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ACTA MVSEI

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THE RESTORATION OF AN AUSTRO-HUNGARIAN OFFICER SWORD

Călin BOBIC*

Abstract: *Arms Collection of the Altemberger House; The Museum of History is an important element of the Brukenthal Museum Complex Heritage as through its' composition and age provide information about the evolution of weapons types used throughout the history of Transylvania. This paper focuses on the restoration of the Austro-Hungarian officer a sword.*

Keywords: *restoration, metal, sword*

Rezumat: *Colecția de arme a Muzeului de Istorie – Casa Altemberger reprezintă un element important al patrimoniului Complexului Muzeal Brukenthal din Sibiu deoarece prin componența și vechimea sa oferă informații despre evoluția tipurilor de arme folosite de-a lungul istoriei Transilvaniei. Lucrarea de față se axează pe procesul de restaurare a unei săbii austro – ungare de ofițer.*

Cuvinte cheie: *restaurare, metal, sabie*

The Austro-Hungarian officer sword is part of the Altemberger House-History Museum weapon collection, is dated to the late nineteenth century – beginning of the twentieth century, specifically between the years 1880-1920.

Description of the object

The sword made of steel has a slightly curved blade sharpened on one side, the length is 83 cm.

The 87 cm sheath follows the blade shape is made of tin metal reinforced with stiffening rings glued to the edge with a copper alloy.

The hilt is made from antler, is spindle-shaped, spiraled and completely encloses the blade tang.

The oval shaped guard made of brass is decorated with vegetal motifs. The pommel is mounted via a screw on the end of the sword grip, thus solidify the guard, the knuckle bow and blade (Nițoi 2007, 60).

Diagnosis

The conservation status of the subject is satisfactory, showing patchy and uneven surface deposition of corrosion products specific to iron and copper, dust and dirt clogged throughout the entire surface. Analyzing these issues we conclude

that the piece requires thorough restoration and conservation interventions.

Restoration and Conservation of the Object

Before restoration, the object was disassembled into the component parts: the sheath and blade with iron tang; antler grip; couple with the knuckle bow and the brass pommel.

The restoration includes the following technological flow differentiated for the object parts made of iron or brass.

The treatments applied on the components object made of iron (sheath and blade with tang) are:

- Cleaning with nonionic detergent Romopal OF-10 in concentration of 1%;
- Drying and degreasing with alcohol with analytical purity;
- Mechanical cleaning with rotating brush to remove corrosion products adhering to the surface of the blade, pommel and tang;
- Final polish with steel wool;
- Degreasing with alcohol of analytical purity;
- Final coating with Balistol to optimal preserve

* Brukenthal National Museum, Sibiu

(White 1995, 5).

The treatments of the pieces made of brass are:

- Cleaning with nonionic detergent Romopal OF-10 in 1% concentration;
- Degreasing by immersion in a reagent grade acetone, combined with brushing and drying;
- Cleaning with 10% concentration solution of phosphoric acid combined with intermediate brush strokes under running water until the complete disappearance of corrosion products existing on the surface of the objects (Stambolov 1985);
- Neutralization in distilled water and drying in ethyl alcohol of analytical grade;

•Balistol final coating (White 1995, 5).

The final operation is to assemble the object followed by coating the sword with silicone grease.

Conclusion

Restoration of a weapon follow a technological flow after the evaluation of conservation status and the specific characteristics of the piece. particularly the restoration of the Austro-Hungarian officer sword in terms exhibition brings added value as this makes it possible to display them to the public.

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1. Before restoration



2. Detail distribution of corrosion products



3. Sword disassembled into component



4. After restoration sword and scabbard



5. After Restoration

INADEQUATE CONSERVATION AND RESTORATION INTERVENTIONS AND THEIR EFFECTS UPON THE WOODEN SUPPORTS OF THE ROYAL DOORS BELONGING TO THE BIG ROYAL CHURCH ICONOSTASIS IN TÂRGOVIȘTE

Constantin SCĂRLĂTESCU*

Abstract: *The inadequate conservation and restoration interventions, executed on the doors from the Big Royal Church in Târgoviște iconostasis, on the wooden supports level, are among the factors that the conservation state of these elements depends on, in the present. Their identification and analysis, along with other degradation factors, determined by microclimate conditions and functional usage, help establishing the diagnostic and restoration methodology that are to be used for these items.*

Keywords: *degradation factors, intervention, conservation, restoration, analysis*

Rezumat: *Intervențiile necorespunzătoare de conservare și restaurare executate la nivelul ușilor împărătești din componența iconostasului Bisericii Mari Domnești din Târgoviște, la nivelul suporturilor de lemn, se numără printre factorii care determină starea de conservare a acestor elemente în prezent. Identificarea și analizarea acestora, împreună cu a celorlalți factori de degradare, respectiv condițiile demicroclimat și uzura funcțională, au ca rezultat diagnosticarea și stabilirea metodologiei de restaurare pentru aceste piese.*
Cuvinte cheie: *factori de degradare, intervenție, conservare, restaurare, analiză*

The iconostasis in the Big Royal Church, built by Petru Cercel between 1583 and 1585, has three rows of icons in the superior registers: the repasts, the apostles surrounding the Dysis scene, and the messianic prophets, which were replaced in the 19th century.

The royal doors present an ample version of the Annunciation, and four club shaped medallions that hold the representations of the evangelists' symbols. The sides are decorated with images representing the prophets David and Solomon. The royal doors close the main central entrance towards the altars apse (Porumb 1998, 444).

The painting inside the church in Târgoviște was executed in the Royal Courts atelier, by the team lead by the Greek painter Constantinos, head of the largest atelier situated in Hurez (Draguț 1982, 393), composed of Ioan, Ioachim and Stan.

The two doors, from the Big Royal Churches iconostasis underwent previous consolidation interventions, especially on the wooden supports level. They have been added a lining on the backside, made from new wood, applied over a dense layer

of bitumen, in 1929, according to an inscription on the back of the right door (Fig. 1).

The peculiar aspect of these two items is that, in contradistinction to the other components of the iconostasis, they underwent a complex mechanical consolidation process, which had the purpose to increase their durability.

The type of adhesive was determined after a series of solubility tests using distilled petrol hydrocarbons (toluene, xylene), volatile, water insoluble solvents, with a diminished penetration degree in porous structures (Leahu 2006, 14).

The original parts of the doors are made from linden wood (*Tilia sp.*), according to the analysis bulletin executed by expert biologist dr. Livia Bucșa. By token of the macroscopically characters, it is a soft, light, white-yellowish type of wood, with a fine and homogeneous structure (The ultimate Guide to Wood Working, 2007, 46). For the exact identification of the essences of wood, a microscopic analysis was necessary. Also, the biological tests disclosed the fact that the wooden material presents generalized xylophages insects,

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Anobium punctatum attack (Fig. 2).

The wood that was utilized to double the original, on the back, is also linden, which was subsequently integrated in a brown-greyish hue, and it doesn't have a xylophage's insects attack.

As far as the original parts of the wooden support are concerned, they have undergone substantial losses of material, especially in the upper areas (Fig. 3), due to the execution manner of the sculpted decoration, which has multiple free spaces, and also, due to the massive attack of the xylophages insects, which favoured the high frailness of the wood (Fig. 4).

The sculpted decorative elements, which constitute the frame of the painted scenes, are gilded with gold leaf, according to the analysis executed by expert engineer chemist Dr. Polixenia Popescu.

In the wake of the x-ray examinations, executed by expert physicist Cecilia Hărăstășan, a wire mesh could be observed, which has been used as reinforcement during the former consolidation process. It has been inserted in the bitumen layer, on the back of the original panels, which ensures its adhesion with the linden wood used as a lining, in order to increase the mechanical resistance of the items (Fig. 5, 6).

The losses of wooden material are due, first of all, to the excessive relative humidity inside the church, which determined the attack of the xylophages insects, and also accentuated frailness.

After the conservation and restoration interventions executed in 1929, the entire iconostasis has been reassembled in order to be displayed in situ.

As far as the two doors of the iconostasis are concerned, they have suffered supplementary degradations, a long time, due to the functional usage, which lead to the adoption of this type of consolidation operations, in order to prolong the mechanical durability. The losses of brittle wooden material are visible, especially on the extremities (Fig. 7). Besides the doubling on the backside, as one can see, on the x-ray images, but, also, visually, metallic backing has been applied, on the extremities level, with the help of screws, in the areas where wooden material was missing (Fig. 8). The restraint system of the doors, using metallic hinges, has been applied over the linden wood used to consolidate the back of the items.

All these interventions have increased considerably the weight of the two doors, which lead to supplementary tensions on the original parts level.

The doors have not undergone a structural consolidation process of the wood, before the mechanical consolidation has been executed, so that, after the application of the new linden wood on the backs, cleavages and fractures on the original elements level occurred, due to the tensions the new wood exerted.

On the upper level of the door on the left side of the iconostasis, the absence of the cross decorating the ensemble, can be observed, because it has been replaced with a cross, attached more recently, which is obviously different in style and execution.

The entire iconostasis presents accentuated signs of degradation, both on the wooden supports level, and also on the painted layers level.

Due to the excessive relative humidity, the entire ensemble has been exposed to, during the period the roof has had an aperture, the painted layers decorating the two doors have become brittle, and structural modifications on the gesso level have occurred.

On the painted surfaces, traces of bitumen can be observed, which, due to the thermal modifications and to a disinfection treatment executed with Sadolin, about six years ago, have migrated towards the painted surface. Congestions and dark coloured haloes have appeared, especially in the areas where cleavages and fractures could be observed. Also, deposits of dust and grime are visible on the entire surface.

The doors have been covered, on the painted layers level, with Japanese paper, applied with CMC (carboximethyl cellulose), an ether of cellulose, synthesis derivative, obtained from the substitution of the hydrogen atoms, from the hydroxyl groups, with alkyl radicals (Leahu 2006, 119). This intervention has been executed in view of the protection of the painted layers at the beginning of the conservation and restoration operations, which are currently deployed on the mural paintings inside the church.

The determination of the reasons these degradations occurred because of, and the analysis of their effects on the doors of the Big Royal Church, play a very important role in the selection of the following restoration methods.

The previous conservation and restoration methods, executed on the doors blazing the entrance in the apse of the altar, have permitted the continuation of the degradation mechanisms that had started before these operations, and, in addition to that,

they have created a new series of degradation factors that have produced supplementary tensions on the already brittle original elements.

In order to obtain a very accurate diagnostic, a series of investigation methods – visual, biological, chemical and physical analysis – have been carried out, which lead to the discovery of the effects of the multiple causes that contributed to the ad-

vanced degradation state the items have reached in thus far.

The numerous degradations on the wooden supports level, and, especially, the ones caused by the previous restoration interventions, raise complex problems, for these items, regarding the future restoration processes, for they are different from the ones the other components of the iconostasis in the Big Royal Church are confronted with.

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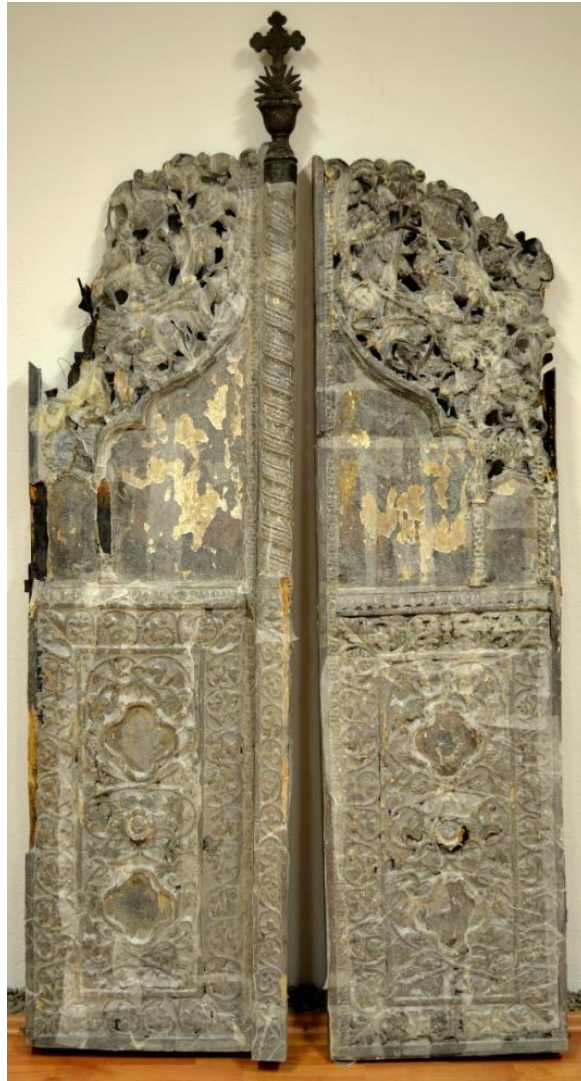
1. Dating inscription of the previous conservation and restoration intervention; detail



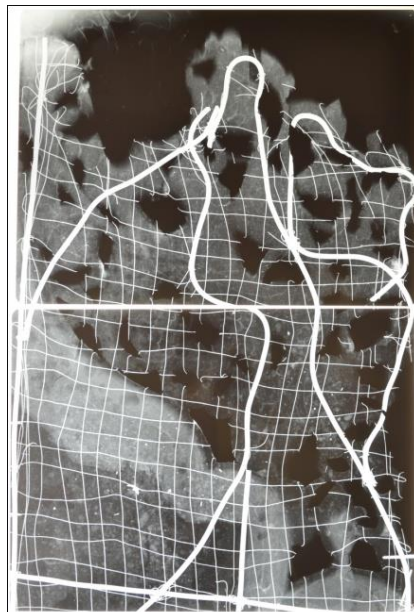
2. Traces of the xilophages insects attack; detail



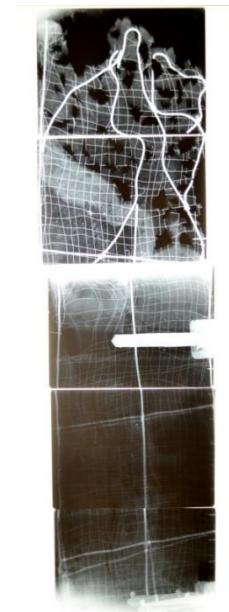
3. Losses of wooden material; detail



4. Royal Doors; before restoration



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6. Left door; x-ray



7. Losses of wooden material on the extremities; detail



8. Metallic inserts; detail



9. Lacunae on the painted layers level; detail

CONSERVATION AND RESTORATION OF ICON ON WOOD – OUR LADY OF THE SIGN

Cristina Maria DĂNEASĂ*

Abstract: *The Our Lady of the Sign icon was in a bad conservation state. Was necessary complex intervention of conservation and restoration to save icon. The piece will be integrated in the iconostasis from Dormition of the Mother of God Orthodox Church, Spiridonești village, Neamț County.*

Keywords: *Wood icon, conservation, restoration, carved gilded piece, losses part, bronze, inadequate interventions*

Rezumat: *Icoana Maica Domnului Orantă se afla într-o stare precară de conservare. Au fost necesare intervenții complexe de conservare și restaurare pentru salvarea ei. Icoana va urma să fie integrată în iconostasul Bisericii Ortodoxe Adormirea Maicii Domnului, din satul Spiridonești, județul Neamț.*

Cuvinte cheie: *icoană pe lemn, conservare, restaurare, frunze sculptate și aurite, fragmente lipsă, intervenții neadecvate*

Introduction

The Our Lady of the Sign icon is part of iconostasis from the *Dormition of the Mother of God Orthodox Church*, Spiridonești village, Neamț County. The little village is near to Siret Valley. The church was built in the first part of 19th century by aristocrat Aga Gheorghe Tulbure (www.protoieriaroman.ro). The baroque iconostasis was painted by *Anastasi zugrav* in 1836 (this date was registered on Virgin with Child Enthroned icon). The iconostasis contains icons fixed on gilded frames and other ones with vegetal carved and gilded decor. In the upper part the cross is fixed in the Our Lady of the Sign icon, which has an oval form surrounded by vegetal decor with acanthus leaves, fretted, carved and gilded with gold and silver. The Virgin painted in warm colours, is represented with open arms and Jesus' monogram in her lap. The three stars usually placed on the Virgin's garb aren't painted in this case (Dionisie 2000, 269) (Fig. 1).

State of conservation

The bad conservation condition from the church led quickly to deterioration of the iconostasis. Especially the high humidity maintained in the

church for a long period cause the active biological attack. Many variations of humidity and temperature over the year determined wood modification, torsion, cracks and fractures (Thompson 2004, 18). From 1963 to 1969 a lot of empiric interventions were made, such as cleaning, renewing and repainting of some icons, structure and carved decor. The icon was in bad conservation condition so restoring meant the salvation a nice patrimony object from this little village (Fig. 2). The support from lime wood was attacked by xylophages' insects. One leaf was broken from the carved decor and eight leaves were missing in totality or partially in both sides. In the left of the carved decor, the wood presented fractures and cracks, inadequate consolidated with metallic nails.

