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Source / Izvornik: **Tekstil : časopis za tekstilnu tehnologiju i konfekciju, 2013, 62, 112 - 121**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

Permanent link / Trajna poveznica: <https://um.nsk.hr/um:nbn:hr:201:551752>

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Download date / Datum preuzimanja: **2025-01-23**



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## Application of metal threads in Croatia from the 11<sup>th</sup> to the 20<sup>th</sup> century

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 Received January 3, 2013

UDK 677.53.091  
 Original scientific paper

*Research was performed about metal threads incorporated into textile yarn in Croatia on liturgical vestments and the festive folk costumes. Primarily metal threads were abundant and frequently used on liturgical vestments giving all the splendor and grandeur to the clothes which were worn during the celebration of the mass. The oldest example from liturgical vestments with metal threads is Ladislav's mantle from the 11<sup>th</sup> century, stored in the treasury of Zagreb Cathedral. Folk costumes decorated with metal threads were applied in the 19<sup>th</sup> and the 20<sup>th</sup> century. It was used for festive occasions such as holidays, weddings and other celebrations. Metal threads were used on different parts of costumes in different amounts depending on the region. This paper deals with Adriatic, Dinaric, Pannonian and varoš (varosh - a type of a small town in Europe) costume decorated with metal threads. The richest and the most luxurious folk costumes were in Pannonian region showing welfare and power of those who dressed it. Slavonian embroidery is widely known, among which the most precious are the expensive gold embroidery techniques.*

**Key words:** Croatia, metal threads, folk costumes, liturgical vestments

### 1. Introduction

Sterling threads (Croatian "srma") are textile yarns in which metal threads are used for decoration in festive folk costumes and liturgical vestments. They can be found, as particularly beautiful decorations, in the Alka uniforms, guild flags and other festive textile items. It was applied in textiles in the era of the Croatian kingdom as indicated by findings in Croatian graves [1]. They are used in two basic forms: as independent metal threads and yarns created from a metal, or even two metal threads with a textile yarn.

Combined textile metallic yarn is made of metal threads, or just one metal thread, spiral wrapped around the textile yarn that is thus found in the center as the core- of the yarn. Textile yarn is mostly made of silk or linen, but sometimes it can be made of wool or cotton. Metal thread was primarily made of gold, silver or copper alloy, but in the recent times, aluminum is mostly used. Aluminum has a silver shine that can replace and imitate silver and after a special procedure can even get a gold color [1]. Textiles containing metal threads are inevitable items of cultural, social

and religious life. They represent something festive, expensive and worth of respect, they also have a special glow. Items decorated with metal threads were primarily hand-made; less often, they were made using a machine. They are used even today, in the military, as shoulder straps and lower parts of sleeves for tagging the rank. Today, Ledal company sells more than a half million kilos of metallic yarn per year, which is used to produce clothes and decorative fabrics [2]. Croatian company Čateks produces fabrics with inox threads for

work-wear Inox is noncorrosive steel, resistant to all weather conditions, so the fabric with inox threads can be used for working conditions that have a risk of static electricity discharge [3].

Regardless of the high reputation of metal threads in textile products, a systematic study of their applications in the entire Croatian heritage has not been performed thus far. This manuscript deals with a research of application of metal threads in Croatia based on a study of publications, papers, books and catalogues, as well as museums, treasury, exhibitions and restoration departments.

## 2. Metal threads on folk costumes

Folk costumes are the traditional clothes worn by people, mostly non urban population for protection and decoration of the body. It is also an expression of regional and social affiliation and connection with the tradition of a particular region. Croatian folk costumes are distinguished by exceptional diversity, abundance of elements and details depending on the regional, geographic and climatic characteristics as well as related lifestyle and social relations.

Basic types of Croatian folk costumes are; Adriatic, Dinaric and Pannonia costumes.

