršćena za nju upućuje na opojasanu odjeću.

## RASPRAVA

*Nalazi iz Nuštra u usporedbi s avarskim tkaninama s drugih groblja*

Sva tkanina pronađena u Nuštru ima istu vrstu tkanja i jednaku kvalitetu. Sastoji se od 0,2 do 0,4 mm (ponekad 0,5 mm) debelih pređa, predenih u Z uvoju. Nađena se tkanina jedino razlikuje u broju niti. Neke tkanine su nešto gušće od ostalih, što je vidljivo u broju od 20 niti po cm. Više otvorena tkanja imaju broj od 12 niti po cm, što ih čini više elastičnijima. Zbog dodavanja proizvoda za konsolidaciju, u većini slučajeva nije bila moguća analiza vlakana. Rijetki su slučajevi identifikacije vune ili biljnih vlakana.

Kvalitete tkanine i tehničke osobine nalaza iz Nuštra mogu se naći i na drugim avarskim grobljima. Analizirane tkanine iz avarodobnih grobova u Hrvatskoj dolaze s lokaliteta Bijelo brdo I. Radi se o simetričnim tkanjima okrenute osnove s debljim nitima u jednom sustavu niti izrađenima od biljnih vlakana.<sup>13</sup> Ostatci tekstila zabilježeni su i na kasnoavarodobno/ranoslavenskom groblju Brodski Drenovac, opisani kao tkanja od životinjskih vlakana.<sup>14</sup>

<sup>13</sup> Ivaniček 1949, 134–135.

<sup>14</sup> Vinski-Gasparini, Ercegović 1958, 140.

Weave type: tabby

Size of the textile: 1.7 x 0.5; 2.0 x 1.5 cm

Material: SEM fibre analysis: wool

Colour: reddish brown due to corrosion products

Technical details (no identification warp and weft):

Thread system 1: 0.3 mm z-single yarn, twist angle 30°, density 14–16 threads per cm

Thread system 1: 0.3 mm z-single yarn, twist angle 30°, density 14–16 threads per cm

Remark: the textile bends over the edge and is visible on the back and face side of the belt buckle

**Interpretation:** The textile was found on both the face and the back side of the belt buckle and bends over one edge. The *in situ* position of the belt buckle and the textile attached to it indicates that the fabric belonged to the “belted garment”.

## DISCUSSION

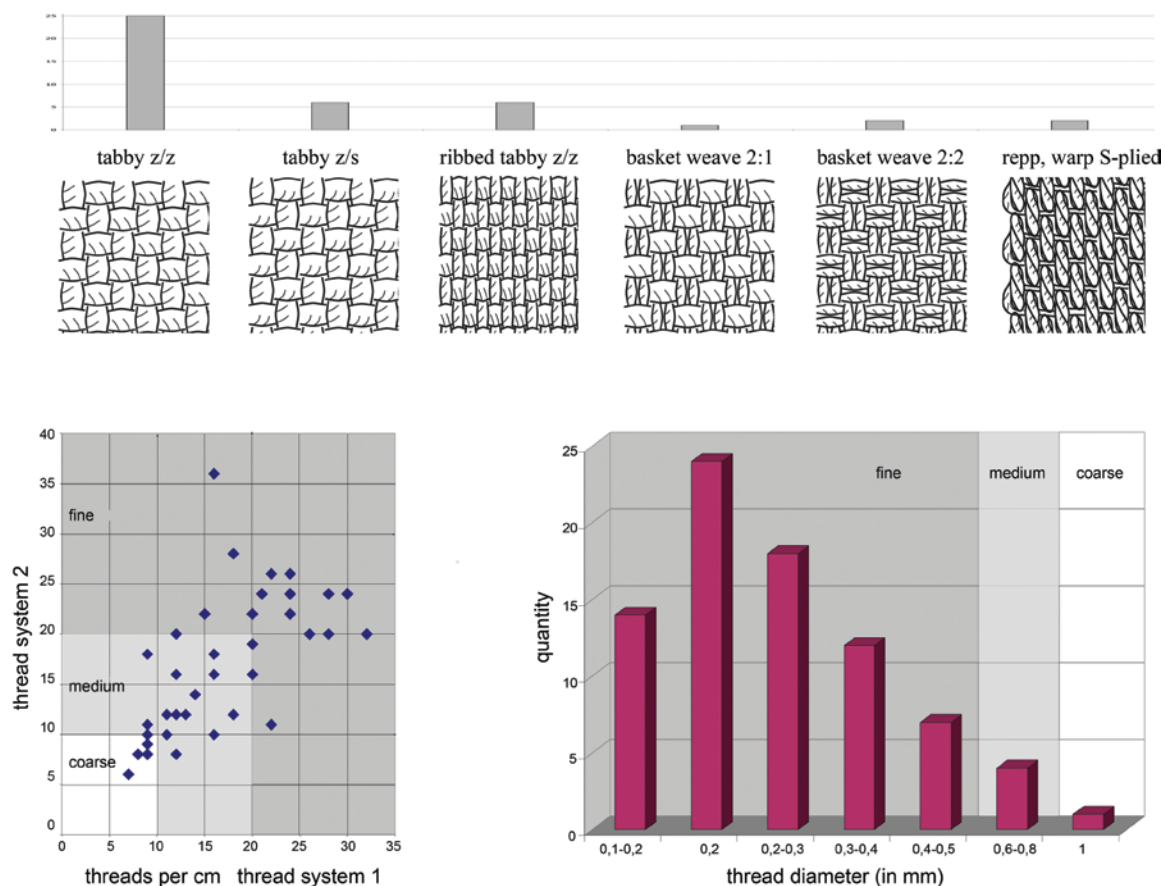
*The Nuštar finds in comparison with Avar textiles from other graveyards*

All of the textiles found in Nuštar have the same weave type and are nearly of the same quality. They consist of tabbies with 0.2–0.4 mm (sometimes 0.5 mm) thick yarns, spun in z-twist. Only the thread counts vary somewhat. Some of the textiles are somewhat denser than the others. This can be seen by a thread count of 20 threads per cm. More open weaves have a thread count of 12 threads per cm, which makes them somewhat more elastic. In most cases, fibre analysis was not possible due to the adhering consolidation products. There are rare cases of identification of wool and plant fibre.

The textile quality and technical characteristics of the finds from Nuštar can be found in other Avar graveyards, as well. Analysed textiles from Avar period graves in Croatia come from the Bijelo brdo I site. These are balanced tabbies and warp-faced items with thicker threads in one thread system made of plant fabrics.<sup>13</sup> Textile remains have been recorded at the Late Avar/Early Slav period graveyard at Brodski Drenovac, described as tabby made of animal fibres.<sup>14</sup>

<sup>13</sup> Ivaniček 1949, 134–135.

<sup>14</sup> Vinski-Gasparini, Ercegović 1958, 140.



Sl. / Fig. 5: Usporedba: tipovi tkanja i kvalitete tkanine s avarskog groblja Zwölfaxing / Comparison: Weave types and cloth qualities from the Avar graveyard in Zwölfaxing, Austria (autorica / author K. Grömer, 2008.)