The polychrome layers suffered more than icon from oval coffer because the changes of wood are more evident in fretted and carved sides and the narrow pieces are more exposed to physical deterioration. So the polychrome layers lost approximately 10% from the surface, present cracklings, are weakened and detached from decreased support. The gold and silver layers used in many parts are damaged and layer of red bole is visible (Fig. 3, 4). The painting layers from icon are mostly stable.

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On both sides, under hand of Virgin the wood is very fragile and the paintings layers present cracks, losses and weakened. The cross from above was fixed with an iron nail that pierced the icon upper Virgin aureole.

Anterior inadequate interventions destroyed in considerable part the aspect of the icon and iconostasis. All polychrome carved decors was covered with bronze and the back of icon with brawn colour. The Virgin faces and garb was partially repainted (Fig. 5).

Conservation and restoration treatments

When the icon was disassembled from iconostasis, was dedusting on healthy surfaces and the painting layers were prophylactic consolidated with Japanese paper and fish glue. In the quarantine room of the workshop insecticide treatment was made with Perxil 10 (based on permethrin). Because the wood was fragile structural consolidation was necessary, Paraloid B72 solved in ethyl acetate in different percent was applied. All fragments with cracklings, weakened and detaching from decreased support were consolidated with skin glue after tension releasing with ethanol.

All parts brooked were fixed with skin glue and mechanical consolidated with pegs and compression system. Losses pieces were made from lime wood, respecting the icon wood fibre and traditional technique. The new leaves were glued and fixed with wood pegs and compression system (Fig. 6).

During last recondition of iconostasis all losses of polychrome layers were covered with bronze. So in this case to complete with primer was necessary

to remove the bronze only from lacunas. Because the gold and silver kept under bronze is very sensible to polar solvents we can't remove all the bronze in that moment. The bronze protected the polychrome layers during primer finishing. For putting a primer based on skin glue and calcium carbonate was used, applied on successive layers. The last layer applied on primer was brushing with bole (Fig. 7, 8).

A mixture of aliphatic hydrocarbure with amide was used in the cleaning process of bronze. So it was removed with toluene and dimethylformamide and neutralized with ethanol. Because the bronze was unequally applied, was necessary to boil down the bronze before to remove it in layers. (Istudor 2011, 262, 264, 268). On painting layers the cleaning was made with a solution based on turpentine, ethanol, water and few drops of ammonia (Fig 8, 9). Aquarelle colours were used for the chromatic integration of the icon. On carved decor and new primer was applied oil size and gold and silver leaves (Fig. 10). The patina of the new polychrome areas was obtained with shellac. The icon was varnish with Dammar resin remiss in turpentine.

Conclusion

To conserve and restore the icon compatible and tested materials and traditional techniques was used. Because the icon will be exposed in a functional church, integration of carved decor using correspondent witness was necessary. The icon is stabilized end will be fixed on conserved and restored iconostasis from *Dormition of the Mother of God* Orthodox Church, Spirodenești village.

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1. Icon after restoration



2. Icon before restoration



3. Detail – degradation of carved decor



4. Detail – degradation of carved decor



5. Detail – degradation of icon



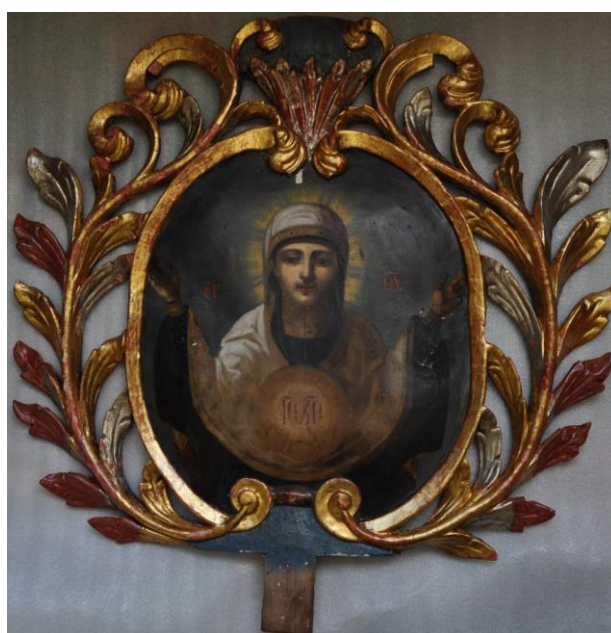
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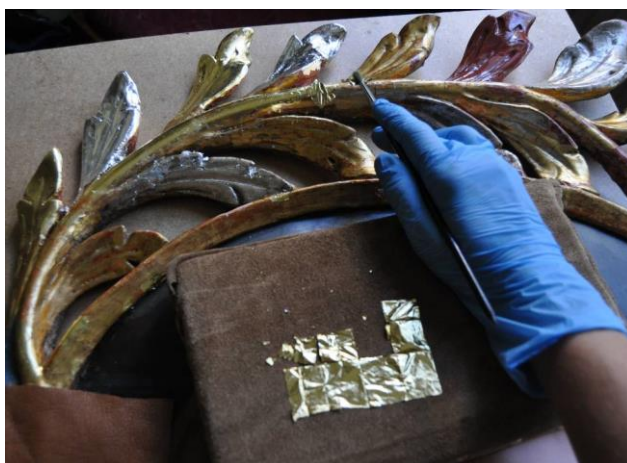
7. Finishing of primer



8. The icon in putting stage



9. The icon after cleaning



10. Applying of gold leaves

REMOVING THE REPAINTING AND RE-JOINING THE ORIGINAL

Cristina FĂU*

Abstract: *The restoration of Paul de Vos's painting "Fruit and red parrot" has revealed much of the original still life covered by an inappropriate intervention. The paper proposes a careful observation of the previously restoration treatments performed on this works of art.*

Keywords: *restoration, oil painting on canvas, repaint removal*

Rezumat: *Restaurarea tabloului «Fruite și papagal roșu», aparținând autorului Paul de Vos, a scos la iveală o mare parte a naturii statice originale acoperită de o intervenție neadecvată. Articolul propune o observare atentă a operațiunilor de restaurare efectuate anterior.*

Cuvinte cheie: *restaurare, pictură în tehnica ulei pe panză, îndepărtare repictare.*

I. Introduction

Painting is a language that convoke to a visual contemplation and release sensations inside the viewer. At first look we can be deceived by lines and colours that easily seem to reproduce forms. But when original desirable sensations are altered and transmitted through the eyes of a pseudo author then measures must be taken.

This article proposes a better observation of interventions on art works. To know the history of a painting, to follow its changes through time, from the initial order to its present destiny, it means a new way to confirm its authenticity and to a better understanding of it.

II. Paul de Vos

Paul de Vos (1591—1592, or 1595 in Hulst – 30 June 1678 in Antwerp) was a Flemish Baroque painter who specialized in still life and animal and hunting scenes (For the biography and works of Paul de Vos: Rooses 1879, 401sq., Oldenbourg 1918, p. 192sq.; Vollmer 1940, 556-559; Hairs 1977, p. 17).

De Vos was born in Hulst near Antwerp, he studied under the little-known painter David Remeus (1559–1626) and he worked in the workshop of his brother-in-law Frans Snyders, the husband of his sister Margaretha (Germeau 2010,

110). De Vos enjoyed the patronage of influential aristocrats in Spain such as the marquis the Leganes, head of the Council of Flanders in Madrid and Philippe-Charles, 3rd Count of Arenberg, then residing in Madrid. In 1637-1638 he worked on the decorations for the Spanish royal residences Buen Retiro and Torre de la Parada. Most of the decorations at the Torre de la Parada involving animal scenes without humans were by his hand. The governor of the Spanish Netherlands Cardinal-Infante Ferdinand visited his workshop (Sutton 2000, 346-349). He often signed his paintings but never dated them which make it difficult to establish a precise chronology. Specialized in monumental animal scenes and under the strong influence of Frans Snyders, De Vos was able to develop his own personal style that accentuated abrupt movement, the gruesome aspects of hunts, using warmer colours and a broader brush stroke than Snyders (Germeau 2010, 110).

As was common amongst artists in Antwerp, De Vos frequently collaborated with other painters such as Thomas Willeboirts Bosschaert, Rubens, Adriaen van Utrecht, Erasmus Quellinus II, Anthony van Dyck, and Jan Wildens. Rubens was the godfather of one of his sons and the collaborations with him consisted mainly of

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hunting scenes. Snyders and de Vos often worked from sketches made by Rubens while in other cases they were given the freedom to develop their own ideas. The expressive style and motifs of Rubens' animal paintings had an important influence on both Snyders and De Vos. De Vos introduced new motifs into the iconographic tradition in his scenes of fighting cats and horses attacked by wolves.

III. The Flemish still life

The beginning of the Flemish and Dutch still life is placed in the XV century, where inside religious themes were gradually introduced ordinary objects who made the scene represented more attractive and familiar (Marta 2004, 11). Flemish and Dutch painting assumes responsibility not only to describe, in a lovely way, the ephemeral things, but also to express their great voluptuousness, as it is known that the pleasure they transmit is evanescent. In a still life scene, the objects are selected to evoke the pleasures of senses: the taste, suggested by aliments and drinks, the sight and smell that flowers refers to, the touch, enjoyed by feeling the pleasant materiality of a carpet, the hearing, that culminates with a violin music (Laneyrie - Dagen 2004, 56-57). All those fragile materials, too ripped fruits, the bitted food remind us about how temporary earthly things are.

Paul de Vos' s still life" Fruits and red parrot"(Fig. 1) is a oil on canvas painting, belonging to the Brukenthal National Museum's collection, unfortunately not signed or dated. The inventory number under it is registered is 1233 and the dimensions are 116cm X 92cm. Executed in a baroque style, in the first half of XVII century, in Belgium, the painting has also a pendant, with inventory number 1232 "Fruits and green parrot".

IV. Description of the painting before and during restoration procedures

When the painting was brought in our Restoration Laboratory the first intention was to reduce time required for operations because the participation to exhibition was close. I started to study closely the painting to get all information I needed about its state of preservation and also making the photographic documentation. There was also necessary to identify the interventions made during successive restorations.

Knowing that the painting was restored before, I tried to find more information about previous restorers. The restoration undertaken in the Brukenthal Museum at the end of the 19th century saved many works and was a first step towards the

study of their attribution in accordance with modern criteria (Csaki 1921, 31-33). Eduard Gerisch, the curator of the Academy of Fine Arts Gallery in Vienna, restored, between years 1896-1899, an impressive number of paintings (Sonoc 2010, 34). In only three month he intervened on 580 less damaged paintings from museum's collection and 299 paintings with many conservation problems, were sent to Vienna (Csaki 1921, 667) where the restorers applied lining procedures for 245 from received ones. Eduard Gerisch closely studied the paintings and observed lots of overpaints on many of their surfaces, applied even for small defects. Those interventions were made by anonymous restorers, from an early period and only now the paintings could regain their original aspects. Some of the works, on the contrary, had so many deteriorations, that trying to complete the original parts wasn't a modern restoration domain anymore. The paintings, therefore, were only cleaned to be able to transmit to the viewer the impression intended by their author (Csaki 1909, V).

The stretcher of our painting is a resinous wood frame, designed without stretch wedges or withdrawal slope and the bars are fixed in every corner with two metallic nails. On the superior, inferior and left wands are glued stickers that gives us information about inventory number, author name and painting title and the year of an anterior restoration (1897). The stretcher has dirt on the surface, scratches, due to inappropriate manipulation, a fifteen centimetres splintering, on superior side of the left bar and the lower wand is covered with brown coloured drops.

The original canvas is small grain linen and like most of oil paintings, of any age, this one at some time was lined with another canvas with the same characteristics. In our case, the previous restorations solved the support problems because the painting is not hanging loosely on the stretcher and both canvas are well glued together. We can see a single area on right edge, in the centre, where they lost the adhesion. The bounding agent, used in the lining process, penetrated the back of the canvas, helping dirt accumulate on its surface and the same brown drops on the lower bar are found also on left corner of the support. Both canvases have small gaps due to xylophages attack. Dust and dirt has a tendency to collect on the backs of the paintings, settling between the canvas and stretcher bars and becoming engrained in the exposed canvas, but also a good environment to absorb humidity.

During restoring operations the problems listed above were solved by removing the dust laid on the stretcher and support verso and also dust deposits between canvas and wood bars using the vacuum cleaner and a rigid brush. I cleaned the stretcher's bars with a smooth rug, soaked in water and consolidated the bar splintering using an adhesive for wood. The small gaps on support were filled with a ground consisting in a white chalk powder mixed with Beva 371, a synthetic adhesive. For big canvas losses I used linen fibres, coated with Beva 371 (Knut 1999, 112). They were applied, with the help of thermoelectric spatula, in a weaving way imitating the grain of the lining canvas (Fig. 2). I removed those nails from stretcher, that oxidised the canvas and I fixed the support on its stretcher using metallic staples.

The primer is the ground more suitable for the painting medium. In our painting, the primer is a red bolus, having the advantage of being capable of filling the texture of the canvas for a smooth finish, binding well with oil paint also.

The stratigraphy of this still life starts with thin layers and reaches up to demipasta. It is visible on the zones with fruits that each grape has its own relief and transparency and each highlight is distinct from the next one. The velvety skin of the peaches has a splendid material structure that makes the sensual symbolism more explicit. But observing all layers and brush technique used to paint the flowers and leaves, the sky and the grass, the stump that parrot sits I could already think that I am looking to a big proportions overpaint. On a close observation under magnifying glass the aging cracks appeared covered with a thick amount of paint layer. This entire surface was less smooth and painted less precisely than parrot and fruits in the centre. The painting doesn't have cleavages on its surface, only some small gaps in paint layers, placed perimeter, are visible.

The surface is coated with a layer of varnish; a colophony resin suspended in turpentine, applied for the protection of the painting, so that dirt and grime don't directly attach to and enter into the paint. Over many years, the transparency of the varnish becomes clouded and the painting is now viewed as if through a yellow filter. Dirt deposition on the painting surface gave it a gray, dull appearance and it may consist of dust from the environment, as well as particulates from pollution in the air (Fig. 3).

For inspecting the overpaint, I used a long wave ultraviolet lamp in the 365 nanometre range. At this wavelength, many materials absorb invisible ultraviolet energy and transform this energy to

visible coloured light, easily distinguished by the human eye. It is not reflected, but emitted light. In some cases it is absorbed without emission, making these areas appear quite dark in contrast to the fluorescent areas. Bluish-white spots indicate the presence of lining compound, dark bluish-violet indicates picture repair putty and very small blue dots are dust. A chartreuse haze indicates old varnish, which is what you hope to see, because it shows that no recent restoration work has been done. I also analysed the painting with infrared light, hoping to see under overpaint, but the thick paint layer that covered the original parts of the scene, did not allowed the success of this investigation.

I will insist talking about cleaning operation because it regards the subject of this article: revealing the original scene, hidden for more than 100 years under overpaint. At first I dusted the painted surface using a soft brush and removed the dirt coat with ammoniac solution (2% ammoniac in water). To have control over cleaning tests, I used during all operation, the ultraviolet light that helped me check every step of cleaning process (Fig. 4). The tests I made include six solvent solutions, starting with soft mixtures and reaching to one stronger solution.

Solvent solutions I tested were (Fig. 5):

1. Turpentine essence 40% + Solvanol 60%: the solution had a partial effect on varnish layer but does not remove all of it.
2. Turpentine essence 20% + Etilic Alcohol 80%: i could use this cleaning system to remove the varnish applied on the original paint layers.
3. White Spirit 50% + Acetone 50%: the result of applying this solvent mixture was unsatisfied.
4. White Spirit 30% + Acetone 70%: in this concentration, Acetone removed the varnish but degreased the original surface excessively.
5. Dimetil Sulfoxide 5% + Etil Acetate 95%: the cleaning solution removed the overpaint but has the disadvantage that is toxic.
6. Dimetil Sulfoxide 10% + Etil Acetate 90%: the cleaning system remove very well the overpaint but penetrates too easily into layers and does not give enough time to reduce its retention on surface. The combined information allowed me to proceed with treatment to recover the original painting from the crude later paint. A cleaning system was devised using soft solvent solutions for original surfaces and the paint stripper for removing the overpaint (Fig. 6, 7, 8). Using the second solvent solution I tested, I observed that the original zones (parrot and fruits) cleaned up very well and the

final fluorescence remained normal. The news was not that good because that showed that the painting had only the single varnish layer, applied last time. The original varnish could work as an isolating layer, protecting the original, if a solvent system could be found, which would dissolve the overpaint without removing the varnish layer.