Different types overlap and mix in certain areas, especially the Adriatic

and Dinaric costumes, which are quite similar in many aspects. It should be noted that the costumes which are designed for everyday use and the working day were very simple and almost without decorations: in particular, metal threads were rarely used. However, festive holiday costumes and especially costumes worn only for special ceremonial occasions, such as weddings and other celebrations were extraordinary beautiful [4]. A specific form of material heritage was created at the transition of the rural and urban expressions; these are varoš-style folk costumes. They are found in suburbs of old towns on the Adriatic, but also in small towns where landowners lived together with merchants and craftsmen [5].

### 2.1. Adriatic folk costumes

Adriatic female folk costumes comprised cotton inner clothes and woolen outer clothes. Inner clothes comprised cotton shirts, tight vests, underskirts and inner trousers. The upper clothes comprised of pleated skirts, short jackets, neck scarfs that were worn around the neck and crossed on chest, aprons and head-gears in the form of neck scarfs. Women's costumes had metal threads in ceremonial costumes, but only on the neck scarves, which had sewn gold threads and tiny metal rings, as shown in Fig.1. Little bags were

carried with bride's costumes that had sewn metal threads and tiny metal rings, but they could also be carried with men's festive attires, as shown in Fig.2 [6].

Costumes presented in Fig.1 and 2 are from Ethnographic Museum in Dubrovnik, and the pictures are taken from the book "Kako ti stoji u škrinji, tako stoji i na tebi", from „National costumes Dubrovnik littoral" which is a part of the holdings of the Ethnographic Museum of Dubrovnik, 2011. In area of Konavli, women wear festive red hats decorated with a gold metal thread at the edge [7].

"Zalistavci" as independent items appear in the north Dalmatian littoral, they are placed over a shirt, over the breast region. They consist of different colored pieces of fabric with ribbons decorated with metal threads [8].

Men's costumes from the Adriatic region have an impact of the civil cut as well as many elements of the Dinaric style. The main parts of a costume are a shirt and pants, over which belt of wool is worn, and over the shirt, vest and jacket are worn.

On the most festive occasions, leather belts were placed around the waist that had several partitions, and were used to store a variety of items such as knives, bags for tobacco or for money [9]. Men's costumes have multiple applications of metal threads: on the pants, vest and jacket. Metal silver and gold threads are most com-



Fig.1 Bride costume, Adriatic type, Dubrovnik coast, beg. 20<sup>th</sup> century



Fig.2 Men's festive costume, Dubrovnik coast, late 19<sup>th</sup> century



Fig.3 Men's knee socks, Popovici, Konavle, in 1957. (photo K.Šimić)

monly found on the vests, and the decoration was made in a technique called "tersian embroidery". Wedding costume contains two vests and both are decorated with metal threads. Metal threads are applied on the Adriatic costumes also as an integral part of men's socks: these are found in the Ethnographic Museum "Rupe", in Dubrovnik and Zagreb Ethnographic Museum where they were photographed and shown in Fig.3.

## 2.2. Dinaric folk costumes

Shirts have an important place in female Dinaric costumes as a part of outer clothes. Shirt, belt and apron are the only clothes during a summer. Due to its basic function of clothes, shirt is abundantly decorated with embroidery on chest, neck area, the sleeves and bottom edge. Winter clothes have two extra wool parts, long winter dress open front, and a vest of various lengths. White wool was used to create girls' dresses and it was called "bjelača". Dark blue wool was used for married women dress and it was called "modrina" [10]. Female Dinaric costume has tersian embroidery with metal threads, usually applied to the vest, called "jačerma", Fig.4. Bride costume, shown in Fig.5, has silver and gold plated metal threads on shirt, coat and waistcoat. Fig.4 and 5 are photographed in the Ethnographic Museum "Rupe" in Dubrovnik.

Woolen aprons are sometimes additionally decorated with silver metal thread strips, while narrow female belt has the front side decorated with metal thread stripes [6]. For

festive occasions, women wore red caps on the middle of their heads.

The caps were made from red wool, decorated with woolen embroidery, metal thread stripes, silver coins and obligatory tinsel sliver threads on the top [8].