Tkanine nađene u avarskim grobovima u Austriji i Mađarskoj također pokazuju jednostavnost:<sup>15</sup> u njima prevladavaju jednostavna tkanja, a rijetko se pronalaze košarasta i parana tkanja. Od više od 120 analiziranih avarskih tkanina iz Austrije (Sommerein, Leobersdorf, Frohsdorf i Zwölfaxing),<sup>16</sup> samo su dvije izrađene unakrsnim tkanjem. Te sutkanine prilično fine, što pokazuju analize materijala iz Zwölfaxinga (sl. 5).<sup>17</sup> Slična je slika tekstila poznata iz grobova rimskog razdoblja u Austriji. Ipak, avarske se tkanine uvelike razlikuju od istovremenih alamanskih i bajuvarskih tkanina<sup>18</sup> na kojima se češće uočava unakrsno tkanje u nekoliko kitnjastih varijanti kao što

The fabrics found in Avar graves in Austria and Hungary also show a very simple range:<sup>15</sup> plain tabby dominates, while basket weave and rep is rarely found. Only two of over 120 analysed Avar textiles from Austria (Sommerein, Leobersdorf, Frohsdorf and Zwölfaxing)<sup>16</sup> have been made in twill. As demonstrated by the analyses of the materials from Zwölfaxing (Fig. 5),<sup>17</sup> the textiles are quite fine. Textiles of a similar appearance have been found in graves from the Austrian Roman Period, 4<sup>th</sup> and 5<sup>th</sup> century AD. However, the Avar textiles differ markedly from the Alamannic and Bajuvarian textiles, 5<sup>th</sup> till 8<sup>th</sup> cent. AD,<sup>18</sup> which more frequently feature twill fab-

<sup>15</sup> Grömer 2010.

<sup>16</sup> Hundt 1984; Hundt 1987; Klatz 2010; Grömer, Müller 2008.

<sup>17</sup> Grömer, Müller 2008.

<sup>18</sup> Vidi npr. Bender Jørgensen 1992, 68 i dalje, 110 i dalje; Brather, Krausse 2013; Peek 2013; Rast-Eicher 2002.

<sup>15</sup> Grömer 2010.

<sup>16</sup> Hundt 1984; Hundt 1987; Klatz 2010; Grömer, Müller 2008.

<sup>17</sup> Grömer, Müller 2008.

<sup>18</sup> e.g. Bender Jørgensen 1992, 68 ff., 110 ff.; Brather, Krausse 2013; Peek 2013; Rast-Eicher 2002.

su *Rippenköper* (rebrasti keper) ili *Kreuzköper* (križni keper).

Iz kasnijeg razdoblja, između 9. i 11. stoljeća, analizirano je nekoliko nalaza tkanina iz primorske Hrvatske. Na ranohrvatskom groblju Stranče (u blizini Crikvenice, jadranska obala) ostatci tkanina nađeni su u sedam grobova. Tkanine su jednostavne, izrađene od lana.<sup>19</sup> Nešto složenija opažanja napravljena su na ostacima tkanina iz ranohrvatskog groblja Crkvine-Biskupija, pri čemu je uočeno kako je poseban način tkanja dvostrukih niti rezultirao mrežastom tkaninom (*macramé*) s motivima romba.<sup>20</sup> Slični ostatci tkanina nađeni su i grobovima na Sv. Spasu, koji su, doduše, još složeniji, ukrašeni vezom i vjerojatno uvezeni s Orijenta.<sup>21</sup> Neanalizirani ostatci tekstila nađeni su i u devet grobova na ranohrvatskom groblju Nin-Ždrijac.<sup>22</sup> Ukratko, možemo reći da u razdoblju između 8. i 11. stoljeća na prostoru današnje Hrvatske ostatke tkanina jednostavna tkanja nalazimo na dijelovima nošnje ili grobnim priložima.

Vratimo se 8. stoljeću. Kao objašnjenje razlike između avarskih i tkanina drugih plemena iz istog razdoblja u Podunavlju mogu se ponuditi dva različita objašnjenja:

Osim što se tkanja tekstila avarskih tkanina razlikuju od tkanja drugih plemena iz istog razdoblja (od 7. do 9. st.), činjenica je da u avarskim naseljima nisu nađeni utezi za razboje. S jedne strane Avari možda imaju drugačije tehnike proizvodnje temeljene na razboju s dvjema gredama. Ovakav jednostavan razboj za tkanje jednostavnih tkanja sa samo jednim čunkom lakše je prenosiv i stoga pogodan za nomadski način života Avara u trenutku kad su pokorili istočnu Europu.

Detaljna analiza pršljenaka za vreteno iz Nuštra<sup>23</sup> (sl. 6) pokazala je kako su avarski stanovnici Nuštra imali znanja o proizvodnji niti. Različiti tipovi (okrugli, bikonični) i težina<sup>24</sup> pršljenaka sugeriraju da su pršljenici korišteni za izradu različitih

rics in different elaborate variants, such as *Rippenköper* or *Kreuzköper*.

Several textile finds from coastal Croatia dating from the period between the 9<sup>th</sup> and the 11<sup>th</sup> century AD have been analysed. For example, textile remains from 7 graves were found at an Early Croatian graveyard at the Stranče site (near Crikvenica, Adriatic coast). These textiles were simple tabby and made of linen.<sup>19</sup> Somewhat more complex observations were made for the textile remains from the Early Croatian graveyard at the Crkvine – Biskupija site; a specific way of weaving double yarns resulted in net-like textile (*macramé*) with rhomboid motifs.<sup>20</sup> Similar textile remains were found in graves at the Sv. Spas site; those were even more complex, with embroidery, and had possibly been imported from the Orient.<sup>21</sup> Unanalysed textile remains were found in 9 graves at Early Croatian graveyard Nin-Ždrijac.<sup>22</sup> To sum up, we can state that textile remains from the territory of modern Croatia that were found attached on dress adornments and grave goods dating between the 8<sup>th</sup> and 11<sup>th</sup> century are simple tabbies, addad by some more complex fabrics.

Back to the 8<sup>th</sup> century: for the differences between the textiles of the Avars and those from other contemporary tribes in the Danube Area (e.g. Bajuvarian), two different interpretations can be offered:

It is a fact that not only do the Avar tabby textiles differ from those of the contemporary (7<sup>th</sup> – 9<sup>th</sup> century AD) tribes in the west and north, but that we can also find almost no loom weights in these Avar settlements. On one hand, perhaps the Avars had different manufacturing techniques based on a two-beam loom. This kind of loom, which can easily be used for weaving simple weaves with one heddle rod, is more transportable and therefore suitable for the nomadic lifestyle of the Avars during the period while they were conquering Eastern Europe.

<sup>19</sup> Cetinić 2011, 238.

<sup>20</sup> Dragičević 1981, 193, 195.

<sup>21</sup> Dragičević 1982, 163–164, 170.

<sup>22</sup> Belošević 2007, 427.

<sup>23</sup> Rapan Papeša 2014.

<sup>24</sup> Prosječna težina pršljenaka iz Nuštra je 22,76 g, u rasponu od 13,48 do 35,14 g.

<sup>19</sup> Cetinić 2011, 238.

<sup>20</sup> Dragičević 1981, 193, 195.

<sup>21</sup> Dragičević 1982, 163–164, 170.

<sup>22</sup> Belošević 2007, 427.



Sl. / Fig. 6: Izabrani nalazi pršljenaka za vretena iz Nuštra / Selected finds of spindle whorls from Nuštar (autorica / author A. Rapan Papeša, 2015.)

vrsta niti i posljedično tkanina različitih kvaliteta.<sup>25</sup> Tragovi razboja nisu nađeni jer pozicija naselja kojem groblje pripada nije istraživana.

Drugo objašnjenje za sklonost k jednostavnim tkanjima može biti to što je istočna Austrija činila zapadnu granicu velikog avarskog carstva na kojoj su se Avari pomiješali sa starosjediocima. Prevaga jednostavnih tkanja možda predstavlja preživljavanje tradicije stanovnika rimske provincije Norik<sup>26</sup> koju su Avari naslijedili.

### Namjena tkanine u grobovima

Možemo utvrditi različite svrhe nalaza tkanina iz Nuštra. Oni su prije svega služili kao odjeća preminulih osoba, no čini se da možemo utvrditi i neke njihove ritualne svrhe, kao što su umotavanje/prekrivanje ili mrtvački pokrovi. Prvo tumačenje tkanine kao odjeće čini se jasnim u onim slučajevima kada su ostatci tkanine pričvršćeni na dijelove nošnje *in situ* (npr. predice nađene na truhu/zdjelici), posebno ako se ostatci tkanine nalaze sa stražnje strane. To je strana predmeta koja se nalazi uz mrtvaca.