That first solution helped to limit penetration of the solvent through cracks and thus minimize contact with the original paint. The surface was cleaned with small swabs dipped in solution. The process was repeated until the original surface was revealed and the initial results were satisfying because the original paint was of so much higher quality than the crude repainting. The fifth solution that had in its composition Dimethylsulfoxine, succeeded to remove the thick layer of overpaint, necessitating also a cleaning method in which a rolling technique for the cotton swabs was employed to prevent surface abrasions that could result from mechanical action. A scalpel was required to assist in the removal of the hardened paint (Fig. 9, 10).

As the overpaint slowly disappeared, over a period of two month, the results were very gratifying. Hidden details such as peaches and vines leaves, a big ceramic vase in the left back of the fruits, the architectural fragment the parrot sits on, were revealed. The background of still life is now a beautiful landscape. Paul De Vos's colours and brush work are much more subtle and skilled than what had been visible. The cleaned surface did not revealed major damage, as expected. There were some flake losses and solvent abrasion was found. So it can't be understood why the anterior restorer applied that overpaint layer. Unfortunately the final reward wasn't coming because under overpaint it wasn't hidden the author signature or the year when he painted the still life.

Filling has two purposes. It prevents further damage by sealing the edges of holes, tears and cracks. It is also used to reproduce a sympathetic surface with respect to plane and texture. Minor areas of former loos and the horizontal cracks were filled with the same ground I used for support gaps, a mixture of white chalk and synthetic resin Beva 371, laid under the heat of thermoelectric spatula (Fig. 11).

A brush coat of Dammar non-yellowing varnish was applied to the paint surface, for several reasons. First, it reinstates the richness of the paint allowing the darks to have their proper tone.

Second, it keeps dirt and air pollution off of the picture surface. Third, the varnish coating protects the paint layer from damage caused by abrasion, moisture and accidental accretions. The varnish also creates an ethical buffer between the original paint layer and the retouching or inpainting. Restorers do not paint directly on the original; the work is done on top of this isolating coat and can be taken off by simply removing the underlying varnish.

Retouching is carried out to correct visual irregularities caused by inherent structural problems or surface damage. It is applied only on areas of loss and never extends over the original paint. Retouching will be kept to a minimum, not attempting to make the painting look new, but merely restoring the unity of the surface so that the damages are not distracting the viewer. The retouching was completed using varnish colours that are both colour- and light-fast, offering confidence that the restoration areas will remain consistent over time. Also the colours are soluble in relatively weak solvent and permits safe and easy removal without risk of injury to the original surface (Fig. 12, 13, 14, 15). After retouching operation, the application of a non-yellowing spray varnish completed the treatment (Fig. 16, 17).

V. Conclusions

As we can see them today, the works of art does not appear to us with the look they had after their execution. In best cases, the alterations they suffered, cleavages, cracks, are superficial and aren't damaging, literally, the paintings. Those are not reducing the emotional power that original images transmit, on contrary; they are intensifying the flavour given by passing of the time. In other cases, temperature and humidity variations, natural disasters, wars, human negligence and inappropriate restorations produce irreparable degradations.

Our look over the paintings should establish all transformations occurred in time. It is essential to recognize the interventions made by successive restorers and, after that, being able to guide the future actions. Restoration of a painting is always a delicate procedure. It has to be discreet and reversible, without affecting the original. All this motifs demands from the specialist a considerable work of scientific and technique documentation that precede any restoring operations. The information, provided by investigations, is precious for the historic of every piece of art.

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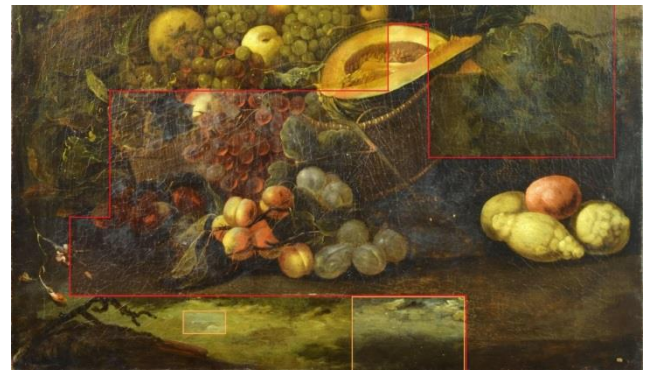
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DEGRADATION SIGNS AND PROCESSES OF THE ITEMS COMPOSING THE CANOPY OF THE BIG ROYAL CHURCH ICONOSTASIS IN TÂRGOVIȘTE

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Abstract: *The items composing the canopy of the Big Royal Church iconostasis in Târgoviște, have undergone a series of previous conservation and restoration interventions, because of the degradations caused by the environmental factors, along time. These interventions have, themselves, have turned into factors that generated irreversible damage and degradations, on both the painted layers level, and most importantly, on the wooden supports level.*

Keywords: *iconostasis, canopy, degradation, conservation, restoration*

Rezumat : *Piesele din componența coronamentului iconostasului Bisericii Mari Domnești din Târgoviște au suferit o serie de intervenții anterioare de conservare-restaurare, datorită degradărilor produse de factorii de mediu, de-a lungul timpului. Aceste intervenții s-au transformat în factori care au produs deteriorări și degradări ireversibile, atât la nivelul straturilor picturale, cât și, cel mai important, la nivelul suporturilor din lemn.*

Cuvinte cheie: *iconostas, coronament, degradare, conservare, restaurare*

The painting of the church in Târgoviște was executed by the team lead by the painter Constantinos, composed of Ioan, Ioachim and Stan, after they had finished the painting of the Hurezi church in Vâlcea County, where they were considered to be the painters of the „Hurezi School”. Absorbed and integrated in the Romanian artistic medium, the Greek painter Constantinos became, in short time, the leader of the big painting atelier in Hurez, which, because of its formative capacity, and the training it had offered to a large number of painters and journeymen, was to become a veritable school, that carried forward the renown of the artistic life in Țara Românească, under the rule of Constantin Brâncoveanu (Drăguț 1982, 394).

The Big Royal Church, built up by Petru Cercel, between 1583 and 1585, was decorated with paintings in 1698, and that was also the moment when the chiselled and painted iconostasis, executed by Constantinos, the royal painter, has been added (Constantinescu 2009, 61). This fact is

certified by the existence of a signature of the painter “iconografos Constantinos”, at the basis of one of the royal icons „Mary of the Embodiment”, (“Mary Panakranta”).

The valuable chiselled and painted ensemble was executed in the atelier belonging to the royal court of Târgoviște in 1697. The elements decorating the iconostasis have a floral ornamentation, and also heraldic, anthropomorphic and zoomorphic motifs.

The iconostasis is wreathed by the Crucifixion, and two icons, „Aggrieved Mary” on its left side, and „the Apostle John” on its right side, called „molenii” (Porumb 1998, 175). They are supported by a decorative element with floral, zoomorphic and anthropomorphic motifs – angels holding a medallion, which connects the canopy with the rest of the ensemble.

The four items have been exposed, for a long time, to microclimate changes which have generated a series of accentuated degradations, both on the wooden supports, and on the painted layers,

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covering them, level.

According to the analysis bulletins, executed by expert biologist Dr. Livia Bucșa, the wooden supports have been made up of linden (*Tilia sp.*), which is sensitive to the atmospheric conditions and unsuitable for outdoor use (The ultimate Guide to Wood Working 2007, 46). Linden is usually the most suited type of wood for this kind of artworks because of the easiness it can be chiselled with. The complex decorative motifs, surrounding the painted surfaces, have been gilded with golden leaf, according to the analysis bulletin executed by expert engineer chemist Dr. Polixenia Popescu.

The wooden panels have been sawn tangentially, and this aspect can be observed especially due to the inflection tendency which appears to be visible on all the items of the ensemble.

The altar cross – „The Crucifixion” – is composed of two stacked panels, with a whittled surface on the merge area, in order for the joint to be executed with wooden nails. Due to the previous conservation and restoration interventions on the backs of the items, the way the panels have been timbered cannot be observed clearly.

During the previous interventions, executed, according to an inscription on the back of an altar door, in 1929, the cross has been mechanically consolidated, on the back, with a structure which had a backing role, made of new, porous, elastic and easy to finish, fir wood (The Ultimate Guide to Wood Working 2007, 41). This structure has been attached with iron nails (Fig. 1). This system, conceived to ensure the ensemble a good mechanical consolidation, has created numerous tensions in the wooden supports level, which have lead to rifts and fractures. Also, the metallic elements, used to supplement the consolidation, are, in the present, visible on the edges of the cross, especially on the club shaped elements that decorate the four heads of the cross (Fig. 2).

The most important degradation agent, with an influence over the entire ensemble, was the excessive humidity, originating from a partial gap in the roof, which enabled the water from the outside to enter the interior, and now has been remediated. Thus and so, structural degradations on the wooden support level have occurred, and the installation of a massive attack of xylophages insects, *Anobium punctatum*, which reduced the mechanical resistance of the supports, has been facilitated (Fig. 3).

During the previous interventions, calcium casein, a phosphopeptide that can be found in milk, water

and organic solvents insoluble, and lime, extracted from the thermal dissolution of calcium carbonate contained by certain rocks (Istudor 2011, 178) was applied both on the backs and on the painted surfaces. The transparent calcium casein dispersal is used as a fixative for the restoration of frescoes. The more the lime/casein concentration is stronger, the harder and more contracted the obtained glue is (Istudor, 2011, 210-211). On the backs level, the substance has been applied for protection and consolidation, and, in order to achieve a better penetration inside the wood, perforations have been executed. They can be observed on the radiographic images, executed by the expert physicist Cecilia Hărăstășan (Fig. 4, 5). As a result to this operation, the solution suffered a stiffening effect, in time, after drying, and it created tensions on the wooden supports level, followed by the appearance of cleavages and rifts, especially on the backs surface. After a visual examination, it is very clear that the solution did not fulfil its consolidating role, penetrating only approximately 1 mm in the depth of the wooden panels, thus facilitating additional tensions. Also, inside the perforations executed for impregnation, traces of solution have been discovered, these showing excessive application on the entire surface (Fig. 6).

As far as the painted layers are concerned, they have been covered, for protection, with Japanese paper, also applied with calcium casein, which created a film on the painted surfaces.

The two icons, *molenii*, representing Saint Mary and the Apostle John, have undergone the same kind of interventions. Similar to the Cross, both on the backs, and also on the painted layers level, traces of a protective and consolidating operation, effected with calcium casein are visible. The wooden support of the icon that appears on the right side of the Cross on the iconostasis, representing the Apostle John (Fig.7), shows the absence of a decorative ornament, on the superior side of the panel, but the ornament is still present on the icon representing Aggrieved Mary (Fig. 8), situated on the left side of the Cross. Both icons have undergone the same conservation and restoration interventions as the Cross, and they also have two fir elements added on the backs with the help of iron nails, in order to ensure a better stability on the inferior part of the ensemble.

The inflection phenomenon can be better observed on the panel of the icon Aggrieved Mary, on the left side of the Cross (Fig. 9). After the examination of the icon in UV light, the traces of the xylophages' insects attack, and lacunae on the

painted layers level, could be seen. They were difficult to observe after a simple visual examination, because of the whitened calcium casein layer that covers the entire painted surface (Fig. 10, 11).

The element that sustains the Cross and the two icons, decorated with angels holding a medallion, framed by zoomorphic figures, ensures the transition to the inferior part of the iconostasis, which holds the registers framing the icons below. There are numerous degradations on the wooden support level, which can be observed on this item. During the previous consolidation operation, a wooden structure, made of fir, was attached on the back, with iron nails, with the intent of increasing the resistance of the item and to help taking over the weight of the elements above (Fig. 12). This system, alongside the calcium casein layers applied on the wooden support and the massive insect attack, created tensions which lead to detachments and losses of material.

Also, losses of wooden material can be observed on the extremities level, especially in this case, due to the fact that the item is decorated with sculpted elements that outgrow the compact part of the wooden support. Therefore, significant losses of material can be observed especially on the heads of the zoomorphic elements heads level. In the areas where pieces have only suffered detachments from

the compact side of the item, interventions with the role to consolidate have been executed using fir wood and iron nails (Fig. 13).

Cleavages and rifts are visible especially on the inferior extremity, similar to the ones mentioned in the descriptions of the other three elements composing the ensemble.

On the surface of the painted layers, significant cleavages, rifts and lacunae are visible, as well as dust deposits.

The conditions the items presented above have been placed in, along with the improper previous conservation and restoration interventions, lead to irreversible degradations, both on the wooden supports level, and on the painted layers. Studying the causes of decay can lead to the discovery of suited restoration methods, given that, with the help of visual, biological, chemical and physical investigations, a diagnostic can be established, followed by the restoration of the items. This implies the partial or total removal of the inadequate interventions, and also, keeping the original message of the items, which then are to be a part of an exhibition in a controlled environment as far as the microclimatic conditions are concerned, in a position that will ensure the mechanical tensions they are exposed to are as reduced as possible.

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1. Cross – back view before restoration



2. Cross – consolidation with iron nails; detail



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4. Icon – X-ray; detail



5. Icon Aggrieved Mary – X-ray; detail



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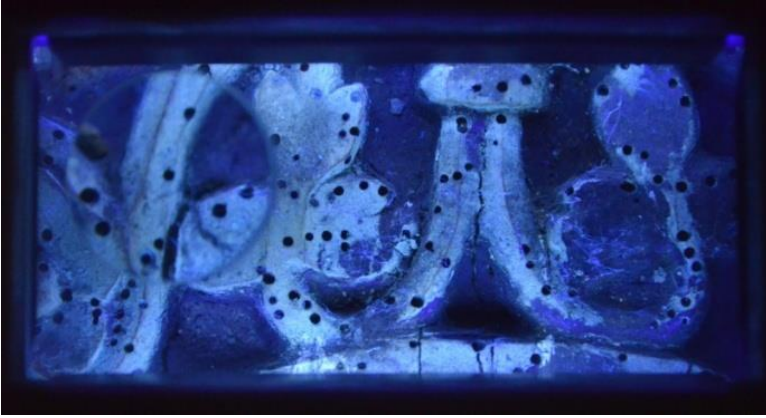
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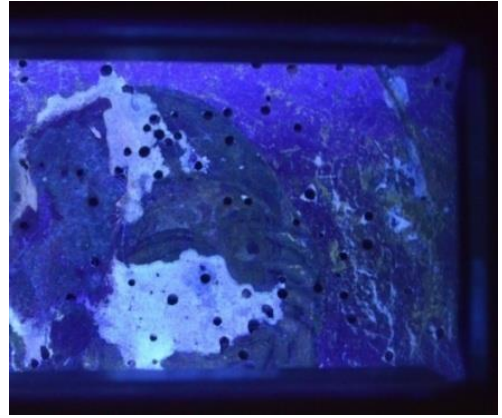
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ANO 1664 CIBINII

Dr. Dorin BARBU*

Abstract: *The clock with the inventory number M2711 is an important piece in the collection of the National Museum Brukenthal from the point of view of the technique of making casing dated 1664 and the mechanism. Restoration failed to re-establish the clock functionality, but through its preservation an important link was highlighted in the history of clocks, making the transition to clock pendulum.*

Keywords: *restoration, metal, mechanism, Cibini.*

Rezumat: *Ceasul cu număr de inventar M2711 este o piesă importantă din colecția Muzeului Național Brukenthal atât din punct de vedere al tehnicii de realizare a carcasei dataată 1664 cât și al mecanismului. Restaurarea nu a reușit să redea ceasului funcționalitatea, dar prin conservarea lui se pune în valoare o verigă importantă în istoria orologiei, el făcând tranziția spre ceasul cu pendul.*

Cuvinte cheie: *restaurare, metal, mecanism, Cibini.*

“Ano 1664 Cibinii”

This is the inner rear side inscription of the pendulum table clock, with the inventory number M 2711, belonging to Brukenthal's National Museum collection, purchased in year 1882 from goldsmith Ludeke for the sum of 40 Florins. The case having the outer layer made of golden brass has a parallelepiped shape with a square base of 9cm, the lid has a square shape of 7.3cm and the four facets have a height of 9.5cm and a width of 7cm each. It is assumed that the mechanism has an European origin and the case was manufactured in Sibiu, this matter being the subject of a further study determined by additional data provided by the restoration-conservation of this artefact described below.

The 4 facets of the watch are bordered by 4 small columns, each adorned with floral motifs and a skull. The circular clock dial is numbered with I-XII numerals; on this same facet an hourglass, a man lying down and a skull are engraved. The opposite facet displays the ringer dial also of a circular shape with Arabic numerals, the numerals 12, 1, 2, 3, are very close to each other; arabesques and different birds can be seen on the lower side as

well. The inner rear side displays also a monogram besides the inscription "ANO 1664 CIBINII"(the monogram belongs to the craftsman who manufactured the case). The side facets display each images of Hercules, Hercules with the lion respectively Hercules with 2 columns of the Jupiter temple. The lid ends with the ringer's bell.