Men's costumes had woolen vest on top of the cotton shirts, which overlapped in the front. On ceremonial occasions, men wore another vest called "jačerma", which also exists in the folk costumes of the Adriatic, and is abundantly decorated with silver or gold-plated metals. Woolen trousers were usually dyed dark blue, and around the waists a very long belt was worn [10]. Men's costumes often had metal thread stripes with gold coloration. This occurred most commonly on festive vests, and less commonly on short coats.

## 2.3. Pannonian folk costumes

Pannonian costumes differ from each other because of the large area they occurred over, and depending on the



Fig.4 Women's vest with "tersian" embroidery, Jačerma" Konavle, 19<sup>th</sup> century (photo K.Šimić)

part of the Croatia in which they were located.

Women's and men's clothes are characterized by a number of different cotton clothes manufactured in their own homes. Homemade clothes were decorated with lot of effort and personal creations, which is mostly seen in the produced fabrics and embroidered pieces. In north-west central Croatia, basic women's clothes consisted of a skirt, blouse and an apron. The basic clothes also comprise belt of reddish wool and vest, which can be shorter or longer. Men's costumes consisted of trousers, shirt and vest. It is interesting that in this part of Croatia, metal threads have not been applied on costumes.

In the lowlands of Croatia, peasants were wealthier than the rest of their compatriots, so they expressed their well-being in clothes. Costumes consisted of a large number of sets for special occasions, abundantly decorated with weaving and embroidery, and especially beautifully by embroidery with gold wire. Holiday shirts of women's Pannonia costumes were decorated in the chest area and on the sleeves with rich gold embroidery. Gold embroidered shirts were aligned with other clothing parts, apron, neck scarf and pommel, which are also decorated with golden embroidery. It is interesting that men wore plush sandals on the feet which were also embroidered with gold.



Fig.5 Bride Dinaric costume, Ošilje, mid-19<sup>th</sup> century (photo K.Šimić)



Fig.6 The most festive costumes: a) and b) the most festive female costume, Slavonia, c) the most solemn male costume, near Vinkovci

The most solemn female costumes in Đakovo, Vinkovci and Srijem were richly decorated with gold embroidery all over, as seen in Fig.6a and 6b. Men's costumes in Slavonia, as well as women, are characterized by a rich gold embroidery: it decorated the chest part of shirt, so called "prse", trousers, and a vest of black atlas. Gold and silver stripes called "gajtani" decorated a long coat of wool. Fig. 6a shows a female costume from the permanent exhibition of the Ethnographic Museum Zagreb, while Figs 6b and 6c are taken from the book of Croatian folk costumes.

Women's costumes from around Slavonski Brod especially stand out due to the checkered pattern woven on the apron, with thin dark wool and silver wire [11].

In Posavina, the application of metal threads is found only on the so-called "poculicama" which are women's caps, and in Podravina, where women pommels have tiny metal rings. In contrast, in Baranja only decoration of "šare" (that is women's belt), with gold or silver metal thread has been observed.

#### 2.4. Varoš folk costumes

Name Varoška costume comes from Varoš (small town). Within the varoška costumes category belong, among others, festive Split costumes and so-called "alkaruša", women costume from wealthy Sinj families. Among the ceremonial Split costumes

particularly stand out neck scarfs, decorated with embroidery of gold wires and pearls. Varoška costumes from Zadar and Split are shown in Fig.7 and 8 [12,13].

Costume "Alkaruša" with special materials and careful production differs from the usual rural costumes. Construction patterns and function of components as well as their names, still reflect the traditional forms of rural costumes. Expensive and luxurious materials from which entire costumes were made gave them a sophisticated urban expression of European folk scene from 19<sup>th</sup> century.

Inner clothes of a costume consisted of a shirt and an underskirt. The upper part of the costume (plastron) is a yellowish tulle collar, richly embroidered with gold metal thread and silk, placed on the chest and neck, and buttoned with gilded buttons.