### Odjeća u muškim grobovima

Tkanina očuvana na razmatranim predicama pretežno je nalažena u grobovima odraslih muškaraca. Nalaz PN 975 može se odrediti kao tipičan primjer. Ovdje je srednje fino tkanje bilo povezano sa stražnjom stranom željezne predice u grobu 126 koji pripada muškarcu starom od 35 do 50 godina. *In situ* lokacija predice i povezana tkanina

A detailed analysis of spindle whorls from the Nuštar site<sup>23</sup> (Fig. 6) has shown that Avar settlers had knowledge of producing thread. The different types (round, biconical) and their weight<sup>24</sup> suggest that spindle whorls were used for the production of different kinds of threads and, consequently, textiles of different quality.<sup>25</sup> No traces of loom elements were found because the position of the settlement that graveyard belongs to have not been excavated.

Another explanation for the preference of tabbies could be that Eastern Austria and Hungary as well as Croatia forms the (south-)western border of the vast Avar Empire, where Avars mixed with local populations. The predominance of tabby and its variants may reflect the survival of the traditions of the inhabitants of the Roman Province Noricum and Pannonia,<sup>26</sup> which were inherited later by the Avar people.

### Function of the textiles in the graves

For the textile finds from Nuštar, we are able to identify different functions. First of all, they served as garments of the deceased persons. It seems as if we also can deduce some ritual function, such as shrouds or wrappings/coverings of grave goods. The first interpretation of textiles as garments seems clear in those cases in which the cloth remains are attached to dress fittings *in situ* (e.g. belt buckles found in the stomach/pelvic area), especially on the back side. This would be the side of the item facing the deceased person.

<sup>23</sup> Rapan Papeša 2014.

<sup>24</sup> Average weight is 22.76 g, span from 13.48–35.14 g.

<sup>25</sup> Grömer 2015, 85–90, fig. 41.

<sup>26</sup> Grömer 2014, 33–35, fig. 17–19.

<sup>25</sup> Grömer 2015, 85–90, sl. 41.

<sup>26</sup> Grömer 2014, 33–35, sl. 17–19.





Sl. / Fig. 7: Rekonstrukcija Avarina / Reconstruction of an Avar (snimila / photo by H. Rösel-Mautendorfer, 2007.)

upućuju na to da je tkanina pripadala opojasanoj odjeći. Isto se može reći za predicu i tkaninu PN 815 iz groba 69. Kao i kod drugih primjera (PN 423, PN 975), tkanina nije bila vidljiva samo na stražnjoj strani okrenutoj prema pokojniku, nego i na prednjoj strani predice. U posebnim slučajevima kada tkanina ima nabore, vidljivo je nekoliko slojeva (PN 316, PN 423, PN 815). Iz toga zaključujemo da je opojasana odjeća u ovom slučaju bila skupljena i nabrana remenom. Kako bismo shvatili te slojeve, moramo razmišljati o principima avarskog odijevanja. Nažalost, antropomorfno ukrašavanje nije jako često u avarskoj umjetnosti, oskudni primjeri ikonografije s ljudskim likovima zlatne su posude iz blaga Sînnicolaul Mare (Nagyszentmiklós),<sup>27</sup> spojke iz Mödling-

<sup>27</sup> Friesinger, Vacha 1988, 94.

## Garments in male graves

Fabrics preserved on the examined belt buckles were mainly found in the graves of adult men. The find PN 975 can be named as characteristic example. There, a medium fine tabby was attached to the back side of an iron belt buckle in grave 126, the grave of a man aged between 35 and 50. The *in situ* position of the belt buckle and the textile attached to it indicates that the fabric belonged to the “belted garment”. The same can be said for the belt buckle and textile PN 815 from grave 69. As with other examples (PN 423, PN 975), the textile was not only visible on the back side facing the deceased person, but also on the face side of the belt buckle. In certain cases, the textile has folds with several layers visible (PN 316, PN 423, PN 815). Therefore, we can deduce that the “belted garment” in this case was gathered and folded by the belt. To understand these layers, we must bear in mind the principles of Avar clothing. Unfortunately, anthropomorphic decoration was not very common in Avar art, and some of the rare examples of iconography with human figures are the golden vessels of the Sînnicolaul Mare (=Nagyszentmiklós) treasure from nowadays Romania<sup>27</sup> or the agrafes from Mödling-Goldene Stiege<sup>28</sup> in Austria and various strap-ends from Hungarian sites.<sup>29</sup> The garment covering the upper body was a kaffan-like overcloth extending past the waist to the knee (Sînnicolaul Mare, vessel no. 7; Hungarian strap-ends e.g. Egyházaskér).

It is important to note that the belts were objects of prestige, sometimes elaborately decorated with ornamented belt fittings.<sup>30</sup> In the case of PN 423, we were able to even identify decoration on the leather surface of the belt itself in the form of embossments with triangular or drop-shaped stamping. Therefore, it is clear that Avar period belts were worn to be seen. We can also assume that the upper garment, which was belted, was one of the outer layers of the costume. Perhaps nothing was worn over it.

Find No. PN 423, the belt buckle from the grave of a 35–50 year old man (grave 46), has a more

<sup>27</sup> Friesinger, Vacha 1988, 94.

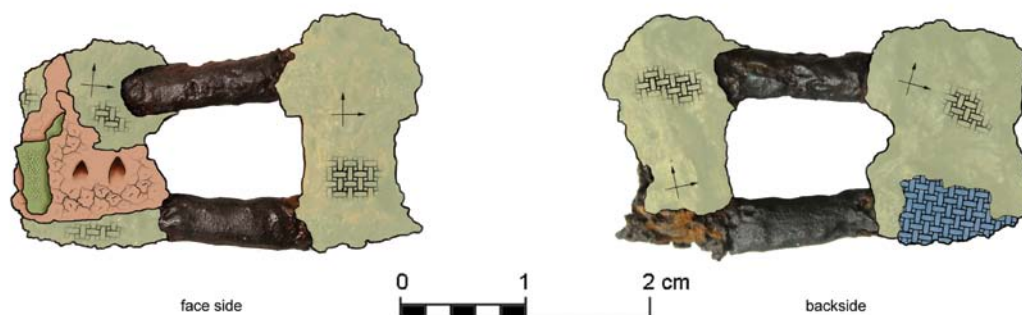
<sup>28</sup> Daim 1996, 300.

<sup>29</sup> Fettich 1937; Erdélyi 1966, tab. 9.

<sup>30</sup> Rapan Papeša 2012, 5, 20.

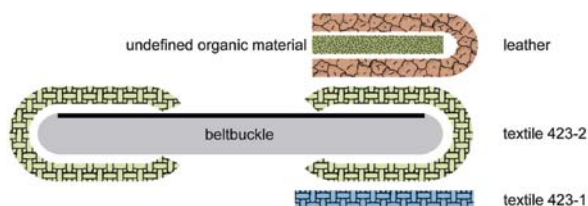
## Mapping of organic layers

Nuštar 2011, Grave 46, Fdnr. PN 423



## Microstratigraphy

Nuštar 2011, Grave 46, Fdnr. PN 423



Sl. / Fig. 8: Organski slojevi na PN 423: mapiranje i mikro-stratigrafija / Organic layers on PN 423: mapping and microstratigraphy (autorica / author A. Rudelics, 2014.)

GoldeneStiege<sup>28</sup> i razni jezičci s mađarskih lokaliteta.<sup>29</sup> Odjeća koja pokriva gornji dio tijela ogrtač je nalik kaftanu koji prelazi preko struka do koljena (Sinnicolaul Mare, posuda br. 7; mađarski jezičci, npr. Egyházaskér).

Važno je naglasiti da su pojasi kao predmeti prestiža ponekad jako ukrašeni pojasnim okovima s uzorkom i ornamentom.<sup>30</sup> U slučaju PN 423 bili smo u mogućnosti odrediti čak i ukrase na površini kože remena, reljefe s trokutastim ili kapljastim žigosanjem. Dakle, jasno je da su avarski pojasi nošeni kako bi bili viđeni. Zbog toga možemo pretpostaviti da je gornja odjeća koja je bila povezana pojansom bila jedan od vanjskih slojeva nošnje, a preko nje možda ništa nije nošeno.