Conservation status:

The 2 lids (both the upper and lower lid) lacked fixing pegs. This has produced the displacement of 2 gear wheels of the mechanism and made the 4 clock facets to fall apart. The inner side of the facets that wasn't polished with gold displayed an irregular and continuous layer of both mechanical and copper corrosion products derived from the brass alloy, namely copper oxides. The mechanism displayed a discontinuous and irregular, even thick at some places, layer of iron corrosion products that blocked the whole gear.

Missing parts: the pendulum, the ringer dial pointer, the pulling key of the 2 springs, a securing pin of the ground lid, another pin had a component broken. While checking the 2 springs, one of them proved to be broken twice, first time it was

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previously repaired by using a mechanical joint in slit.

After cleaning it could be seen that the mechanism didn't possess all its original components anymore, it was a past attempt to transform the original clock into a pendulum clock. In order to achieve this, 3 of its original gear wheels have been replaced with 2 new ones that were far beyond the initial quality and were supposed to transmit the pendulum movement. The pendulum has been adjusted as well by a rough addition made to the clock's casing. Watchmaker Hermann, our collaborator in Sibiu (who helped me assemble these components) believes that this irreversible conversion made the clock inoperative from the start. He justified his claim saying that the new adjusted gear wheels were not centred, poorly manufactured, probably by a local craftsman, before the clock entered the museum's collection. That being the case, retrieving the clock's functionality was out of the question, only its conservation was at stake and finding a suitable pendulum; an exact analogy for it hasn't been found yet.

Restoration

To dismantle the mechanism we have treated the securing nuts with Baristol® (White 1995, 5) to dissolve the corrosion products that compacted them. All steel parts were micro-sandblasted with glass pearls at a pressure of 1.6-1.8 atmospheres to remove the corrosion products and the brass parts were imbued in a 20 % orthophosphoric acid bath and distilled water then cleansed and protected with a special Silbo silver designed cloth (Heinrich 1994, 194). I have manufactured 2 pins from brass

sheet, those pins were crucial for assembling and the stability of the artefact. They were riveted to the base. The broken spring was changed with an identical one of 13mm width and 0.2mm diameter. The original spring was preserved and deposited in the museum store. The ringer pointer was copied after the little pointer and cut out of brass sheet of the same thickness. The pendulum was made on lathe, out of brass. The missing knob of the side cover was moulded with silicone rubber, casted in Duracryl and then gilded after the pendant one. The assembling process began by starting with the base of the mechanism and securing the lids and both the front and rear facets were made with manufactured steel pins (6 out of 8 were missing). The needle of the ringer dial was secured with a new manufactured pin and a washer.

Conclusions

The spring replacement, considered as a "consumable" part couldn't restore the functionality of the clock, but the fact that this artefact could be exactly dated "Anno 1664" makes it an important link in the evolution of mechanisms. "CIBINII" and the monogram of the inner rear facet represent a proof of the craftsmanship of the goldsmiths in Sibiu of the 17th century. The repairs and the failed conversion proved the fact that local watchmakers didn't reach the level of craftsmanship of their European counterparts. The carved inscriptions and the new found marking on the base bottom could provide new information for the clock's study in a new phase opened by the restoration of this artefact

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NEW REMARKS ABOUT A PAINTING BY MICHAEL WILLMANN, AFTER ITS RESTORATION

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Ioan MUNTEAN**

Abstract: As consequence of the restoration of the painting 'The Paradise' by Michael Willmann, new compositional elements were discovered. The surface of the preserved painting represents ca. 35 % of the original work, which was painted in 1668, most likely for the Cistercian monastery in Grüssau (Krzeszów, Poland).

Keywords: reattachment, doubling, Michael Willmann, the Paradise, the Cistercian monastery at Grüssau (Krzeszów, Poland).

Rezumat: Ca urmare a restaurării tabloului "Raiul" de Michael Willmann au fost descoperite noi elemente ale compoziției. Suprafața tabloului păstrat reprezintă cca. 35 % din lucrarea originală, pictată în 1668, cel mai probabil pentru mănăstirea cisterciană de la Grüssau (Krzeszów, Polonia).

Cuvinte cheie: maruflare, dublare, Michael Willmann, Raiul, mănăstirea cisterciană de la Grüssau (Krzeszów, Polonia).

I. Remarks concerning the restoration of the painting.

The work entered laboratory on September 11, 2009, after staying previously in the permanent exhibition of the Museum. The request for restoration of this painting came ahead of its participation in the exhibition called "Dream of Diana: The History of Hunting in the Collections of the Brukenthal National Museum". On a closer analysis of the conservation status we have noted the following. The painting was done in oil on canvas technique and it suffered a reattachment on plywood in 1951, operation carried out by a known local artist, Hans Hermann (Fig 1).

The network of cracks present all over the surface indicates that the canvas stood on a stretcher before the date mentioned above. This network is one of aging cracks specific to oil paintings made on flexible support (canvas) and it is different than the cracks network usually formed on a rigid support (plywood). The year 1951 was mentioned on the back of the plywood support together with the signature of the painter and illustrator Hans Hermann (Fig. 2). The plywood was in turn fixed to a

chassis provided with a horizontal beam. This support is inappropriate for paintings, and had lost flatness so ample curl appeared. In order to maintain the plywood on the frame, it was fixed with big metallic nails, struck from front to back, straight through the painting's stratigraphy. This intervention was damaging and inappropriate, executed on a later date than 1951, because the nail heads did not showed traces of varnish or colour derived from retouches. However this intervention failed to stabilize the plywood and because of the powerful tension that it developed, it had detached away from the chassis. The edges of the painting indicated that the textile support was cut after attachment on plywood, and does not retain any of the original edges of the painting. Analysing visually the stratigraphy present on these edges we found that for the operation of attachment a thermoplastic adhesive had been used, a wax-resin mixture. During this process of transfer, the colour layer of the painting was affected by the excess of heat that was used, and in some parts got a wrinkled appearance. All over the surface there were many areas visible with altered colour retouching,

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and colour tone changed. This was easily revealed by a study under UV light. Retouching operation was carried out in several stages, when small areas of stratigraphic gaps were grouted and then integrated in colour. When entering the laboratory, the painting was due to suffer similar small scale interventions, with specific measures, on local areas with stratigraphic gaps. The intervention, in exchange, focused primarily on removing the metal nails and the plywood blade and then doubling the painting on canvas and attaching of the work on an appropriate chassis.

After the photographic documentation was done, first step was the removal of the nails and then applying a layer of Japanese paper all over the painting, which has a role of temporary protection for the colour. Removal of the plywood blade followed, operation for which was used a metal spatula and silicone foil and heating was achieved with IR light and a pressing iron with thermostat. This operation was conducted with special care, to avoid overheating and extra degrade the colour surface. Once the blade of plywood was removed, there was found out that the original textile is composed of five manually manufactured pieces. The two large textile pieces are displayed horizontally and we can appreciate an approximate width greater than 87 cm. In the lower left corner there were inserted two smaller pieces of canvas with sizes of 12,5 x 5,5 cm and 12.5x 27cm. On the right side of the painting, a piece of canvas placed obliquely was inserted, with an irregularly shaped and size of 7 x 18 cm (Fig 16).

An important note is that these smaller pieces of canvas have the same gram with the two main pieces. The stratigraphy present on all the pieces is similar, so this drew us to the conclusion that the initial size of the painting was bigger.

Then there was removed the adhesive excess on the back of the painting, and after this was cleaned was measured a weight of 197 g of adhesive removed, while on the plywood there can be estimate an even greater amount of it. This adhesive is a blend of wax and resin. When it was first applied, due to the heat that was used, it had penetrated the original textile layer, entering between the wires and even inside the textile fibres, this being observed under the microscope. Because of this reason, a total removal of the old adhesive was impossible. With this consideration, on a textile impregnated with wax-resin, there must have been chosen a doubling on a new canvas a thermoplastic adhesive from the same category, so was opted for Beva 371 film with a thickness of 63.5 μ . The

weight of the new adhesive calculated on total contact area is less than 65 g as compared with the old adhesive, which was 197 g only on one side! The doubling of the painting was easily performed using the thermal vacuum table which is to be found in the laboratory, having a very good control of the temperature and pressure. A new chassis was made for the painting, properly designed with withdrawal slope, tensioning wedges and cross-shaped beams. The canvas was anchored on the new chassis using metal nails.

The Japanese paper was removed, and operations of consolidation were conducted in areas with stratigraphic gaps. After a series of tests the cleaning of the old retouches started and the same for the old varnish layer that had to be removed for its brown appearance that distorts the overall colour of the painting. Good results were obtained using solutions consisting essentially of alcohol and turpentine, also white spirit and acetone. With these solutions we removed the retouched colour in a way that was not affecting the original colour layer, which is very stable. During the cleaning operation there was noticed that on the left side of the painting we have an area repainted with dark brown (Fig. 1), and after removal of this, a scene appeared in which God creates Adam (Fig. 6). The conclusion drawn above about the larger size of the painting is sustained here also compositionally within the presence of this newly discovered scene. It is positioned close to the left edge of the painting (Fig. 3) while its size and colour makes it the main centre of interest of this painting (the form in which it was preserved), and the scene with Adam and Eve turns into secondary centre of interest. The composition of the work switches now the focus on the creation of Adam, the gentle gesture of God in the presence of the two curious monkeys nearby, and original sin scene becomes overshadowed. Prior to discovering this scene, the painting had a central and closed composition, with a Heaven Garden densely populated by animals and large trees enclosing it by left and right (Fig. 1). Now the painting changed into an open composition, framing a way that can be continued in the left and right (Fig. 3). The composition becomes a narrative in which we find more scenes with moments of Genesis. This sequence of Adam's creation was covered by previous restorers for at least two reasons. The first would be the bad conservation status of the area, where there were many gaps and small pieces of wrongly consolidated stratigraphy, being positioned differently than their original positions. Some of the gaps have been integrated without previous grouting of the

place. The second reason can be an aesthetic one, in this way by covering the large red area, the composition in the shape preserved by today, becomes more meaningful and the scene with Adam and Eve grow in importance. These types of interventions of restoration, with removal of original compositional elements, say much about the principles (or the lack of them) that guided the restorer's activity over time.

After removal of retouches and repainted areas, there was found three types of putty used (two yellowish coloured based on animal glue and chalk and a brownish one with oil and chalk). The old putty surplus was removed because a good part of grouted areas were excessively covering original colour, and were not applied just inside the gaps. There were also consolidated parts of the original stratigraphy on the scene *God and Adam* area that were previously misplaced. For grouting operation we had to use a compatible Beva 371 based putty (mixed with chalk) applied with heat spatula. Choosing this type of putty was imposed by the fact that the textile was impregnated with wax-resin adhesive (originated from previous doubling operation) and this made it impossible to grip an aqueous adhesives based putty. The relief and models in the grouted areas was performed under a microscope with thermal spatula. Further, the general varnishing of the painting was done and for this task a resin varnish dammar was used. Retouching was executed in imitative style, with colour based of varnish from Maimeri-Restauro series. Finally, in order to equalize the refractive index of the surface, we applied a coat of varnish of aerosol type. Photographs were made throughout the restoration, and then this very special painting was returned in the exhibition circuit of the Museum, for the delight of the public.

II. Remarks on the historical and artistic value of the painting.

Michael Willmann (1629-1706), one of the most important painters of the Central European Baroque, was born in Königsberg / Królewiec (now Kaliningrad, Russia), at that time in the Duchy of Prussia, which until 1657 was a fief of the Polish crown. At first he studied with his father, the painter Christian Peter Willmann. Then he went to the Netherlands, but for financial reasons he could not study there with a renowned master, nor fulfil his dream of traveling to Italy. His stay in the Netherlands (particularly in Amsterdam) gave him the occasion to procure numerous engravings, to practice by making numerous sketches and to

modernize his style, but also to inspire from the works of Rembrandt, Peter Paul Rubens, Jacob Adriaensz Baker, Pieter Lastman and Anthony van Dyck. Returned to Königsberg, M. Willmann made his master examination and began to travel, to find a rich protector and a place to open a workshop. After visiting the city of Danzig (now Gdańsk, Poland), the artist went to Prague, where he remained during the period 1653-1655, but apparently without any real connection with the workshop of Karel Škréta the Elder. He stayed then about a year in Breslau (Wrocław, Poland), where he came into dispute with the local guild of painters. The first known works by M. Willmann, commissioned by Abbot Arnold Freiberger (1589-1672) from the Cistercian monastery of Leubus (Lubiąż, Poland), are dating from 1656. For the church of this monastery the painter (who was later celebrated as a Silesian Apelles, Rafael or Rembrandt) and his workshop made between 1656-1702 a series of at least 60 works (some of large dimensions) with religious theme, which was prized at that time as a real "art gallery" by the artists from Silesia, Bohemia, Moravia and Austria. After 1943 it was scattered in various churches and museums in Warsaw and Wrocław.

By 1657-1658 M. Willmann became the court painter of Prince Elector Friedrich Wilhelm von Brandenburg, for whom he painted mythological scenes, perhaps for the princely residence in the castle of Königsberg. Later, in 1682, M. Willmann will paint also an apotheotic portrait of this prince. In 1660, after a stay of more than two months in his hometown, the painter returned to Leubus in Silesia (then a country belonging to the Czech Crown) and on November 26, 1662 he married Helena Regina Lischka (Liška), a widow from Prague. A little later (May 22, 1663), at Glatz (Kłodzko, Poland), he converted from Calvinism to the Roman Catholic faith, taking the Christian name, Leopold (after that of the ruling emperor, Leopold I) and Lukas (in honour of the Apostle who became the patron of painters, because according to a later tradition he would have painted the portraits of the Virgin Mary and of the Apostles Peter and Paul). In the context of the great efforts to convert the Protestant population to the Catholic faith, held simultaneously with the reconstruction of the Catholic churches and monasteries which were destroyed during the Thirty Years' War, the painter will prosper because of many commands executed for various Cistercian monasteries and parish churches from Silesia, Bohemia and Moravia, putting thus himself at the service of the Counterreformation (whose forms of artistic

expression he quickly appropriated), which limited his creative freedom, especially since his workshop functioned right in the Cistercian monastery at Leubus. Although it is possible that the painter converted also as a result of its relationship with the monastery, he benefited from this relationship by the fact that, becoming a familiar of the Cistercian Order, the monastery assured him the needed protection to assert himself in his competition with the painters from Prague and Breslau. He was, it seems, a practicing Catholic, because he became a member of the Brotherhood of St. Joseph from Grüssau (Krzeszów, Poland), of the Brotherhood of the Rosary from Leubus and of the Brotherhood of the Holy Trinity from Heinrichau (Henryków, Poland). Both his daughters became nuns (Helena Regina of the Ursulines and Anna Elisabeth of the Dominicans), which is an indication that in their family environment there was a deep attachment to the Catholic faith. Moreover, along with the theologian, physician and poet Johann Scheffler (known as Angelus Silesius) and Abbot Bernhard Rosa, the painter is considered as an exponent and a founder of the circle for cultural and religious exchanges from the Cistercian monastery at Grüssau, for whose church he painted the cycle of works related to the cult of St. Joseph, which has seen a swift development in all the territories ruled by the House of Habsburg, including Silesia too (Mikuda 1985; Mikuda 1986; Mikuda-Hüttel 1997a). Among the ecclesiastic commissioners of the workshop of M. Willmann there were not only the parish clergy and the Cistercian order or different congregations, but also members of the episcopate and of various orders, like the Premonstratensians, the Augustinians, the Benedictines, the Crusaders of the Red Star and the Jesuits.