Fig.7 Festive folk costume, Zadar, 2<sup>nd</sup> half of the 19<sup>th</sup> century

Over the plastron, a vest is worn, tailored with silk brocade, embroidered with colorful flower motifs, while a thin ribbon of silk tightens the vest on the waist. Over the underskirt, skirt from thin pleated silk is worn, and it complements the light yellow transparent apron embroidered with thin silk thread. Alkaruša's waist is emphasized with a belt that comprises two metal thread strips. Dolama is worn on top: it is a long-sleeved tunic that is made of fine dark blue čoha (duffel). Supplement to luxury costumes are white gloves and a triangular neck scarf, decorated with a silver ribbon and a lace of white thread [5].

#### 3. Application of metal threads on liturgical vestments

Liturgical vestments, used for various church ceremonies reaches far into the past, from the very beginning of the existence of the Church. During the first four centuries liturgical ministers did not have special clothes for religious ceremonies.

After Christianity in the 4<sup>th</sup> century became the official religion, conditions have been created for the development of special liturgical vestments, which consists of upper and lower garments. The interest of experts in the field of art in Textile focused mainly on outerwear especially on the chasuble, dalmatic, cloak, stole, miter or liturgical hat. From equipment of chalice stands out velum or cover for chalice, which is



Fig.8 Varoška costume (Split)

very often richly decorated with gold threads, and the front has embroidered cross.

Applied textiles are almost exclusively made using silk fabric with motifs that were developed and changed according to the dictates of stylistic canons from certain period [14]. To create church textiles were used fabrics that are specially woven for this purpose, while rarely were used fabric for secular clothes. By the end of the 17<sup>th</sup> century. Italy was a leader in the production of silk fabrics in Europe.

After that production had expanded to other European countries, and in the late 17<sup>th</sup> and in the 18<sup>th</sup> century stand out weaving mill in England and France (Lyon), and later in Austria (Vienna). To create one set of church vestments sometimes were used only one type of fabric, sometimes a combination of one type of fabric in two colors and sometimes two different types of fabric. It is also often the case that is for one part used a simple fabric, and for the second part of the same church textiles used luxury fabric, embroidered with colorful silk and metal thread [15].

Today, the old liturgical vestments are generally no longer in use and have become part of the religious heritage. However, for festive ceremonies it can be used today, but only

the representative. The chasubles have been mostly preserved while dalmatics and cloaks in much smaller numbers, because the chasuble are smaller size so easier to preserve from degradation [14].

### 3.1. Liturgical vestments and church textiles in the Treasury of the Zagreb cathedral

Treasury of the Zagreb cathedral preserves valuable fund of church or liturgical vestments through all the long centuries of its existence. The oldest item, "Ladislav cloak" is chasuble from distant 11<sup>th</sup> century. Chasuble, though fragmented, is uncommon work of art that speaks about the donation during the formation of the diocese in then small Zagreb. Fabric of chasubles is silk damask, dark indigo color from Byzantium. Figural flatbed embroidery of gilded silver thread and silk is from Bavaria, Fig. 9 [16].

The Treasury has no preserved items from 12<sup>th</sup> and 13<sup>th</sup> century. Humeral, so called "naramenik", of a Bishop Augustin Kažotić, originated from France or Italy from around 1300. Sometimes was dressed on chasuble, and was richly decorated. Today humerals are made of canvas without decorations, and are carried under alba. It was passed to Zagreb from



Fig.9 Ladislav mantle - chasuble (detail), 11<sup>th</sup> century



Fig. 10 Chasuble, 15<sup>th</sup> century embroidery (photo from the book Treasures of the Zagreb Cathedral) (photo K.Šimić)

Lucera by Bishop Mikulić, and had a spirit of Western European Gothic style. Fabric is linen with flatbed gold embroidery, aimed to achieve the illusion of deep space with different directions of points, so-called fish bones and partial use of silver thread.

The treasury keeps chasuble of green silk damask with a red dorsal cross from 15<sup>th</sup> c. Cross is made of stripes that have embroidered Fig.s of saints in the Gothic style, Fig. 10. Fig.s of saints are embroidered in shallow relief with golden and multicolored silk threads on a crimson silk. Embroidery is work of a local craftsman from around the 1424 and damask from Italy around the 1600.