Nalaz PN 423, predica iz groba muškarca starog od 35 do 50 godina (grob 46) ima složenu mikrostratigrafiju (sl. 8): na vrhu je našdena reljefna koža remena koja je bila nabrana, a između na-

complex micro-stratigraphy (Fig. 8): embossed belt leather was found on the top. The leather was folded, and an unidentified organic material of unknown purpose was found between the folds. Directly on both sides of the buckle, a finer but decayed textile (423–2) was found. Between the body and the buckle we found two textiles, and a coarser textile (423–1) of animal fibre next to the skeleton. The finer cloth 423–2 can be identified as the “belted garment” described before, but the wool cloth between the belted garment and the body needs more interpretation. Is it possible that it represents the fragments of a pair of trousers, or perhaps a second layer of an upper garment?

Iconographic sources sometimes indicate that Avar male clothing was multi-layered, with an undertunic and a kaftan-like overcloth; while depictions of men with trousers, or leg-wrappers (e.g. Mödling, grave 114) are also known. For PN 423 from Nuštar, this problem cannot be resolved on the basis of the small fragments available to us.

<sup>28</sup> Daim 1996, 300.

<sup>29</sup> Fettich 1937; Erdélyi 1966, tab. 9.

<sup>30</sup> Rapan Papeša 2012, 5, 20.

bora uočen je neidentificirani organski materijal nepoznate namjene. Finija, ali uništena tkanina 423–2 nađena je neposredno na predici s obje strane. Između tijela i predice nađene su dvije tkanine. Grublja tkanina 423-1 nađena uz kostur izrađena je od životinjskih vlakana, dok se finija tkanina 423-2 može odrediti kao prethodno opisana opoјasana odjeća. Za vunenu su tkaninu između odjeće stegnute poјasom i tijela potrebna dodatna objašnjenja. Je li moguće da imamo komad hlača ili se radi o drugom sloju gornje odjeće?

Ikonografski izvori ponekad upućuju na to da je avarska muška odjeća bila višeslojna, s podtunikom i ogrtačem nalik na kaftan, ali poznati su i prikazi muškaraca s hlačama ili obojcima (npr. grob 114 u Mödlingu). Za PN 423 iz Nuštra ovaj se problem ne može riješiti na osnovi malih fragmenata koje vidimo.

### Odjeća u ženskim grobovima

Samo je jedan komad tkanine u ženskom grobu koji možemo odrediti kao dio nošnje. U grobu 9 pokopana je žena stara od 20 do 35 godina koja je uz ostale predmete imala i dvije spojke ispod brade. Spojka PN 87 nađena je u grobu naopako, a na prednjoj je strani nađeno srednje fino tkanje. Na ovom je predmetu vidljivo da je tkanina glatke i ravne površine vjerojatno bila prirodno bijele boje u trenutku kada je stavljena u grob. Smještaj spojke u grobu i tkanina na njoj upućuju na to da se radi o dijelu odijela za gornji dio tijela. Ne znamo kako je točno izgledala odjeća avarskih žena jer su na rijetkim prikazima obično prikazani muškarci. U ranosrednjovjekovnoj središnjoj Europi otkuda imamo puno ikonografskih i pisanih izvora,<sup>31</sup> uobičajena je odjeća 8. i 9. stoljeća bila dugačka tunika, ponekad nošena s plaštom, kako je prikazano u Brevijaru iz Stuttgarta (820. – 830.). Udane žene obično su pokrivala glavu velom ili nečim sličnim. Ne znamo jesu li i avarske žene slijedile opisane odjevne stilske karakteristike.

### Odjeća ili pokrov u dječjem grobu

Komad tkanine nađen je također i u grobu 10 u kojem je ukopano malo djeteta. Djeteta je bilo staro između 0 i 5 godina, a u grobu su na području

### Garments in female graves

There exists only one case of a textile fragment in the grave of a woman that can be identified as part of clothing. In grave 9, a 20–35 year old woman was buried; in addition to other items she also had 2 breast clasps under her chin. The clasp PN 87 was situated upside down in the grave and on the face side there was a medium fine tabby attached. From this item it is visible that this cloth with a flat and even surface presumably was of a “natural white” colour when it was put in the grave. The position of the clasp and the textile on it indicates that the fabric was a part of the garment worn on the upper body. We do not know exactly what the garments of Avar women looked like because the few Avar representations that exist usually depict men. In the Early Middle Ages in Central Europe, of which there exist numerous iconographic and written sources.<sup>31</sup> The “common” garment in the 8<sup>th</sup> and 9<sup>th</sup> centuries AD was a longer tunic, sometimes worn with a mantle, as depicted on the “Psalter of Stuttgart” (AD 820–830). Married women usually covered their head with a veil or a similar covering. It is unknown whether Avar women also followed the described fashion trends.

### Garment or shroud in a child's grave

A textile fragment was also found in grave 10, where a small child was buried. The child was only 0–5 years old, but the grave contained bronze belt items, in the stomach region, similar to those of male adults. Next to the hips, the iron ring PN 200 with attached textiles was identified. Such a ring was normally used to fix an iron knife to the belt. The medium fine tabby fabric found there was folded or gathered, and at least two layers can be observed.

We do not know if the belt was worn by the small child or if it was laid down over the buried person as a grave good – a marker of a high status. The textile attached might have belonged to a garment – if so, then it should be viewed as analogous to the other “belted garments”. But it could have also been a shroud that was used to cover the child.

<sup>31</sup> Müller 2003, 96–97.

<sup>31</sup> Müller 2003, 96–97.

trbuha nađeni brončani dijelovi pojasne garniture slični onima kod odraslih muškaraca. Uz kuk je nađena i željezna alka PN 200, povezana s tkaninom. Takva se alka u principu koristila za vješanje noža s pojasa. Srednje fino tkanje nađeno na alci bilo je presavijeno ili skupljeno, a uočena su najmanje dva sloja.

Ne znamo je li dijete uistinu nosilo pojasnu garnituru ili je ona u grob položena kao grobni prilog – oznaka višeg statusa. Povezana tkanina možda pripada odjeći, a tada je treba promatrati u analogiji s ostalom opojasnom odjećom. Osim toga, moguće je da se radi o mrtvačkom pokrovu koji je pokrivaio dijete.

### Umotavanje predmeta ili mrtvački pokrov?

Tkanina na nožu PN 707 iz groba 58 jasno se može sagledati u ritualnom kontekstu. Nož je smješten je uz desni kuk muškarca starosti od 35 do 50 godina, a srednje gruba tkanina prekriva oko 50 % oštrice noža s nitima usmjerenima paralelno s oštricom noža. Moguće je da se radi o slučaju kada tkanina povezana s nožem pripada odjeći ovog dijela tijela ili da je tkanina dio mrtvačkog pokrova koji je pokrivaio pokojnika i njegove priloge, ali vjerojatnije je da je sam nož bio prekriven ili omotan tkaninom.

Takav običaj poznat je u srednjoj Europi još od prapovijesti i predstavlja poseban pogrebni ritual. Uz mrtvačke pokrove, umotane urne za kremaciju i te u tkaninu umotane ostatke s lomače, uočeni su i specifični omatani objekti poput oružja i kola koji su bili pažljivo prekriveni tkaninom prije polaganja u ukop. Objašnjenja vezana uz ove običaje su višestruka su.<sup>32</sup> Moguće je razmišljati o zaštiti tih predmeta, a možda je umotavanje bilo namijenjeno tome da njihov sadržaj bude vidljiv ili nevidljiv. Postoji i sugestija da je čin umotavanja bio sredstvo crtanja granica između živih i mrtvih ili način komunikacije između živih i mrtvih.