Along some members of his family (his son Michael Leopold Willmann the Younger, his stepson Johann Christoph Lischke, his daughter Anna Elisabeth with her husband Christian Neuenhertz and their son, Georg Wilhelm Neuenhertz), in his big workshop from Leubus, organized according the Dutch model, worked also some disciples, including Johann Kretschmer from Glogau (Głogów, Poland), Johann Jacob Eybelwieser from Breslau and the Cistercian monk Jacob Arlet from Grüssau and maybe also Justus de Bentum and Franz Hoffmann. Due to its expressiveness and to his technical dexterity, as well as to the speed in executing the orders he received a lot of orders (so many, that he could not honour them all). M. Willmann became the leading painter of Silesia, but his reputation exceeded the limits of this province, because his workshop was appreciated not

only by the patriciate of Breslau, but even by the Czech aristocracy and then Cistercian monasteries from Grüssau and Heinrichau, from Kamenz (Kamieniec Żąbkowicki, Poland), Rauden (Rudach, Poland) and Himmelwitz (Jemielnica, Poland). The prosperity reached by the painter allowed him to purchase an estate near Leubus and to support his son's and his stepson's studies in Italy. He died in Leubus, where for his merits he was buried in the crypt of the monastery, alongside the abbots, contrary to the Cistercian monastic rule. Because his son and legal successor, Michael Leopold the Younger, died a short time later, the workshop of the artist was taken over by his stepson, Johann Christoph Lischke, and in 1712 by the grandson of his sister, Georg Wilhelm Neuenhertz and afterwards was closed, in 1724. Throughout his life, helped by his pupils and assistants, M. Willmann produced 418 paintings and 54 frescoes, and later several of his drawings (barely a few hundred in all) were used by engravers. His "prototypes" were frequently used in Silesia, even to the end of the 18th century, and among painters influenced by him there are both local followers, as the members of his workshop or the Fleming Johann Franz de Backer, and famous artists from Bohemia and Austria, like Wenzel Lorenz Reiner, Peter Brandl, Johann Michael Rottmayr von Rosenbrunn and Franz Anton Maulbertsch. (Concerning the biography and the work of Michael Willmann: Knoblich 1868; Klossowski 1902; Maul 1914; Lutterotti 1930; Lutterotti 1934; Kloss 1934; Steinborn 1959; Lossow 1994; Wagner 1994; Materiały 1995; Koziel 1997-1998; Koziel 2000a; Koziel, Wagner 2001; Koziel 2002a; Koziel, Lejman 2002; Grimkowski 2005; Fitych 2006; Koziel 2006; Koziel 2008a; Koziel 2011; Koziel 2013)

The painting *The Paradise* from the collection of the Brukenthal National Museum (oil on canvas, 114 x 143 cm; inv. 1264), signed and dated (below left, with black: Willman / 1668), was acquired by Baron Samuel von Brukenthal and both the handwritten catalogue of his collection and the first printed guide of the painting collection of the Brukenthal Museum (1844) mentions that it was signed (Mureşan 2007, 183; cf. Csaki 1901, 341; Csaki 1909, 380). The guide from 1844 didn't give more details concerning the signature and also didn't record the datation (Die Gemälde-Galerie 1844, 107). Considering that Michael Csaki mentioned that the painting (Fig. 1) laid for long time in the store, as being damaged (Csaki 1901, 341; Csaki 1909, 380), Valentin Mureşan supposed that this fact could explain its omission in the gallery guide printed in 1893 (Mureşan 2007, 183). Re-

stored and doubled in 1896, the work was hanged in one of the stairways of the Brukenthal Palace (Csaki 1901, 341; Csaki 1909, 380). Being signed and dated (Fig. 4), no doubts were expressed about the attribution of this painting (Mureşan 2007, 183), even if it remained quite less known to the researchers till the early 21st century. Otherwise, the signature is similar to that on the altar painting which renders St. Anthony of Padua, from the church in Wrocław dedicated to him (Fig. 5).

In 1938, although the work from Sibiu was reproduced in a study by Niels von Holst (Holst 1938, 16), the author made no comment about it, and later (even the information from the guides of the gallery of the Brukenthal Museum are frequently quoted in the lexicon edited by Ulrich Thieme and Felix Becker and afterwards continued by Hans Vollmer) it is not mentioned at all in the article about the life and the work of the artist (Vollmer 1947, 32-34). This situation could have a plausible explanation in the inaccurately kept information concerning its precarious state of conservation (ignoring its restoration in 1896), but mainly in the view of Ernst Kloss (Kloss 1934, 70, nr. cat. A.I.156, Fig. 24), mentioned by V. Mureşan (Mureşan 2007, 182), that it would be the repetition of a fragment from a larger work, *The Creation*, kept at that time at the Silesian Museum of Fine Arts (*Schlesisches Museum der bildenden Künste*) from Breslau (Vollmer 1947, 33) and now at the National Museum in Wrocław (*Muzeum Narodowe we Wrocławiu*) (Fig. 12). The conservation interventions due to Hans Hermann, a painter from Sibiu, completed in August 1951, were focused on gluing the canvas on plywood (Fig. 2) and less on what concerns the paint layer, and because they did not bring new information about the work, they were not mentioned later. In the guide of the Brukenthal Museum's gallery printed in 1964, the painting is mentioned as a work by M. Willmann (Ionescu 1964, 20, Fig. 116). Much later, due to the research of V. Mureşan (Mureşan 2002, 125, Fig. 4; Mureşan 2007, 182-183, nr. cat. 108, Fig. 108; Mureşan 2009, 22-23), the interest of the art historians for this work increased. In September 2009, during the preparation of an exhibition and the reorganization of the permanent exhibition, it was handed over to the Laboratory for Preservation and Restoration of the Brukenthal National Museum, for major interventions, which lasted till 2014. During this works, on the base of the data existing before 2007, Andrzej Koziel advanced the opinion that this painting, which he considered as been truly painted by M. Willmann, could be a variant made for the

market of the art collectors, which was painted after the middle part of the work made in the same year for the Cistercian monastery from Leubus, kept now at the National Museum in Warsaw (Muzeum Narodowe w Warszawie) (Koziel 2013, 374-375, nr. cat. A. 195) (Fig. 13).

The originality of M. Willmann's vision is manifested by his preference to depict a wild nature, with fantastic accents even in his landscapes with religious scenes, by renouncing at schematism and conventionalism for scenery with realistic accents, in which the religious motifs appear only as elements whose role is to introduce motion effects in the natural environment they occupy. In this way he moved away from the traditional manner of the painters from the Netherlands (Mureşan 2007, 182; cf. Adriani 1982, 130), how it can be found in older depictions of the Garden of Eden, like at Hermet de Bles, Jacob de Backer, Jan Snellinck the Younger, Jacob Savery the Older, Jan Breughel the Older, Gillis d'Hondecoeter, Roelant Savery, Adrian van Stalbent and Jan Breughel the Younger. The vegetation is individualised now by a clear distinction between the various species and every detail is a reflection of a personal vision of nature, which resulted from the study of the so familiar Silesian landscape (Adriani 1982, 130). The work in the collection of the Brukenthal National Museum, dated in 1668, i.e. right at the beginning of the so-called period of the "fine style" (ca. 1668-1679) from the creation of M. Willmann, is of a particular importance for understanding the great Silesian painter's vision about nature. How it was already noticed (Vollmer 1947, 33), in the late 60's of the 17th century in the artist's creation there is an upgrading of the colour surface, a tendency to render small figures and to diminish the density of the pictorial surface, which makes him to depart from depicting situations of pure physical tension and to give a new iconographical shape to some older themes. How the paintings made for the City Hall of Breslau (1664) are showing, this change of style (concerning the choice of motifs and colours) occurs under the influence of the late creation of Rembrandt: as consequence, people, animals and nature are melting in a whole, which is not emphasized anymore by the dimensions of the bodies, than by the rhythm of the light and of the colour (Vollmer 1947, 33). The fact that the painting from Sibiu, conceived in the mature Baroque's spirit (Mureşan 2009, 22), has an admirable stage-lighting was emphasized already in 1844, in the first printed guide of the gallery of the Brukenthal Museum (*Die Gemälde- Galerie 1844*, 107).

How V. Mureșan remarked, the work from Sibiu (Fig. 1, 3), which can be considered as a "landscape of allegorical and symbolic character" (Mureșan 2007, 182), has also a narrative meaning: the Paradise is imagined as a vast landscape of temperate mixed forest, with huge trees, where the animals live together in peace and harmony, but still quite different from the traditional idyllic image of the Garden of Eden (Mureșan 2007, 182; Mureșan 2009, 22). Placed in the foreground, the crowd of lively and moving animals overwhelms partially the lower register of the composition, but proportionally the landscape is dominating all through its monumentality (Mureșan 2007, 182). Whether domestic or wild, the animals have all a symbolic meaning (Mureșan 2009, 22-23), they generally embodying virtues and defects, even character types. Among the domestic animals, it is worth to notice the presence of a pair of Angora rabbits (with white fur and ruby eyes) and of a pair of turkeys. We believe that the turkey, a bird then recently brought to Europe from the New World, symbolizes the wealth placed by the Providence in those still little known territories. Along the wildlife occurring in northern and eastern Europe (the moose, the roe deer, the red deer, the fox, the bear, the badger, the lynx, the wisent), there are also exotic animals, such as camels, elephants, rhinoceros, peacocks, parrots and apes, but also a constrictor snake, coiled around the trunk of the Tree of Knowledge. However, irrespective of the presence of a cougar in the vicinity of the scene of the original sin, the absence of the exotic cats (the lion, the tiger, the leopard) is surprising, because they were quite well known in Europe, where the lion and the leopard were commonly met in the heraldry as charges of the shield or as supporters, but also in many depictions of the Paradise in the works of the painters from the Netherlands. We would assume thus that this omission might allude to the state of purity from the beginnings of the World, when the sin of pride does not contaminate yet the nature, being limited to the fallen angels, whose symbol is the serpent tempting the first humans, to lose them. The precise drawing allows us to determine, among various small plants in the landscape, the nettle (*Urtica sp.*), the climbing roses (*Rosa sp.*), the tulips (*Tulipa sp.*) and the mullein (*Verbascum sp.*). To invigorate the composition in terms of colour, the artist rendered birds (other than the already mentioned ones) and butterflies, but their precise determination is often difficult or even impossible. Over the whole scene, at heights where no other bird flies, is outlined in broad strokes of creamy white a bushy tailed bird-

shaped silhouette, which we believe should be the bird of paradise (Fig. 11), known to the Europeans since the 16th century (when it was mentioned by Antonio Pigafetta, the chronicler of Magellan's expedition around the world) and which sometimes was identified with the phoenix (Harrison 1960). Particularly interesting is the fact that the inventory of Rembrandt's goods written in 1656 also mentions such a bird, stuffed of course, as being kept in a crate in his workshop waiting room (Golhany 2003, 99), which would suggest its using as a model for the artist. By placing the unicorn (Fig. 10) in the centre of the composition, the animal scene acquires sharper symbolic meanings, because this is an ancient symbol of power, but also of purity, which in the Christian iconography depicts the Virgin Mary, as well as the "spiritual arrow," i.e. the divine revelation (Mureșan 2007, 182; Mureșan 2009, 22), which discovered to the man also the utility of the domestic animals that occupy (albeit in different planes) the middle of the work, generally at a short distance from the unicorn. The location of domestic animals in the vicinity of the unicorn explains perfectly the lack of the pig, which became the traditional symbol of the impurity and of the indolence towards living in squalor. In the far right of the work, a sheepdog lying muzzle on paws (Fig. 8), symbolizing the watcher of the humans, of the house and of the flock, but also the guardian of the faith, as allusion to the Dominican Order (which initially provided most of the staff of the Inquisition) seems at first and swift regard to be a skull, a strange *memento mori*, rendered in the cryptic spirit of the medieval painting or of the charades in the mannerist painting. To preserve the religious customs, the artist added in background right, among the trees of the forest, the silhouettes of Adam and Eve, the Biblical ancestors of the mankind, who are rendered in the scene of the original sin (Fig. 7), near the Tree of Knowledge (Mureșan 2007, 182; cf. *Genesis*, 3:3-6), which considering the size and the appearance of its fruits seems to be rather an orange tree than an apple tree. Particularly interesting is that the primordial human couple is rendered with two pets: it is a cat, a symbol of femininity, staying next to Eva, respectively a greyhound, staying next to Adam and looking to him, suggesting that it is the representative of the species of man's closest friend, which will help him to survive after his expulsion from the Paradise. Farther behind Adam, in attack position, is rendered a wisent, the noble game whose spreading area was restricted in the mid-17th century to the territories of the eastern extremity of Europe, identified then as being the

borders of the civilized world, beyond which are living only the barbarians and the savages, whose backwardness is due to the domination of the Devil, as a consequence of a weaker presence or even of the absence of the Catholic Church in this region. Isolated on the far left of the work, on a dark background and away from other animals, there is a mouflon up on a rock (Fig. 9), looking to the centre of the scene, to a pair of apes perched on another rock, lying on the other side of a cliff, which seem to regard him with interest and attention, while far behind them, but in a plane which is closer to the viewer there is a white rooster, a symbol of vigilance, which adopted an aggressive attitude, sounding a warning cry to the mouflon, as to scare it. Unlike the mouflon, disproportionately small if compared to the apes (although they are in a more distant plane), few domestic goats are rendered right in the strongly stage-lightened centre, along with the cow and the horses and not far from the unicorn, which involves their perception as auspicious and useful animals, unlike the wild carnivores (the fox, the bear, the badger, the cougar and the lynx) that all are amassed in the right half of the work. Thus, rightfully can be said that just the mouflon is that which is disturbing somewhat the general atmosphere of peace and harmony, about which V. Mureşan noticed that dominates also the composition of another work by M. Willmann from the collection of the National Museum Brukenthal, Noah's Ark (oil on canvas, 150 x 93 cm, inv. 1265), which he considered to be a pendant (Mureşan 2009, 23), although it is much different in size and is made in an horizontal format (Kozieł 2013, 373).

Albeit rarely mentioned both in the guides of the gallery of the Brukenthal Museum (Die Gemälde-Galerie 1844, 106, nr. cat. 48; Csaki 1901, 342, nr. cat. 1218; Csaki 1909, 380, nr. cat. 1265) and by the Romanian research (Mureşan 2009, 23), Noah's Ark is, paradoxically, quite well known to the foreign researchers (Dlabacž 1815, col. 378, nr. 10; Knoblich 1868, 18; Klossowski 1902, 31; Maul 1914, 48; Kloss 1934, 70-71, nr. cat. A.I.155; Neumann 1975, 161; Kozieł 2000a, 176; Ślaşk 2006, nr. cat. III.5.12; Kozieł 2013, 373-374, nr. cat. A.194), because it was mentioned in the painter's biography written by Joachim von Sandrart (from the Latin version of his work *Teutsche Akademie*) and before to enter in the collection of Baron Samuel von Brukenthal, it belonged to the collection of the chancellor of the Bohemian Kingdom, Count Johann Hartwig von Nostitz-Rieneck (1610-1683) from Prague. E. Kloss, who considered that because the unskilled rendering of the

animals and the lack of chromatic expressiveness the work could belong to the Prague phase (1653-1655) from the early creation of the painter, claimed incorrectly that from the commissioner it would have succeeded to Lobris (Luboradz, Poland), in the collection of Count Christoph Wenzel von Nostitz-Rieneck, a representative of the Silesian branch of the said chancellor's family (Kloss 1934, 71). The opinion of the above mentioned Silesian researcher is due to the fact that in 1815 the painting is mentioned as being in Silesia (Dlabacž 1815, col. 378, nr. 10), a view held also by some researchers of the art from this region (Knoblich 1868, 18; Klossowski 1902, 31), but disputed by others (Maul 1914, 48), including by quoting written sources from the early 19th century, to which it seems that E. Kloss did not show enough trust (Kloss 1934, 157, n. 78). In fact, Gottfried Johann Dlabacž, mentioned as a primary source by those who considered that the work would be preserved in Silesia, does not specify its keeping place, then only that it was made for the said chancellor of the Bohemian Kingdom (Dlabacž 1815, col. 378, nr. 10), assuming thus too, of course, that the painting would be in the propriety of the Silesian branch of the commissioner's family. At that time the picture was already in Sibiu, at the Brukenthal Museum, because it is mentioned in the handwritten catalogue (dated at ca. 1800) of the collection of Baron Samuel von Brukenthal, where it is attributed to an unknown German painter. According to the guide of the Brukenthal Museum's gallery printed in 1844, it is a signed work, although this information is not recorded in the later published gallery guides (excluding that of 1893, which does not mention this painting at all) and the painting was reluctantly attributed to M. Willmann. One explanation for this change in the assignment of the work may be due to the restoration from 1897, which does not seem to have been a carefully done one, both from what could be found concerning the painting *The Paradise* (as in this case the interventions from 1897 and 1951 did not affect the scene of Adam's modelling) and from what is known about the large number of works (580) restored just in Sibiu in July – September 1897 by the Imperial Counsellor Eduard Gerisch, custodian of the Imperial and Royal Academy of Fine Arts in Vienna (Csaki 1909, IV). Doubts may have appeared also because, due to the great number of works made by M. Willmann and of the fame enjoyed by the artist, it was thought that in his workshop would have worked many disciples and collaborators, when in fact it was rather a family business, in which were

involved also some apprentices (Kozieł 2002b). The composition of the painting Noah's Ark shows, in fact, the moment when the animals are boarding the ark and thus it makes the praise of harmony and order as premises of the universal salvation promised by the Providence, unlike *The Paradise*, whose point is the glorification of the perfection and of the beauty of the Creation, according to the principle that the pedagogical and religious debate should be focused on the close relation between model and the artistic product (Adriani 1982, 134). In our opinion, the message of the two works seems to have inspired both by Psalm 103 and by the insistent theistic discourse of the Jesuits, who supported their argumentation not only by appealing to the authority of the scriptures and of the theologians, but also by the means of logic and of a solid knowledge about nature and man and propagated it skilfully using the already established forms of expression such as music, painting and drama with religious themes. Götz Adriani, who considered that no other German artist had so firmly and successfully engaged for the cause of the Counterreformation like M. Willmann, emphasized however that the painter contributed to the enrichment of the religious themes with a series of profoundly original ideas (Adriani 1982, 132).