Second preserved piece from the 15<sup>th</sup> century is a miter embroidered with pearls, silk and gold thread with applications of gold-plated metal in pink velvet.

Miter is from Croatian or Austria, and restored in Vienna 1846 in neo-Gothic style. Cover from Fig.11 has a fabric of red silk, with gold and silver embroidered ornaments. In the center of Cover is monogram IHS, and in the corners are the symbols of the four evangelists, both surrounded by tiny pearls. It was a homework from 16<sup>th</sup> century, and was processed of the older parts, and hemmed with tassels of red and golden threads.

Bishop Peter Petretić invited for Wolfgang's Jacob's Stoll's from Ingolstadt, to Zagreb due to establish-

ment of embroidery workshops for male associates and assistants.

The workshop made textile items mainly for the Zagreb Cathedral, and left tremendous opus of wide stylistic range, from the late Renaissance and Mannerism to the Baroque innovation. Stoll was a teacher in Zagreb since the 1655 up to 1664 and was a specialist in figurative and ornamental, relief gold embroidery, all kinds of decorative applications, and pearl embroidery. To create expensive gold embroidery is necessary to have sufficient amount of a thin sheet metal of gold in order to produce a variety of treads for embroidery. Such as gold wire, spiral gold wire, gold strips and silk threads coated with gold stripes. His numerous works can be counted among the top embroidery European achievements. His preserved works in Zagreb consists of 7 antependium, "God grave" from the 1659, 7 cloaks, 1 chasuble, 2 miters and 1 pair of



Fig.11 Cover from 16<sup>th</sup> century (photo K.Šimić)



Fig.12 Cloak, Zagreb, 1663 (photo K.Šimić)

gloves. Many of them are kept in the treasury of the Zagreb Cathedral.

Fig.12 shows red cloak from 1663, embroidery is relief figural gold embroidery and fabric is silver and gold woven brocade. The cloak was restored in 1971, before its presentation in Paris.

After Stoll, bishop Mikulić, collected items to treasury that had the same quality and lavish embroidery.

Miter, 4 dalmatic, and chasuble have very high relief gold embroidery, derived with various types of gold and silver threads and wires covering the entire surface of the motifs of stylized flowers, leaves, and often hardly readable patterns, predominantly on the surface of white silk atlas. Conventual Mikulić festive ornat have silver and gold embroidery, large stylized floral motifs and a strong contrast because of the red background. Mikulić ornat dates from around the 1700 and consists of a chasuble, cloak, dalmatic, velum and stoles. Gold wire embroidered lines, and the entire surface of cloak has two lines, silver and gold, in the opposite direction and overlapping between the large leaves, flowers and vase motif in the middle.

The 1775 empress Maria Theresa granted Treasury precious cloth intended for her festive dresses, and built by her court ladies. Conventual ornat contains cloak, chasuble and dalmatic. From gold metal stripes are derived on pluvial longitudinal stripes and cocoons, on the chasuble central vertical surfaces, and on the dalmatic central squares. Every part of the ornat has at the bottom back of silver film, applied, gold-embroidered re-



Fig.13 Part of dalmatics, Vienna 1775 (photo K.Šimić)

cord 17 MT 75, and sewn gold ribbon.

Fig.13 shows part of dalmatic from ornate Maria Theresa, which has a white silk surface and the central part of the golden brocade.

From the period of 1787-1827 is part of the Mass ornate, which was ordered and manufactured by Bishop Maximilian Vrhovac. It consists of a chasuble, miter, velum and stola made in Croatia in the late 18th c. Chasuble has a fabric of silk damask, purple color, and embroidery of various silver stripes. By the middle of the chasuble is a pillar surrounded by embroidered relief silver ribbon, around the neck and along the edge is the narrow relief silver ribbon, as seen in Fig.14.

The first half of the 19<sup>th</sup> century in old cathedral represents beautifully embroidered chasuble from time Aleksandar Alagović (1829-1837). On the white silk satin is the net of gold ribbons, all over the surface. It can be assumed that this is the work of some quality Croatia workshop.