### ZAKLJUČAK

Nalazi tkanina iz Nuštra pripadaju vrlo jednostavnim oblicima, slično ostalim tkaninama poznati-

### Wrapping items or shroud?

The textile on knife PN 707 from grave 58 clearly can be viewed in a ritual context. It is situated next to the right hip of a 35–50 year old man, and the medium coarse tabby fabric covers about 50% of the knife blade with a thread direction parallel to the edges of the blade. It might be the case that the textile attached to the knife blade belonged to a garment which was situated in this region of the body, or that the fabric was a part of a shroud that covered the deceased and his grave goods; but it is more likely that the knife itself was covered or wrapped by the cloth.

Such a habit has been recorded in Central Europe since prehistory and is the expression of specific burial rites. In addition to funeral shrouds, wrapped cremation urns, and cloth-wrapped cremation bundles, specific wrapped objects such as weapons and wagons that were carefully covered in fabric before being laid in the burial have also been found. There are many possible explanations for this custom.<sup>32</sup> Perhaps the wrapping was intended to protect the items inside, or to make the contents invisible. The suggestion also exists that the act of wrapping may have been either a means of drawing boundaries between the living and the dead, or a way of establishing communication between the living and the dead.

### CONCLUSION

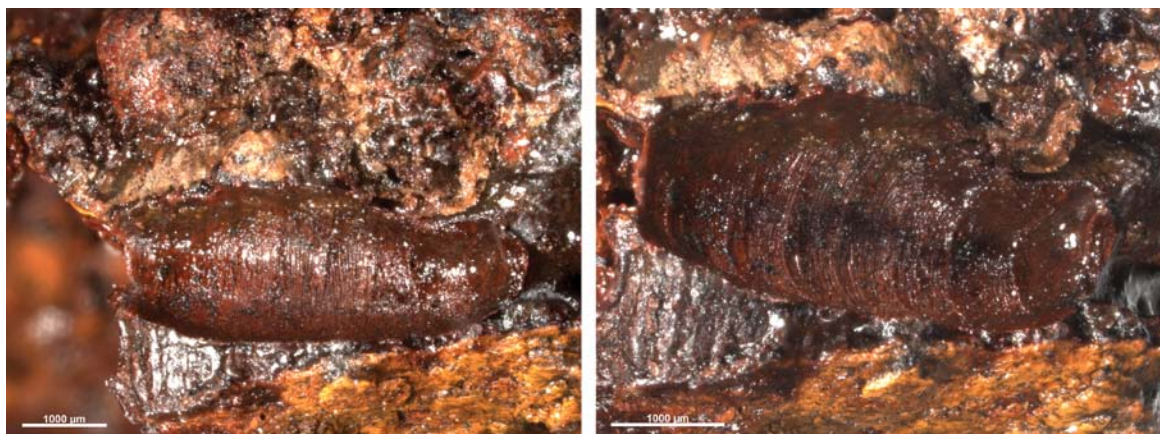
The textile finds from Nuštar are of a very simple kind, similar to other fabrics discovered in the western Avar region (i.e. Eastern Austria, Western Hungary) that date back to the 7<sup>th</sup> till 9<sup>th</sup> centuries AD. These finds are dominated by tabby and z-spun yarns. If we compare this situation with contemporary Central Europe (extensive research is being carried out in Southern Germany and Switzerland),<sup>33</sup> there is a huge difference. The “textile culture” known from the Merovingian graves is much more complex and of a higher quality. The reason why such simple fabrics can be found in Avar graves is difficult to determine.

<sup>32</sup> Usporedi Banck-Burgess 2012; Gleba 2014; Grömer, Müller 2008.

<sup>32</sup> Compare Banck-Burgess 2012; Gleba 2014; Grömer, Müller 2008.

<sup>33</sup> E.g. Nowak-Böck 2010; Peek 2013; Rast-Eicher 2002.





Sl. / Fig. 9: *Diptera pupa* na PN 423. Svjetlosni mikroskop / *Diptera pupa* on PN 423. Light microscope (autorica / author A. Rudelics, 2014.)

ma s područja avarskog zapadnog prostora (istočna Austrija, zapadna Mađarska) u 8. i 9. stoljeću. Tkanja koja tamo prevladavaju prediva su predena u Z-smjeru. Ako ovu sliku usporedimo sa srednjom Europom iz istoga vremena (opsežna istraživanja vrše se u južnoj Njemačkoj i Švicarskoj),<sup>33</sup> postoji velika razlika. Kultura tkanina poznata iz merovinških grobova puno je složenija i kvalitetnija. Razlog zašto u avarskim grobovima nalazimo takve jednostavne tkanine teško je odrediti.

Iz mikrostratigrafskog *in situ* položaja predmeta mogu se odrediti različite namjene tkanine. Ostaci opojasane odjeće (kaftana) i možda hlača nađeni su u muškim grobovima, dok je neka vrsta gornje odjeće nađena u ženskom grobu. Dio odjeće možda potječe i iz dječjeg groba. U ovim je nalazima kvaliteta tkanine odjeće jako slična.

U preostalim se slučajevima čini da je tkanina korištena za umotavanje ili prekrivanje predmeta u grobu, npr. noža.

Kao zanimljivost ističemo da su na predici PN 423 osim ostataka tkanine i kože uočeni i identificirani entomološki ostatci. Na predici je nađena larva muhe (*diptera pupa*) (sl. 9). Moguće je da se radi o jednoj od muha (npr. muha mesara, zujara, muhe lešinarka) koje preferiraju vlažna trupla za hranjenje svojeg potomstva (larvi). One su jedan od čimbenika zbog kojih tijelo trune.<sup>34</sup>

From the microstratigraphy and *in situ* position of the items, different functions of the textiles could be identified. The remains of belted garments (“kaftans”) and perhaps trousers were found in male graves, while some kind of upper garment was found in the female grave. The grave of the child may also contain fragments of clothing. In each of these cases, the cloth quality of the garments is very similar.

In other cases, it appears that textiles were used for wrapping or covering items in the grave, e.g. a knife.

As a curiosity, let us note that not only textile and leather remains were attached to the belt buckle PN 423, but also entomological remains, as a fly larva (*diptera pupa*) was found on the buckle (Fig. 9). This could be one of the species of fly (e.g. flesh flies, blow flies or coffin flies) that prefer a moist corpse for their offspring (maggots) to feed on. They represent one of the factors that are responsible for the decay of the body.<sup>34</sup>

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<sup>33</sup> Npr. Nowak-Böck 2010; Peek 2013; Rast-Eicher 2002.

<sup>34</sup> Schoenen 2013.

<sup>34</sup> Schoenen 2013.



## Zahvale

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Crteži: Miljenka Galić

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Entomološki ostatci: Sabine Gaal, Drugi zoološki odjel, Prirodoslovni muzej Beč

Za mikrostratigrafiju koristili smo sustav mapiranja Bavarskog državnog konzervatorskog ureda (Vidi: <http://www.blfd.bayern.de/medien/kartierungssystemorganik-erlaeuterung.pdf> (31.12.2014.))

Photos: Hrvatski restauratorski zavod

Object drawings: Miljenka Galić

Micro-Stratigraphy and Microphotos: Angelika Rudelics, University Vienna

Leather analysis: Gabriela Popa, OREA – Academy of Sciences in Vienna

Entomological remains: Sabine Gaal, 2nd Zoological Department, Natural History Museum Vienna

For the micro-stratigraphy we used the mapping system of the Bayerisches Landesamt für Denkmalpflege. See: <http://www.blfd.bayern.de/medien/kartierungssystemorganik-erlaeuterung.pdf> (31.12.2014.)

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Tabla / Plate 1: Nalaz PN 87/Grob 9: 1 – plan groba, fotografija detalja, 2 – spojka s detaljem, svjetlosni mikroskop / Find Nr. PN 87/Grave 9: 1 – grave plan and detail photo, 2 – clasp with detail, light microscopy (1 – Arhiva GMV / Vinkovci Municipal Museum Archive, 2 – snimila / photo by A. Rudelics, 2014.)