The realistic and therewith symbolic character of the composition of the work *The Paradise* from the National Brukenthal Museum, which was assessed by E. Kloss as "a splendid variant, full of strongly resonant life" (Kloss 1934, 70), is not actually singular in the context of the whole work of the artist who sometime after 1697 made together with his workshop also a painted ceiling for the castle from Mönchmotschelnitz (Moczydlńica Dworska, Poland) of the abbots of the Cistercian monastery from Leubus, whose characters are related to the theme of the Eucharist and of the mystical wedding and are inspired by the emblematic prayer books (Kozieł 2008b). But, how it was emphasized by Andrzej Kozieł, the monographs dedicated to the artist focus especially on the reconstruction of his biography, on discovering his inspiration sources and the directions of his stylistic evolution, but not also on the problem of the influence of his ecclesiastic commissioners, which was perceived generally as an impediment (Kozieł 2002a, 549-550), but whose importance began to become clearer in recent times (Mikuda 1985; Mikuda-Hüttel 1997b; Kozieł 1999; Kozieł 2002a; Frankowska-Makala 2002; Nyga 2002; Kaczmarek, Witkowski 2002; Grimkowski 2005; Fitych 2006; Kozieł 2006), touching thus the traditional

view, according to which the religious character of the painter's creation would be a consequence of the peculiarities of his personality. The outcome of the recent research is of a great importance for the problem of the perception of the artist and of his work, as by the theme of his works, but also due to the environment of his commissioners dominated by the Catholic clergy and to the legendary imprint of a strong confessional message of his biography, as it was propagated by the Cistercians from Leubus, M. Willmann entered in the consciousness of the posterity as the ideal model of a Catholic artist, though during his life (according to the opinion of A. Kozieł, based on the contemporary relations of his biographer Joachim von Sandrart) he was above the religious differences (Kozieł 2002a, 554-555; cf. Kozieł 2000b).

Considering that the theme of the painting *The Paradise* from the gallery in Sibiu is not one of the specific themes of the Counterreformation, like those of the most works of the artist (Kozieł 2002a, 551-552), it is difficult to say to what extent it may have been the result of a personal choice, of some of his own reflections on nature and on the humans. Some details of the vegetation, of the birds' feathers or of the animals' and humans' bodies are visible (and therefore had to be seen) from an obviously lower distance than that at which the altar painting or the frescoes in the churches, whose scenes are totally different, related to the cult of the Virgin Mary or to the lives of the saints. The didactic and also decorative character of the work, but especially the fact that the restoration interventions proved that it is a fragment from a large size composition, seem to suggest that it was intended for the refectory of an abbey or for a large room of a palace, maybe that of the abbots.

The patch with the image of the mouflon, added by sewing, comes from another area of the original work (called, in fact, *The Six Days of Creation*), now lacking, but at that time still existing (obviously, in an advanced state of decay). According to the 1668 preparatory drawing (Fig. 14), this patch was located to the left (Fig. 15), at a considerable distance from the fragment that survived in the painting collection of Baron Samuel von Brukenthal. Its adding to the main fragment from the original work, certainly sometime before the restoration of 1896 (which is, incidentally, the first attested after the death of Baron Samuel von Brukenthal, occurred in 1803) made necessary to integrate the surrounding area, on which was painted the scene of Adam's modelling from clay (to which are looking, in fact, the apes!) (Fig. 6), with a lion

couchant to the right at the feet of Adam (now lacking). Thus, this area was overpainted as a dark background, on which were outlined brief landscape details, that making obvious the intention of the unknown painter-restorer from the 18th century to create for the integrated fragment a context to which it wouldn't seem strange, in a certain sense. From the perspective of a discourse about the fall of the ancestors of mankind, he tried to suggest that the mouflon would also be a manifestation of the Devil (other than the snake in the scene of the original sin), that by exploiting the structure and the composition after the diagonals of the work, according to the Mannerist canon of deciphering such compositions, the pair of monkeys appears to mimic the behaviour of the primordial human pair, placed in a more remote plane from the opposite end of the work and some above. By removing these interventions was found that the initial scene of Adam's modelling, which according to the biblical narrative took place in the sixth day of the Creation (*Genesis*, 1: 24-31) is preserved in a sufficient degree that its significance can be recognized, what changes also the viewer's perspective on this sector of the work: between the man, created to master the nature and all the animals (*Genesis*, 1: 26-28) and the latter ones, among them also the apes, curious animals whose intelligence and likeness of the man were well-known, there is a difference, perceived as established by Providence and which consists in the divine plan of salvation of the descendants of Adam and Eve, as a result of the original sin.

Given the fact that the work appears to have been made for a monastic community, but also the age of the interventions done by re-using an original fragment of a now lacking part of the work of M. Willmann, this intervention made in the spirit of the original composition remembers a remark of A. Koziel, that the artist's works were kept with piety in churches and were subjected already since the 18th century to conservation interventions, and if the architecture of the churches underwent changes, they were integrated into the new context (in Grüssau, in Poland and in Žďár, in Czech Republic) and sometimes it happened even to remove some elements of the main altar (in Warmbrunn / Cieplice Śląskie-Zdrój, Poland and in Würben / Wierzbna, Poland), that his works become the main object of the religious and artistic interest (Koziel 2002a, 554). As noted, another painting by M. Willmann, *The Paradise*, from Muzeum Narodowe we Wrocławiu, was also restored in the 18th century, while it was still in the monastery at Leubus, which involved a dimensional reduction

on its height from 188 to 177 cm, by the removal and the replacement of two strips of the original canvas (top and bottom) with the rendering of a lion and of a deer with narrow strips with the same images (Koziel 2013, 460), hence in a manner recalling the discovery of the restorers of the work from Sibiu. The fact that the large work entitled *The Six Days of the Creation*, to which belongs the fragment entitled *The Paradise*, preserved at the Brukenthal National Museum was one of the most important commands is indicated also by the fact that, in the present state of research, the preparatory drawing made for its execution and another one, entitled *The Ancestors of St. Joseph* (dated at ca. 1692, from the Kupferstichkabinett in Berlin), made for a commission for the St. Joseph's church from Grüssau are the only works of this kind by M. Willmann known until now (Koziel 1998, 235; Koziel 2001, 213), along with other two drawings (Gerszi 2002, Fig. 12 and 15) from the Szépművészeti Múzeum Budapest, both inspired by two copper engravings: one from 1642, by Jonas Suyderhoef after *The Fall of the Angels* by Peter Paul Rubens from the Alte Pinakothek in Munich and the other one by Lucas Vorstermanns, dated in 1621, after a smaller version (now lost) of the same painting, also from the Alte Pinakothek in Munich. Both drawings from Budapest may have served as projects for a masterpiece of the painter, i.e. the altar dated in 1693-1694 of the St. Michael's church in Litvínov (Czech Republic), for a *bozzetto* dated in 1668-1675, once in the collection of Hans Bimler (now lost) which was used by the artist's workshop for a painting (now also lost) in the dome from Wrocław, of which a later copy (lost, too) in the Museum für Kunstgewerbe und Altertümer of the same city, as well as maybe also for the preparatory drawing (perhaps for a book illustration) dated in the 80's of the 17th century from the Germanisches Nationalmuseum in Nürnberg (Gerszi 2002). These preparatory drawings are so rare because it seems that the artist used to outline his work directly on the prepared canvas, like Rembrandt (Koziel 1998, 235; Koziel 2001, 213-214). As consequence, how Teréz Gerszi noticed, such preparatory drawings were made only for big paintings (Gerszi 2002, 42). The research on how M. Willmann created his compositions highlighted the important role of the "prototypes", i.e. the prints he acquired and the sketches he made laboriously after the works of great artists in his youth, from those of the early 16th century and to his contemporaries (Koziel 1997-1998, 63-64), and some suitable sections of the preparatory drawings, more accurately and more enforced, could be natu-

rally used also in the same way, when it was necessary to make versions of a certain work.

As early as 1947 it was noted that M. Willmann's new vision about nature appears clearly expressed just through the enchanting representation of the Creation, in the above mentioned painting from the collection of the former Schlesisches Museum der bildenden Künste in Breslau (Vollmer 1947, 33), now at the Muzeum Narodowe we Wrocławiu (Fig. 13), which is dated in ca. 1667 by Ernst Kloss followed by Bożena Steinborn and Hubertus Losow, by Marek Pierzchała after 1672 and beginning with the 60's of the 17th century by Rüdiger Klessmann (Kozieł 2013, 460). These more recent opinions contradict the hypothesis of E. Kloss, that the said painting from Breslau would be the first attempt of the painter to approach the theme of the Creation, being thus some years older than the other works of this cycle (Kloss 1934, 70). As mentioned, as a result of another wrong remark of the same Silesian researcher, the work from Sibiu was considered to be a repetition of a fragment from the mentioned painting, which became a stand-alone version by adding the scene of the original sin and the huge crown of the tree from the left side, which was necessary to complete and to balance the general view (Kloss 1934, 70; Mureşan 2007, 182). A. Kozieł believes instead that the picture from Sibiu (about he thought it was painted on wood) would be a variant after the middle part of the work *The Six Days of the Creation* (oil on canvas, 210,5 x 346 cm), made for the Cistercian monastery of Leubus (currently at the Muzeum Narodowe w Warszawie, inv. M. Ob. 1037) (Fig. 13). He also considered that M. Willmann repeated (with some changes) both the configuration of the scene's composition and the rendering of various trees and animals (Kozieł 2013, 374-375). But A. Kozieł admits that for making the work from Warsaw the painter, who used Dutch Mannerist prototypes, should have combined also the results of his religious works with animal themes from Sibiu and Wrocław (Kozieł 2013, 436), which implies that they would be earlier and therefore not inspired by the work from Warsaw. There is no doubt that the painting from Warsaw was commissioned by the abbot of the monastery from Leubus, because it bears the monogram of Abbot Arnold Freiberger, the date 1668 and the coat of arms of the abbey (Kozieł 2013, 435). The work from Wrocław (oil on canvas, 171 x 268 cm, inv. VIII-2660) comes also from the monastery from Leubus (Kozieł 2013, 459). On the veracity of the tradition preserved in the abbey, recorded in 1799, according to which the painting was com-

missioned also by the mentioned abbot (Kozieł 2013, 461), depends the indication of its approximate dating. According to the opinion of M. Pierzchała, the picture from Wrocław would be inspired by "the Mannerist ideas" of Hans Vredeman de Vries and Izaak van der Blocke, engraved by Schelte à Bolswert, as well as by the forest landscapes of Peter Paul Rubens, and R. Klessmann believes that M. Willmann used the illustrations of the Crispijn de Passe the Older for *Liber Genesis*, published in Arnhem in 1612 (Kozieł 2013, 460-461).

At the National Library (Biblioteka Narodowej) in Warsaw is kept the preparatory drawing which inspired, in varying degrees, all three paintings, from Sibiu, Warsaw and Wrocław. This drawing comes from the former Schaffgotsch library from Teplice and A. Kozieł believes that it was made for the great painting from the monastery of Leubus, currently kept at Warsaw (Kozieł 2000a, 95) and identified with those mentioned by Joachim von Sandrart in the biography of the artist (in Latin), based on the information transmitted to him by M. Willmann himself (Kozieł 2013, 436), at first through a letter from September 1682 kept at the Albertina in Vienna (Klessmann 2002, 16). The drawing (312 x 675 mm, inv. I. Rys. 15292) is made on four sheets of paper pasted on the right edge with grey paper, marked in watermark with a two-headed eagle on the first and on the third sheet in a mixed technique (pen with grey ink over pencil traces, grey glazes, grid grille in sepia, frame in black pencil) and was dated in 1668 (Kozieł 2000a, 232 and 235, nr. cat. A.I.4, Fig. 81; cf. Kozieł 1998, 235, Fig. 4; Kozieł 2001, 213, Fig. 1). The extremely precise drawing is one of the only two preserved authentic works of this kind, about which (as shown also by the grid network) can be said that the painter used right in the execution phase of the composition, at the transposition of the image on the prepared canvas (Kozieł 2000a, 95). It shows together all the six days of the Creation, arranged from left to right in chronological order, just like in the picture from which comes the fragment preserved in Sibiu, in the collection of the Brukenthal National Museum, as shown by the discovery of the fragment with the mouflon sewed over the scene of Adam's modelling. On a careful examination, it is found that the fragment preserved in Sibiu followed the preparatory drawing with extreme fidelity, to the smallest details, such as for example the number of the nettle and mullein leaves. Given this finding about the relationship between this fragment and the preparatory drawing, it may be estimated that the size of the

work from which the fragment comes was of 143 x 320 cm (i.e. 45760 cm²), which means that it corresponds to only 35,625 % of the original work. The estimated dimensions of this work are not close to those of the paintings from Wrocław and Warsaw, which indicates that it was intended as a stand-alone work, without any relation to the both, being made probably for a completely different commissioner. Instead, in the painting from Warsaw (Kozieł 2013, 436) the chronological sequence of the Biblical events is reversed from right to left, suggesting the reversal of the drawing used as a model by the painter, for reasons which are harder to explain now, but probably dependent on the particularities of the room for which it was intended. But the work kept in Warsaw is of considerably larger size than that from which the fragment preserved in Sibiu comes, that to paint it the artist had to use a different grille, to another scale. For M. Willmann, who could not afford to be educated by the most important painters from the Netherlands and from Italy, but was forced to work after prints and drawings, not after nature, to work according to "prototypes" was, in fact, of a vital importance. That is why, in his correspondence with Joachim von Sandrart, he presented himself as a "country artist", knowing surely that at the time it was thought that the fame of a painter is higher, as it was forced to learn and affirm far from the great artistic centers, wanting to show that he actually surpassed his condition of a painter in the service of a monastery, specialized in religious themes, as shown by the emphasis he puts on his secular commissions (Klessmann 2002, 17-18).

The picture kept in Wrocław shows the events which in the Biblical narrative of the Creation are later than the creation of Eve, which ends the preparatory drawing: the moment when God entrusted Eve to Adam and the expulsion from the Garden of Eden of the two mankind's ancestors by the angel armed with a sword of fire. The preparatory drawing served here to the artist only as a model for rendering of some animals or groups of animals. Moreover, A. Kozieł noted that although R. Klessmann and M. Pierzchała related the painting currently preserved in Wrocław to the monumental work from Warsaw (made also for the monastery from Leubus), the picture from Wrocław was designed as an iconographic complement for the depiction of the events of the Creation, his finding being supported both by the similarity of the composition and of the drawing, as well as by the perception of the work in the 18th century, when both paintings were still hanging next to each other in the same room, as it results from the biography of

M. Willmann, compiled in 1799 by Gabriel Otto, the last abbot of the monastery of Leubus, which mentions Abbot Arnold Freiberger as the commissioner of the both works (Kozieł 2013, 461). If the information submitted by Gabriel Otto is true, it means that the painting currently kept in Wrocław may have been started before Abbot's Arnold Freiberger last year of life (1672). The comparison of the fragment kept in Sibiu with the preparatory drawing shows certainly that the work from which this fragment comes was the first made according to the drawing and not the work from Warsaw and thus is risen the question of identifying the possible commissioner of the work, now almost completely lost.

While the large format paintings for the interior of the churches were painted by M. Willmann in a free sketched manner, the picture from Warsaw (whose stylistic and compositional conservatism has often been noted) is made with great attention for the details and has a delicate texture, which suggests that it was meant to be viewed from a short distance (Kozieł 2013, 436), like the fragment kept at Sibiu. It is hard to admit, however, that the work from which this fragment comes would have been executed for the market of the art collectors, as previously assumed (Kozieł 2013, 375). It seems that it was intended rather for the castle from Mönchmotschelnitz of the Cistercian abbey of Leubus or for a subsidiary of it, like the monasteries from Grüssau, from Heinrichau or from Kamenz. Considering both the close relationship of the painter with the monastery from Grüssau, conducted during 1660-1696 by Abbot Bernhard Rosa (1624-1696), and the fact that the sum of the reckonings written a few years later on the backside of the preparatory drawing, stating various amounts and the names of various New Testament scenes (that seem to refer to the drawings executed by M. Willmann to illustrate the *Prayer Book with the Passion*, printed in 1682 by the abbot of this monastery) corresponds to a record from July 11, 1678 in the register of the said monastery concerning the payment of the additional expenses concerning the making of the main altar (Kozieł 2000a, 232 and 235), it seems likely that the preparatory drawing with the depiction of the six days of the Creation was originally intended for this monastery and hence that the work from which the fragment preserved in the Brukenthal National Museum (which follows so closely the project) could be a commission of the same Cistercian monastery from Grüssau.