Bishop, later Cardinal Juraj Haulik (1837-1869) leads 1845 Sisters of Mercy in Zagreb which was important for the textiles in the treasury.

The 1877<sup>th</sup> sisters completed in Zagreb monastery miter with Fig. of the Holy Trinity, red silk, embroidered with pearls and golden threads, Fig.15.

Fig. 16 shows the white miter, another work of the Sisters of Mercy around 1900. The material is white silk, with gold and multicolored silk embroidery.



Fig.14 Chasuble, Croatia late 18<sup>th</sup> century, (photo K.Šimić)



Fig.15 Miter, 1877, the Sisters of Charity (photo from the book Treasures of the Zagreb Cathedral)



Fig.16 Miter around 1900 the Sisters of Charity (photo K. Šimić)

A large number of embroidery from church attire treasury of the monastery, go in order to achieve high quality, which is becoming a tradition, and is expanding to other convents [16].

### 3.2. Liturgical vestments at the Museum of Arts and Crafts

The oldest specimen from Croatia dates back from the late 14<sup>th</sup> century, and it is embroidered cross while the coat of arms on it, are from the second half of the 16<sup>th</sup> century. Deep red silk satin is a base, and embroidery is relief and flat golden and multi-colored embroidery on the linen cloth, Fig.17.

Type of embroidery and gilt threads are the same and linen contours underneath them mainly suits, so that probably date from the same time as cross.

The old museum inventory states that the cross came from Zadar, family Gavalla. The cross was originally at a high damaged background of red



Fig.17 Embroidery, end of the 14<sup>th</sup> century, Croatia (Photo from the liturgical vestments of the textile collection)

velvet, which was later replaced in museum with new silk sateen.

In the 15<sup>th</sup> and 16<sup>th</sup> century dominated chasuble from Italy, while some are from Austria and Germany. Croatian chasubles are not present at the Museum of Arts and Crafts. Chasubles from the first half of the 17<sup>th</sup> century are assumed to be Croatian origin, and their common characteristic is that they are modest in the selection of materials and simple in design as well as in embroidered decorative motifs.



Fig.18 Chasuble, first half 17<sup>th</sup> century (Photos from the liturgical vestments of the textile collection, Museum of Arts and Crafts)



Fig.19 Cloak (detail), Zagreb, second half 17<sup>th</sup> century, Stoll embroidery workshop

Decorative embroidery is on a white linen cloth, in several pastel shades, embroidered with so called “arab” stitch. Some of these chasubles contain the gilded ribbons, gold wire or gold-plated tiny metal rings, as well as the gold embroidery.

Fig.18 shows the chasuble from the early 17<sup>th</sup> century, with “arab” stitch embroidery on a white linen background. The entire surface of chasuble is covered with stylized flowers symmetrically arranged in vertical arrays. Horizontal layout is achieved with two identical flowers that dotted with one to the other within the vertical field bounded with narrow gilt ribbons.

The second half of the 19<sup>th</sup> century is characterized by works of embroidery workshops Wolfgang Jakob Stoll in Zagreb. Cloak from the embroidery workshops Stoll is made with “arab” stitch on a white silk background and gold embroidery, Fig. 19 shows a detail of the cloak. Bottom bordure of cloak is composed of two rows of stylized plant motifs surrounded by golden threads. Cloak was in 1899 purchased from merchant Schotten in Zagreb, and restoration was carried out 1975 since the cloak was in very poor conditions. In the 18<sup>th</sup> and 19<sup>th</sup> century dominated chasubles from France, and there are fewer from the Croatia. Those are some embroidery for chasuble from the early 18<sup>th</sup> century which has silver and gold embroidery.