Tabla / Plate 2: Nalaz PN 200/Grob 10: 1 – plan groba, fotografija detalja, 2–3 – alka s detaljem, svjetlosni mikroskop, DinoLite mikroskop, 4 – SEM, vlakna / Find Nr. PN 200/Grave 10:1 – grave plan and detail photo, 2–3 – ring with detail, light microscopy, DinoLite microscope, 4 – SEM, fibres (1 – Arhiva GMV / Vinkovci Municipal Museum Archive, 2–3 – snimila / photo by K. Grömer, 2014., 4 – snimio / photo by A. Kroh, 2014.)



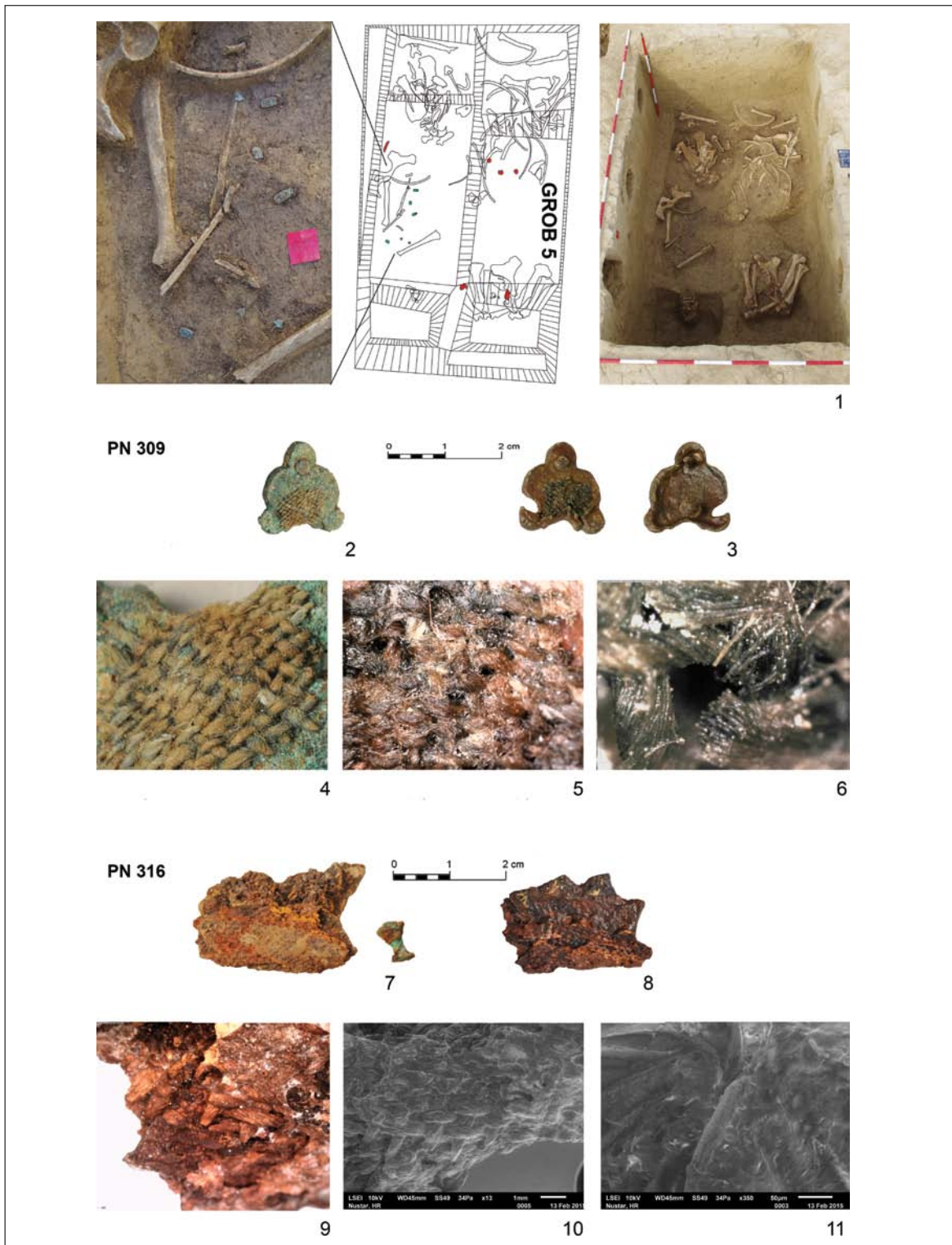


Tabla / Plate 3: Nalaz PN 309 i 316/Grob 5: 1 – plan groba, fotografija detalja, 2–6 – pojasni okov PN 309 (2, 4 prije restauracije; 3, 5, 6 poslije restauracije), detalji DinoLite mikroskop, 7–11 – željezni predmet PN 316 (7 prije restauracije, 8 poslije restauracije, 9 tkanina DinoLite mikroskop, 10–11 SEM, tkanina i vlakna) / Find Nr. PN 309 and 316/Grave 5: 1 – grave plan and detail photo, 2–6 – belt fitting PN 309 (2, 4 before restoration; 3, 5, 6 after restoration), details DinoLite microscope, 7–11 – iron object PN 316 (7 before restoration, 8 after restoration, 9 fabric DinoLite microscope, 10–11 SEM, fabric and fibres) (1 – Arhiva GMVkc / Vinkovci Municipal Museum Archive, 2–4, 7–8 – Arhiva HRZ / Croatian Conservation Institute Archive, 5–6, 9 – snimila / photo by K. Grömer, 2014., 10–11 – snimio / photo by A. Kroh, 2014.)