The discoveries of the restorers and the comparison of the fragment kept in Sibiu with the preparatory drawing held in Warsaw, as with the picture *The Paradise* from Wrocław and with the painting *The Six Days of the Creation* from Warsaw prove therefore that the work from the collection of the Brukenthal National Museum is not a variant after one of the two paintings from Poland, but a separately made work, while between the paintings from Warsaw and Wrocław, designed and initially even exhibited as pendants, there are dimensional and even chronological differences, and their correlation with project design is lesser, due both to the slightly different sequence of the events of the Creation in the painting from Warsaw and to the complement of their illustration by that from Wrocław, and to the freer rendering of the animals and of some plants in the both works from Poland. A. Koziel, who did know the picture from Sibiu only from an image previous its restoration (Fig.

1), believed that the work from Warsaw is the most appreciated variant by the painter himself, who mentioned it in his biography sent to Joachim von Sandrart (Koziel 2013, 436). Therefore, the discoveries following the restoration of the fragment preserved in Sibiu (Fig. 3) revise substantially the existing knowledge about these three paintings by M. Willmann kept in Sibiu, Warsaw and Wrocław and about their relationship with the preparatory drawing held in Warsaw. Moreover, during the last two decades the research of A. Koziel on the biography and the work of M. Willmann removed also other old "myths", such that (which occurred due to the incorrect assignment of the Rudolpine age drawings, whose author is actually David Heidenreich) that during his stay in Prague the artist studied the Mannerist graphic from the collection of Emperor Rudolf II (Koziel 1997) or that, during his stay in Amsterdam, he came in contact with Rembrandt (Koziel 2008c).

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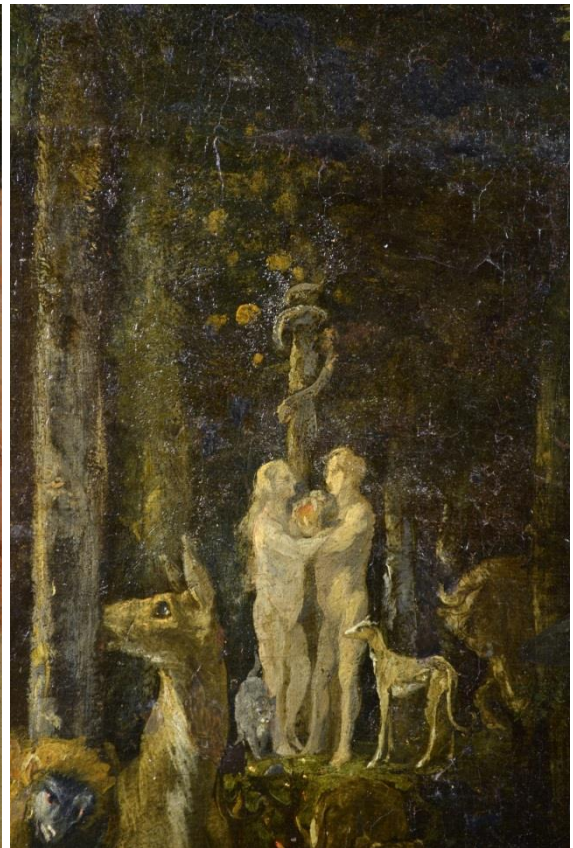
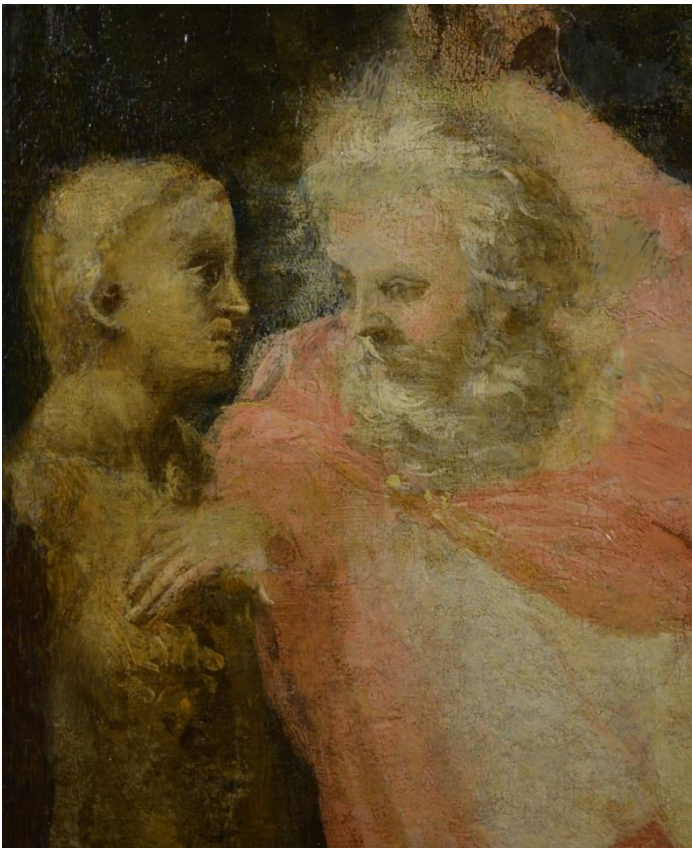


2. The painting *The Paradise* from the gallery of the Brukenthal National Museum in Sibiu (before restoration). Verso.



4. The painting *The Paradise* from the gallery of the Brukenthal National Museum in Sibiu (after restoration). Detail: the signature and the dating in 1668.

5 The signature of the artist on the altar painting *St. Anthony of Padua*, from St. Anthony's church from Wrocław.



6. The painting *The Paradise* from the gallery of the Brukenthal National Museum in Sibiu (after restoration). Detail: Adam's modeling from clay.

7. The painting *The Paradise* from the gallery of the Brukenthal National Museum in Sibiu (after restoration). Detail: the scene of the original sin.



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16. The painting *The Paradise* from the gallery of the Brukenthal National Museum in Sibiu. Record with the pieces of cloth composing the support.

THE CONSERVATION OF A SKETCH DEPICTING THE PROJECT OF THE MAIN ALTAR FOR THE ST. MICHAEL'S ROMAN CATHOLIC CATHEDRAL IN ALBA IULIA

Iulia-Maria PASCU*, Alexandru Gh. SONOC**

Abstract: *The restored item, of a particular documentary importance, is the sketch of the project for the main altar for St. Michael's Cathedral in Alba Iulia. The conservation status of the document before restoration and the treatments applied by the restorer are presented in detail in this work.*

Keywords: *handmade paper, watermark, treatment, tear consolidation, old repair removal*

Rezumat: *Piesa restaurată, de excepțională importanță documentară, reprezintă schița proiectului altarului principal al Catedralei romano-catolice "Sf. Mihail" din Alba Iulia. Starea de conservare a documentului înainte de restaurare și tratamentele aplicate de către restaurator sunt amănunțit descrise în această lucrare.*

Cuvinte cheie: *hârtie manuală, filigran, tratament, consolidarea fisurilor, îndepărtarea vechilor reparații*

I. The historical meaning of the restored document

The restored document (Fig. 1) is an undated sketch of the project for the main altar of the St. Michael's Roman Catholic Cathedral of Alba Iulia / Gyulafehérvár / Karlsburg (Fig. 2). In Transylvania, the Counterreformation promoted at the end of the 16th century and in the early 17th century by the Báthory family was countered by the measures of the Protestant princes from the mid-17th century and gained a new, stronger impetus after the annexation of the country by the Holy Roman Empire, after its anti-Ottoman offensive following the second Ottoman siege of Vienna (1683), which failed due to the saving intervention of John III Sobieski, King of Poland. Of all the Protestant denominations, here the Counterreformation hit most hardly the Unitarian Church, whose believers have lost their public offices and had to return to the Roman Catholic Church most of its churches (Trócsányi, Miszkolczy 1990, 415). These measures were also a consequence of the fact that since the mid-17th century the prestige of the Unitarian Church was strongly affected, by being put under the control of the Diet and of the Reformed Bishop since 1638 (Szegedi 2007, 52), as well as by losing its aristocratic patrons and remaining

thus, practically, the confession of the city of Cluj / Kolozsvár / Klausenburg and of some villages in the Szeklerland / Szekelyföld (Szegedi 2007, 52-53). Among the churches returned following the Habsburg asks there is also the Roman Catholic Cathedral of Alba Iulia, seized by the Unitarians during the spread of the Reformation. As a consequence of the iconoclasm promoted by the most radical currents of the Reformation, including also the Unitarian one, the gothic artworks inside the cathedral were destroyed, being regarded as expressions of the "Catholic idolatry" and of the century-old spiritual omnipotence of the Catholic Bishops of Transylvania. Founded in 1009 by King Stephen I the Saint of Hungary, the Catholic Diocese of Transylvania was strongly affected both by the Ottoman conquest and by the spread of the Reformation, which made Bishop Paulus Bornemisza (1554-1579) to be *de facto* deprived of his diocese. After his death, in terms of the Holy See the Diocese of Transylvania remained vacant over the period 1579-1600 and again during 1607-1697, as the Reformed Princes of Transylvania installed Calvinist bishops, who were not recognized by the Papacy. Accordingly, the realization of a new Catholic altar became a primordial necessity to restore the prestige of the Roman Catholic

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Diocese of Transylvania.

The examination of the sketch of the project shows a late Baroque altar with neoclassical elements. Three steps are added to a base imitating the squared stone blocks masonry. The section above the base symbolizes the ark of the Testimony of Lord (*arca Testamenti Domini*), decorated with three reliefs and flanked on both sides by one cherub praying kneeled on one volute. The ends of the Ark are decorated with a sequence of three decorative cartridges, in which there is a garland, a rosette and respectively an inscription. Under the central relief there is a cartridge with a *tabula* decorated with garlands, and below each of the other two reliefs there is one garland. The central relief of the ark, which is actually the door of the tabernacle door keeping the ritual vessels with the St. Communion, is shaped like a round arch, surmounted by two cherubim respectant. It shows a chalice with the host surrounded by rays and above there are two praying cherubim, an image that alludes to the feast of the Most Holy Body and Blood of Christ (*solemnitas Corporis et Sanguinis Domini Sanctissimi*), commonly called briefly "Body of Christ" (*Corpus Christi*). The other two reliefs are placed in oval medallions, separated by pilasters decorated with a rosette and other ornamental plants and framed by a ribbon whose bow is just below the medallion. The left relief shows three people seating at a table (of which the middle one has a ray halo around the head, being thus identified with Jesus Christ), a scene which shows obviously the supper at Emmaus. The right relief is depicting the Baptism of Jesus. Above the ark there is a step decorated with cartridges, as well as with pedestals and consoles supporting urns decorated with garlands. On this step there is a pedestal, also decorated with garlands, supporting a round canopy, which houses a crucifix. The canopy is supported on smooth Corinthian columns, above which there is a dome and on it a Latin cross botonny, each of its quadrants being decorated with a bundle of rays. On each side of the canopy there is a pedestal decorated with a rosette and a garland, on which is seated an angel, accompanied by another, who is standing. On the left, in the cup held by the sitting angel the other one is squeezing a bunch of grapes, and on the right the sitting angel holds a sheaf of corn and the other two loaves. These statuary groups allude to the Eucharistic mystery, and to the abundance that rewards the faith of the inhabitants of the country. The base of the dome is decorated with four smouldering urns, symbolizing the offerings of incense, but maybe also the four synoptic gospels.

On the left side of the document there is an oval seal of red wax (Fig. 3), accompanied by a German inscription in typical italics of the 18th century (Fig. 4): *Ignatz graf von Batthyany / bischof von Siebenbürgen* (i.e. "Ignatz Count von Batthyany, Bishop of Transylvania"). The right half of the inscription overlaps the drawing, in the area of the altar's base. The seal shows the coat of arms of the Batthyány family, with bishop attributes: oval shield topped by the coronet of a count and above it the galero of a bishop and charged with the upper half of a lion rampant, holding a hussar sabre in his mouth and placed in the cave of a mountain, on whose top is rendered a pelican in her piety. Compared with the family coat of arms of a relative of this bishop, Josephus von Batthyány (1727-1799), himself a Bishop of Transylvania (1759-1760), then Archbishop of Kalocsa (1760-1776) and Archbishop of Esztergom and Primate of Hungary (1776-1799), is known that the shield is Azure, the cave is Sable, the lion and the pelican's nest are Or, the sabre has an Argent blade and an Or handle, the mountain, the pelican and her litter are all Argent, and the pelican's beak and the drops of blood on her chest are Gules (Fig. 5). According to the heraldic rules for the Catholic clergy (excepting that from China), the bishop galero should be Vert. The nature of the hatches on the seal confirms the colour of the bishop galero, of the shield and of the cave.

Count Ignatius von Batthyány (1741-1798) was Bishop of Transylvania (1781-1798) and is known mainly as the founder of the celebrated library of Alba Iulia (1784), known later as the *Batthyanaeum*. Therefore, the sketch depicting the main altar of the St. Michael's Roman Catholic Cathedral of Alba Iulia, being signed by this bishop, dates from the late 18th century.

To right, just above the last step of the altar, there is an inscription in ink, on three lines, also in italics, typical for the German writing of the 18th century. It seems to be also a signature, but in continuous writing (*scriptio continua*) (Fig. 6), belonging to the owner of the adjacent seal (Fig. 7): *Boromme / KurzbaumvonVindenteleki*, i.e. Borromäus Kurzbaum von Windenteleki (*Borromme* being a misspelling for *Borromä*, a dialectal Austrian form of *Borromäus*, like *Andrä* for *Andreas*). About whom this person could be there is not more information. Unfortunately, the seal is illegible, because of its bad imprint or to the wear of the mark, if it was engraved in a soft rock or easy to be etched, like some varieties of turquoise, e.g. The third line of the inscription is difficult to read and

seems to be ciphered, since it is actually a sequence of letters without any apparent meaning: *Bbrzsecrréhlmöpeg:lorps* (being possibly that instead of *z* to be read in fact the letter *j*, instead of *é* to be read the letter *i* and instead of *g* to be read the letter *y*). It seems very likely that Borromäus Kurzbaum von Windenteleki was the bishop's secretary (bischöflicher Sekretär or Bischofssekretär), how the letters *Bbrzsecrréhlmöpeg* would suggest. The cryptogram is, maybe, a hidden recommendation, concerning, perhaps, the acceptance of project or/and the price of the altar.

Below this drawing, to left of the partial view from above of the altar, there is the following inscription in German, with typical italics of the 18th century (Fig. 8): *Anmerckungen und Maasstab seind / Dem beyligendem Ris beyzubehalten* (i.e. "The guidelines and the scale on the attached plan to be retained"). This partial view is partially overlapped by the round seal of the Brukenthal Museum with German legend, dating earlier than the nationalization of the institution (1948). On the left there is a record in black ink, also in German, with typical italics of the 19th-20th century: *Skizze zu einem Altar – wahrscheinlich für) Karlsburg / K(upferstichkabinett).II 4* (the cipher 3 is deleted and modified by a chemical pencil to 4) / *in Lithographien* (i.e. "Sketch for an altar – maybe for Karlsburg / The Copper Engravings Study. II 4 in Lithographs"). The word *Lithographien* is deleted and the word *Handzeichnungen* (i.e. "Hand Drawings") was written over it by chemical pencil, maybe during the 20th century. It is a change of management, the paper passing, in the Copper Engravings collection, from the Lithographs fund into the Hand Drawings fund.

II. Description of the document before conservation

The sketch (Fig. 1) is drawn in black ink on handmade paper. The area drawn is clearly delineated with ruled graphite lines and the image itself is lightly traced with thin marks.

The dimension of the document is 457-462mm high 359-361mm wide. The thickness of the paper is 0.1mm. The distance between chain lines is 28mm and the number of laid lines per centimetre is 8.

Examination of paper using transmitted light shows us that it contains papermakers' watermarks. The primary watermark (Fig. 9) is represented by a post horn in a shield parted by a ram head fess, topped by a coronet and having a bell

hanged on it, below: C PRZIMODA. Countermark initial (Fig. 10): R crowned. The name of the paper manufacturer C. Przimoda, seems to be of Slavic origin, because in Slovenian *prži* means "to disperse" and in Czech and Slovakian the related *prší*, which means "it rains", but in Croatian *prži* means "roasted". So, it is quite difficult to ascertain where the paper was produced, because the origin of the manufacture owner's name doesn't mean necessarily that the paper was produced in the same province of the Holy Roman Empire where the speakers of that language are the indigenous population. The crowned coat of arms could suggest that the paper manufacture was a chartered one.

The primary watermarks dimensions are 134 mm high, 139mm wide. The countermark measures 55mm high, 29mm wide.

Two wax seals are applied directly to the face of the paper document (applied seal). Their dimensions are first \varnothing^1 23mm \varnothing^2 30mm (Fig. 3), second 29 mm \varnothing (Fig.7).