Fig.20 Cover for the chalice, Croatia, 1725 Benedictine monastery of Rijeka





Fig.21 Chasuble, embroidery from the Croatian beginning of the 18<sup>th</sup> century

For example, very abundant embroidery for the chasuble from the Croatia, fabric is silk damask with lace motifs in relief and flat silver embroidery, produced by nurses from Benedictine monastery in Rijeka. As well as the cover for the chalice from 1725 which have relief and flat gold embroidery on white silk taffeta, shown in Fig.20.

Chasuble with embroidery from Croatia from the early 18<sup>th</sup> century, and fabric from Italy or France in the late 17<sup>th</sup> century is interesting because it has ribbons in the form of wide gilded lace, Fig.21 [11].

There are still a few chasubles which are assumed to be from Croatia, one is from the early 19<sup>th</sup> century, but have not metal threads and so are not subject of this paper.

### 3.3. Liturgical vestments from Ludbreg

Rich opus of liturgical vestments in the Restoration Centre Ludbreg consists mostly of chasuble, cover for



a) (photo: N. Oštarijaš, 2010.)



b) (photo: N. Oštarijaš, 2012.)

Fig.22 Chasuble, number 3.5. from Chapel of the Holy Cross in Križovljan, a) before a conservation-restoration work, b) chasuble, after the work is completed, photos are the property of the Croatian Conservation Institute



a) (photo: V. Vučković, 2005.)



b) (photo: V. Vučković, 2006.)

Fig.23 Chasuble, number 3.2. from Chapel of the Holy Cross in Križovljan, a) before a conservation-restoration work, b) chasuble, after the work is completed, photos are the property of the Croatian Conservation Institute

chalice, and other mass vestments but also civic textiles like flags [17]. Metal threads decorate, in various forms almost all textile items with glitter and interesting forms. The special value of Fig.22 and 23 from Restoration Center Ludbreg are photos before and after restoration, as indication how time damaged individual items. Chasubles, which are found in Ludbreg are not mostly made in Croatia but brought from other countries. They have many metallic threads woven into the fabric, gold or silver ribbons and lace. It is assumed to date back from the late 18<sup>th</sup> or early 19<sup>th</sup> century. Some of them come from France, Italy or Austria, while for many it is not known an origin.

In Fig.22 it is shown chasuble found in the chapel of the Holy Cross in

Križovljan which originates from Italy or Austria in the first half of the 19<sup>th</sup> c. Fabric of chasuble is warp satin, riddled with metal threads and multicolored silk threads.

Fig.23 shows another chasuble also found in the chapel of the Holy Cross in Križovljan which is native from France in the second half of the 18<sup>th</sup> century [15]. Chasuble has a fabric of colorful silk rep in the middle and yellow silk ribs on the lateral parts, with lace of silvered metal threads. Fig.24 shows the detail of the lace with silvered metal threads which is located on the edges of the chasuble, but also surrounds the central part of the chasuble.

Besides the chasuble, the most common liturgical vestments are surplices which have the edges decorated with twisted tassels, containing metal threads, while metal strips are embroidered into the fabric.



Fig.24 Detail of lace with silvered metal threads, after repair damage (Photo: V. Vučković, 2006) Photo is the property of the Croatian Conservation Institute



a) (photo: N.Vasić, 2006.)



b) (photo: J. Kliska, 2010.)

Fig.25 Flag: a) before conservation and restoration works; b) after work is completed, photos are the property of the Croatian Conservation Institute

Festive red boots particularly aroused an interest, which are probably used for liturgical purposes, interwoven with metallic threads and decorated with gold ribbons. Such a liturgical textile item, which stood out with variety of decorating metal threads was not found anywhere. It is not exactly known for what purpose they served in the liturgy.

In Ludbreg we also found and a pad from Skradin, which was also used for liturgical purposes, and is abundant in relief embroidery of metallic threads.

From civil textiles it was found a Guild flag, combs, soap manufacturers, ropers, bakers, honey producers, turners and shavers) from the Museum of town Koprivnica [18].

Guild flag is shown in Fig.25, originated from 1870, and its dimensions are 198.5 x 374.5 cm. Made of green silk damask and decorated with green silk ribbons with fringe, ribbons of gilded silver threads and tassels of gilt threads.