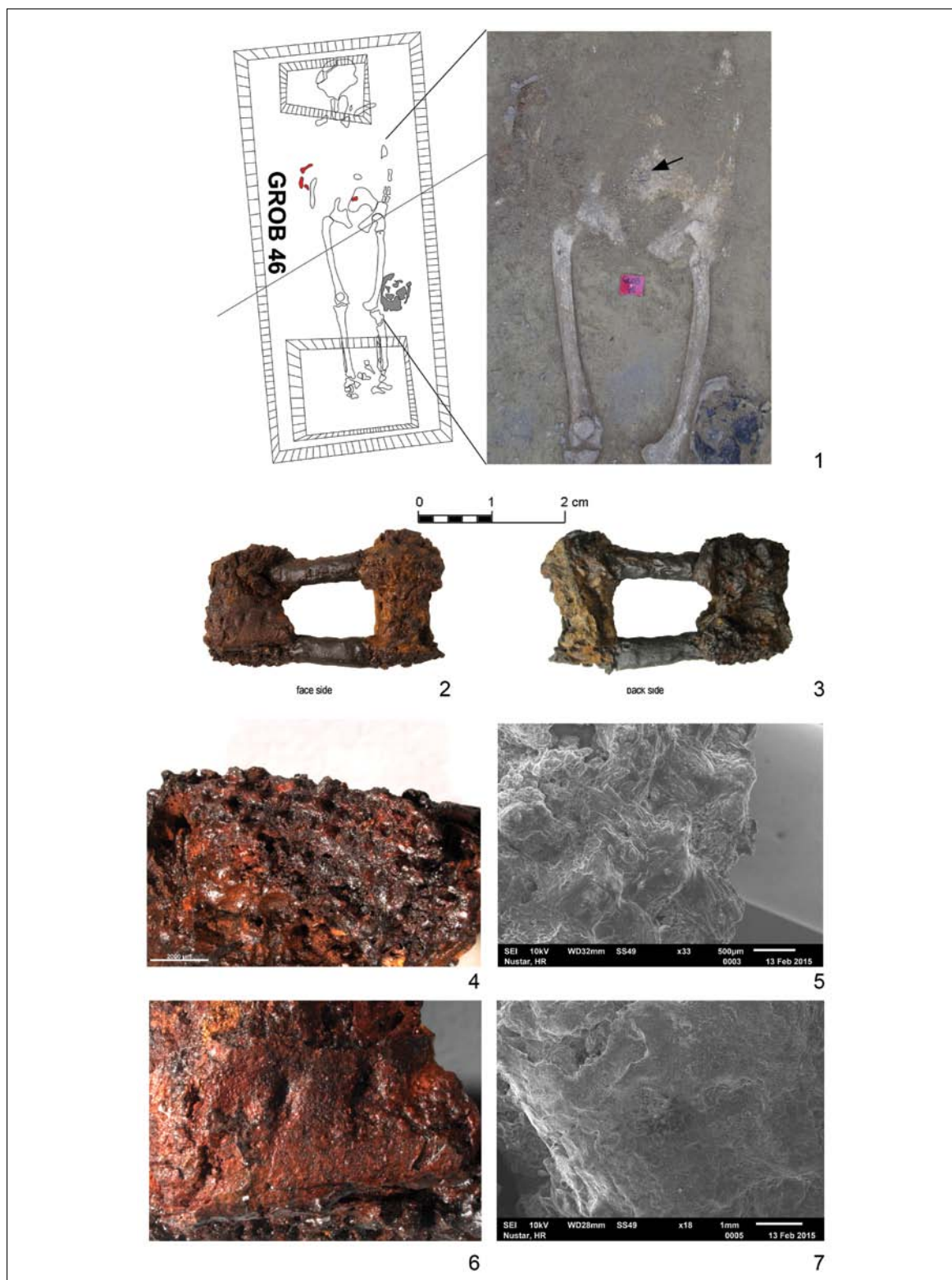


Tabla / Plate 4: Nalaz PN 423/Grob 46: 1 – plan groba, fotografija detalja, 2–3 – predica, prednja i stražnja strana, 4–5 – grublja tkanina 423–1, svjetlosni mikroskop i SEM, 6–7 – žigosana koža, svjetlosni mikroskop i SEM / Find Nr. PN 423/Grave 46: 1 – grave plan and detail photo, 2–3 – belt buckle, face and back side, 4–5 – coarser textile 423–1, light microscope and SEM, 6–7 – stamped leather, light microscope and SEM (1 – Arhiva GMVkc / Vinkovci Municipal Museum Archive, 2–3 – snimila / photo by K. Grömer, 2014., 4, 6 – snimila / photo by A. Rudelics, 2014., 5, 7 – snimio / photo by A. Kroh, 2014.)



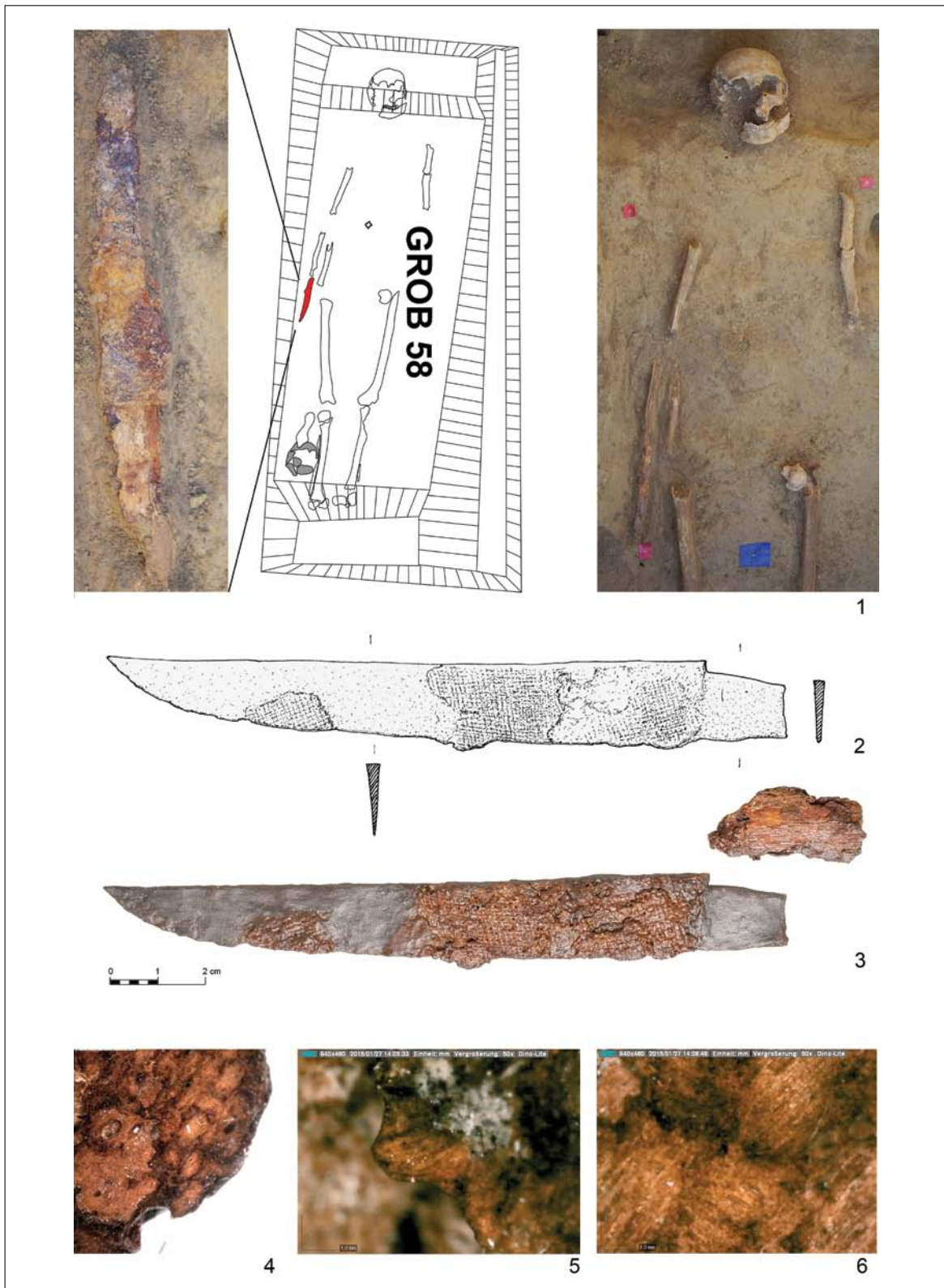


Tabla / Plate 5: Nalaz PN 707/Grob 58: 1 – plan groba, fotografija detalja, 2–3 – crtež i fotografija noža, 4–6 – detalji tkanine, DinoLite mikroskop / Find Nr. PN 707/Grave 58: 1 – grave plan and detail photos, 2–3 – knife with drawing, 4–6 – details of the textile, DinoLite microscope (1 – Arhiva GMVK / Vinkovci Municipal Museum Archive, 2 – crtež / drawing by M. Galić, 2013., 3 – Arhiva HRZ / Croatian Conservation Institute Archive, 4–6 – snimila / photo by K. Grömer, 2014.)

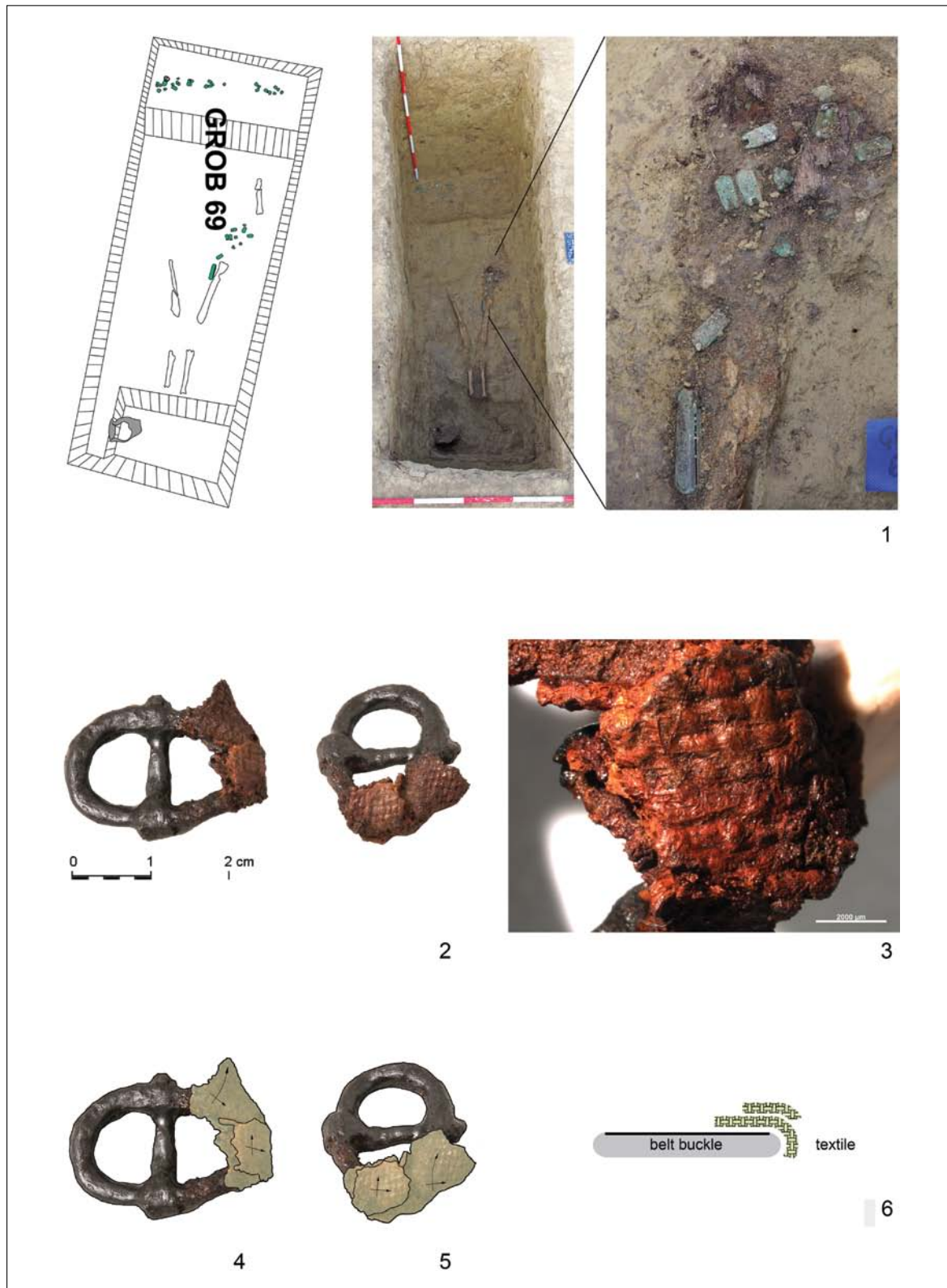


Tabla / Plate 6: Nalaz PN 815/Grob 69: 1 – plan groba, fotografija detalja, 2 – predica, stražnja strana i pogled s boka, 3 – detalj tkanine, svjetlosni mikroskop, 4–5 – mapiranje slojeva tkanine, 6 – mikro-stratigrafija / Find Nr. PN 815/Grave 69: 1 – grave plan and detail photos, 2 – belt buckle, back side and side view, 3 – detail textile, light microscope, 4–5 – mapping of textile layers, 6 – micro-stratigraphy (1 – Arhiva GMV k / Vinkovci Municipal Museum Archive, 2 – snimila / photo by K. Grömer, 2014., 3–6 – snimila / photo by A. Rudelics, 2014.)



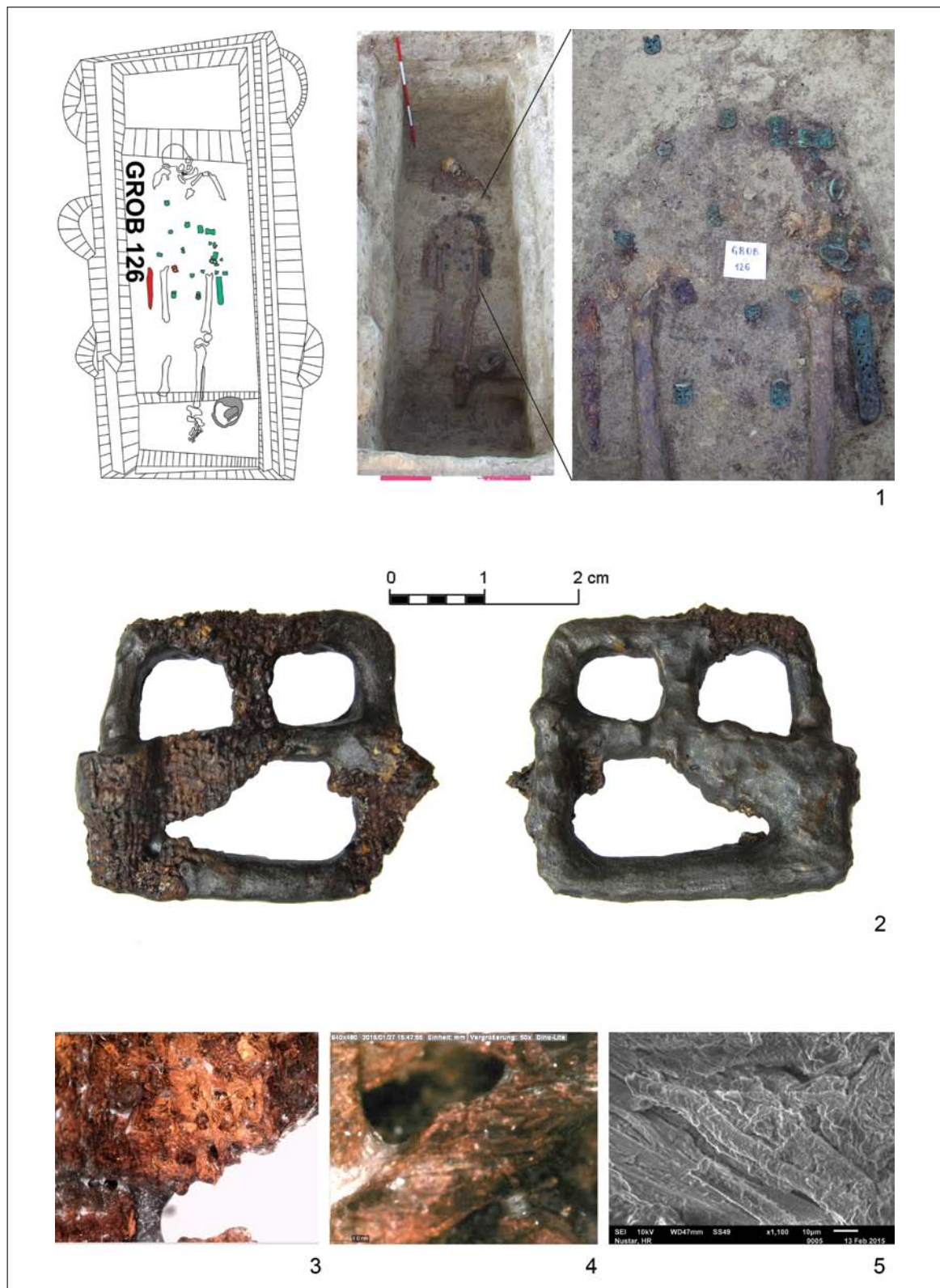


Tabla / Plate 7: Nalaz PN 975/Grob 126: 1 – plan groba, fotografija detalja, 2 – predica, prednja i stražnja strana, 3–4 – detalji tkanine, DinoLite mikroskop, 5 – vlakna, SEM / Find Nr. PN 975/Grave 126: 1 – grave plan and detail photos, 2 – belt buckle, back and face side, 3–4 – fabric details, DinoLite microscope, 5 – fibres, SEM (1 – Arhiva GMV k / Vinkovci Municipal Museum Archive, 2–4 – snimila / photo by K. Grömer, 2014., 5 – snimio / photo by A. Kroh, 2014.)