Picture of the Virgin and Child on the flag, both sides painted in oil on canvas.

Fig.26 points out detail of ribbon with gilded silver threads and metal threads in the state in which it was before the conservation and restoration works. It can be seen that the gilt strip over time oxidised and changed the color tone to darker.

Folk costumes were not found in Conservation Center, and we already know how this part of the Croatia



Fig.26 Detail of ribbon with gilded silver threads and metal threads, before the restoration (photo: V. Vučković, 2006)., Photo is the property of the Croatian Conservation Institute

does not have metal threads as decorations on costumes.

#### 4. Conclusion

Metal threads are used in folk costumes and liturgical vestments, giving the textile items special decoration. It has great cultural significance in the production of fabrics in Croatian history because it marks folk customs, festive occasions, celebrations and the general financial status and social position of those who were dressed in the clothes that it decorated. Clothes decorated with metal threads were dressed only in most festive occasions, and differs slightly depending on the areas where it was worn, like Varoška, Pannonia, Dinaric and Adriatic. Only in the liturgy, its use was slightly more common since it wanted to emphasize the importance and festive ceremony of divine service.

Following the development of making items decorated with metal threads which have been preserved today we can get some insight in artistic embroidery by hand textile production.

For folk costumes was the most important gold embroidery techniques that was most used in the inland, according to the written sources, begin of weaving with gold and silver wire dates back around in 1860.

Croatian liturgical vestments are the most significant from the period of embroidery workshops bishop Peter Petretić also called Stoll's workshop, from 1655 up to 1664. From this period are the most diverse items in Croatia and also have the most abundant embroideries with various forms of metal threads.

However, the liturgical vestments decorated with metal threads exist in the earlier period mainly from imports. In the later period, 18<sup>th</sup> century, liturgical vestments decorated with metal thread are made to a greater extent in a Benedictine monastery in Rijeka, while in the 19<sup>th</sup> century are also made in the convent of the Sisters of Mercy in Zagreb.

*For a cooperation, support, conceded exhibits and materials we especially thank to:*

- *Ethnographic Museum in Zagreb, senior curator-librarian M. Sc. Irena Kolbas, senior curator Katarina Bušić, senior curator M. Sc. Zlatko Mileusnić and Mihaela Grčević;*
- *Treasury of the Zagreb Cathedral, especially to sister Lina Plukanec*
- *Museum of Arts and Crafts in Zagreb, restorer advisors Iva Čukman;*
- *Croatian Conservation Institute and Restoration Centre Ludbreg, especially the head and conservation consultants Venija Bobnjarić-Vučković and higher technician restorers, mag.ing.techn.tex, Maja Vrtulek and mag.ing.techn.tex. Ada Vrtulek-Gerić.*
- *University of Dubrovnik, BSc. text. tech. Danijela Jemo, assistant in the Department of Art and Restoration*
- *Ethnographic Museum Dubrovnik - Museum "Rupe," the curator Svjetlana Milošević-Đerek*

Description of terms:
Alba (lat.) - the name derives from tunics, ie from inner dress that has been worn in the Roman Empire, and it is common to all liturgical officers
Antependium - it is used for covering the altar, just at the front side, from which it takes its name. (Latin antependium, ante-front + pendere-hung)
Chasuble - the last piece of liturgical vestments that a priest wears, and it is covering his chest and back
Cloak - wide mantle, it used to have a hood which covered the priest from bad weather
Dalmatic - outer clothes of Catholic priests, named after it was used to be worn in Dalmatia
Epaulette - shoulder strap - strap on a military uniform for tagging the rank or unit of the Army
Humeral - scarf placed around neck, shoulders and back
Miter - liturgical hat with two spikes, ahead and behind, and with two straps that fall down the back, denotes bishop teaching authority
Ornate - official traditional clothes for special occasion
Paraments - liturgical items and valuables, all objects that belong to the church
Stole - a narrow two-layer decorated strip of cloth, which the priest puts over his shoulder
The cover – covering for the chalice, size of about 50 x 65 cm

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