Chemical examination¹ revealed the 6pH, the sizing of the paper is very good, and all the ink types are insoluble in water.

A complete photographic survey was conducted for further information and in order to register the conservation process, allowing comparisons between the state before and after the intervention.

III. Conservation assessment

Prior to conservation treatment, the object was seriously damaged due poor storage conditions and handling.

The document shows surface dirt and residues of animal glue, in the repair area. Additional acidic burns could be observed in the upper part.

The object was creased and cockled. (Fig. 11) The paper had lots of small tears and some minor losses, as well as larger tears in the upper right region. These damages were located mostly on the edges, caused probably by handling.

The round stamp of the Brukenthal National Museum in German dating back to the period before the nationalization (1948) was applied the object was creased and cockled.

A poor attempt to repair this kind of damage was done on the back by strengthening the tears with duct tape, paper and animal glue. (Fig. 12)

¹ Dr. Polixenia Popescu (Popescu, 2012) made the expertize.

Most damages of the wax seals were of mechanic character: cracks, missing pieces, brittle. The seals caused tensions within the paper support that lead to tears. One seal is illegible due to its bad imprint (Fig. 7).

IV. Current approach and treatment

The conservation treatment was intended basically to reinforce the structure of the object to prevent further deterioration and mechanical damages.

The paper was first dry cleaned, by mechanical means, using soft brushes, certain erasers, low-suction vacuum cleaners (Bendix, Walker 2011, 5) to remove dirt of any kind, or other soiling, that was accumulated on the surface. During the process the duct tape was removed from the back.

The seals were cleaned using a water solution and a small brush, which was then swabbed away with cotton wool. The aim was to remove the worst of the surface dirt. (Viñas 1988, 6.3)

Afterwards, the document was subject to a bath with deionized water (Fig. 13). At room temperature there were no satisfactory results, so the temperature was gradually increased (not exceeding 40°C). Afterwards, a greater degree in whiteness was observed. The removal of the old repairs was carried out while the document was damp. The adhesive used was water soluble and could be detached from the paper using, carefully, a scalpel.

Additionally the document needed to dry out adequately for some time before treatment continues as the procedures that follow was carried out when the paper was completely dry. It was dried between sheets of blotting paper cut in shape to protect the seals, under a light weight for several days.

After flattening the sketch it was possible to start the process of consolidation.

The consolidation of tears was made using Japanese paper, Tengujo, 6gm², 6,7pH, 100% Manila hemp (Walter 1988, 10). Onto the document verso in the area of the tears a medium wheat starch paste (Schweidler 2006, 96) was brushed and then laid the Japanese paper (Fig. 14). After drying the excess Japanese tissue was removed. The document was left in the press, with moderate weight, cushioned with blotters that were cut in order to protect the seals.

Carboxymethyl cellulose in concentration of 1% was brushed over the wax seals in very thin and light film to offer a light consolidation.

V. Conclusion

The sketch of the project for the main altar of St. Michael's Roman Catholic cathedral of Alba Iulia, dating from the late 18th century, is of a very particular documentary importance, even if it is not precisely dated.

The treatments presented had a positive impact for the physical and chemical stability of the whole (Fig.15).

During the restoration the main concern was interfering in a responsible way, to avoid aggressive treatments. Reversibility of the materials and techniques applied was also essential for the restoration process.

Providing long term preservation was the philosophy in terms of criteria and conservation aims.

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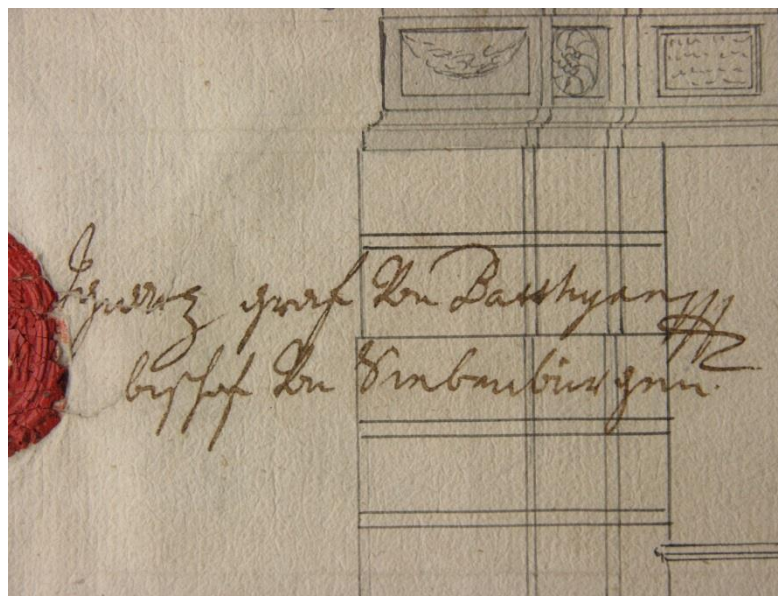
1. Sketch before restoration



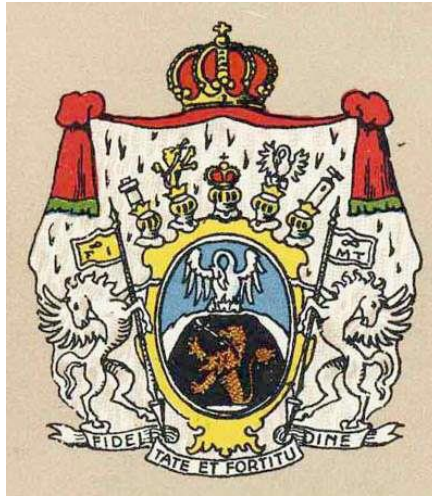
2. Main altar of the St. Michael's Roman Catholic Cathedral of Alba Iulia



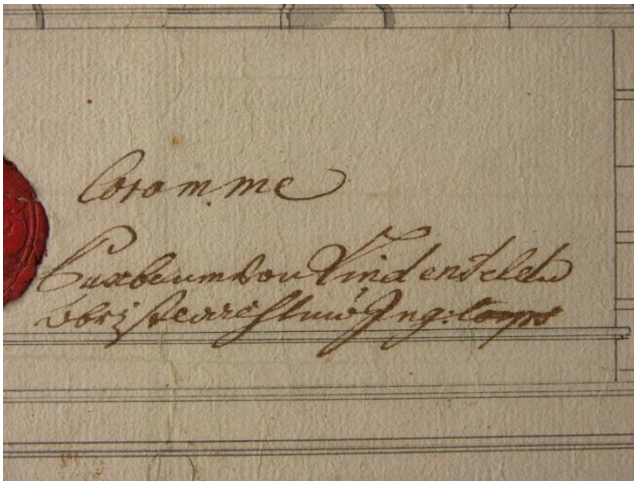
3. Oval seal of red wax



4. German inscription in typical italics of the 18th century



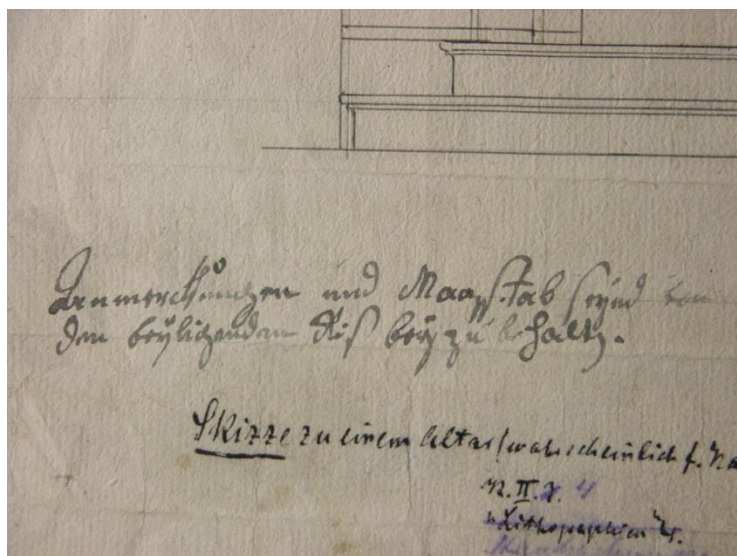
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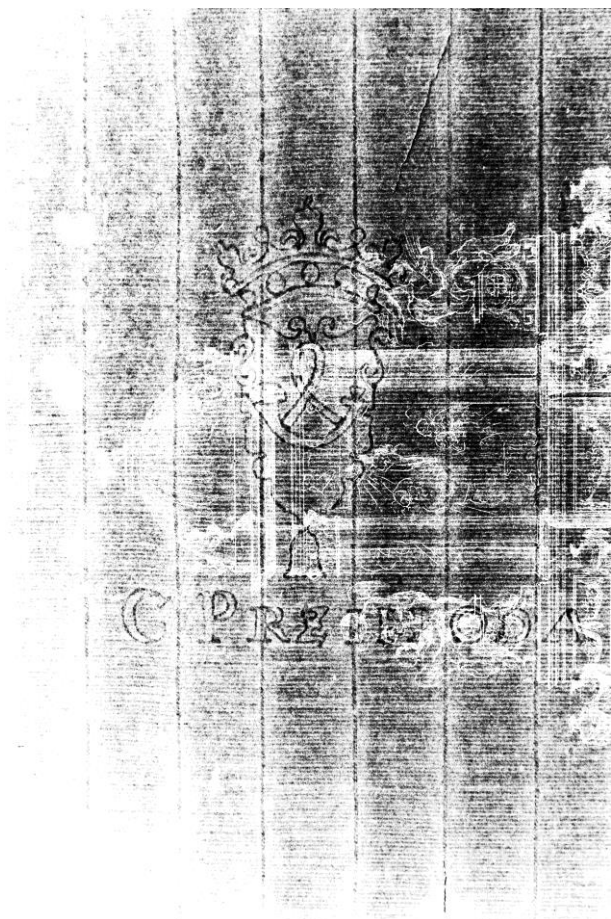
6. Inscription in ink in italics, typical for the German writing of the 18th century



7. Seal



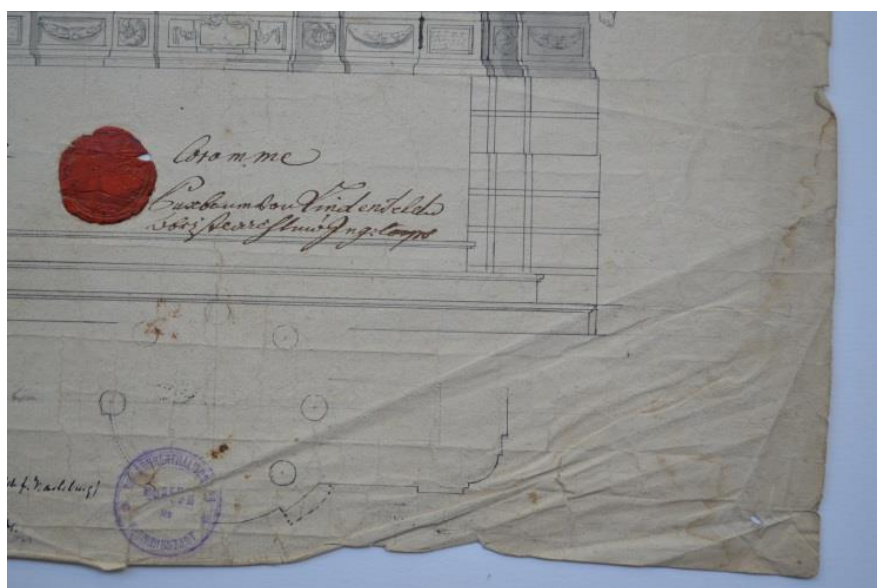
8. Inscription in German, with 18th century italics



9. Primary watermark



10. Countermark



11. Creased and cockled paper



12. Repair



13. Wet treatment



14. Tear consolidation



15. The sketch after restoration

OCTOIH

Maria FOTA*

Abstract: *Our specimen is a Romanian book in Cyrillic font; the ink used to print is black and red. The tome, dotted with beautiful typographic ornaments, lacks the beginning and some of the included sheets. Many sheets had an earlier intervention, strengthening with strips of paper. The text was sometimes filled with ink and the handwriting remained barely legible. The book was in an advanced state of physical, chemical and biological deterioration and degradation. The object has undergone a restoration on loosened tome, were applied dry, moist treatments and filling on the "double" technique.*

Keywords: *Octoih, 1750, typographic ornaments, restoration, filling*

Rezumat: *Exemplarul nostru este o tipăritură în limba română cu caractere chirilice iar cerneala folosită la imprimare este neagră și roșie. Volumului, presărat cu frumoase ornamente tipografice, îi lipsește începutul și câteva file din cuprins. Multe foi au suferit o intervenție anterioară, consolidându-se cu benzi de hârtie. Textul a fost completat pe alocuri cu cerneală iar scrisul a rămas foarte puțin lizibil. Cartea s-a aflat într-o stare avansată de deteriorare și degradare, fizică, chimică și biologică. Obiectul a fost supus unei restaurări pe volum desfăcut, au fost aplicate tratamente uscate, umede și o completare în tehnica "la dublu".*

Cuvinte cheie: *Octoih, 1750, ornamente tipografice, restaurare, completare*

Octoih (OCTOEH) (edit) - liturgical religious hymns book which comprise the music organization on eight voices or song models of various religious ceremonies that take place in one week, resumed after the expiry of eight-weeks period (Olteanu 1992, 265).

The oldest *Octoih* copied in Romania, in Slavonic language, was the *Octoih* from Caransebeș the manuscript dated from the thirteenth century. In 1510, Macarius printed in Targoviste the Slavonic *Octoih*, the second printed book on the territory of nowadays Romanian (from Liturgy Book).

Ioan Bianu and Nerva Hodoș in The Old Romanian Bibliography, Tome II 1716-1808, told us about this *Octoih* that was *In Folio*, the first section of four sheets was not numbered, the rest of 371 numbered. The book was printed in black and red ink, on two columns, with 41 lines per column. The title was enclosed in a compartment engraving, carved by Deacon. Constantin Typ.

RAM. "

On the back of the title was a double coat of arms (of the principalities of Moldavia and Walachia) (FACS 287), with the initials of Prince Grigore II Ghica (at that time, i.e. 1750, ruler of Walachia) and the following verses (Bianu 1910, 114-119):

*În Saretha și Carmilă, munte cu pustie,
Cu trude nemernicindă Proroculă Ilie,
Corbulă îi aducă lui hrana că trupescă:
Iară acuma noao, hrana că sufletescă:
Că ține în gura sa pré cinstita cruce,
Prină caré Țărâi noastre Hs. Slavă aduce;
Că Béserica crește în bună sporire,
Într-a Măriei tale bună norocire,
Asémene Bourulă, fiind fiară buiacă,
Pré cu multă blândéță ție capu-și pleacă.
Deci și acumă domnești Țara Românească,*

Domnulă celū pré puternicū să te întărăescă
Then, printed the two forewords.

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In other books of this kind the beginning of this commitment letter sounds different.

At f. 367 is located the usual excuses for misprints signed: *Ală pravoslavieî voastre cu totulă plecată. Lavrentie Ieromonahă Dimitrie Vicî. Şi s-au începută acestă şi Dumnezeescă lucru la luna lui Ghenuarie în 2 şi au luată sfârşitulă la luna lui Iunie 15, létă 7258, iară de la Hs. 1750.*

After that: "arătare pentru slujba peste toată săptămâna".

The book under our scrutiny was a print in Romanian language in Cyrillic font and the printing ink used was black and red. The volume was peppered with beautiful printing ornaments: frontispieces, vignettes, decorated letters, and small woodcuts. The paper used derived from grasses, with an average thickness of 0.1 mm, a good sizing degree with 6.5 pH.

The book lacks the binding, the beginning to the F 62 and from the second part F 50-65. The seams were weakened and many sheets went out of the book – the loose sheets were the most damaged.

Many sheets from the book had undergone a previous reinforcement with strips of paper glued with an adhesive made from flour, which in some places, become old, and detached. The text was sometimes filled with ink and the writing remained very least readable.

Our copy was in an advanced state of decay and deterioration. The sheets had wax stains, massive deposits of dust, water stains that had driven dirt, brown spots, foxing stains, deposits of mud, wine stains, grease, hair, physiological and dead insect deposits.

The paper was worn at the base, torn, creased, folded and crossed by exit holes and galleries caused by insects. Both the written and the unwritten paper had large missing areas.

The very poor state of preservation of this book dictated the restoration treatment, so the binding was pulled and the loose sheets were treated separately as a document on itself, after a proper restoration the book was rebound.

After disinfection for 48 hours in a vacuum oven, thymol and alcohol vapors, the book was left to be aired a few days.

Photographs were taken carefully and in detail to capture what the eye omit or forget and to have a reliable record that could be used after restoration to compare.

The chemical analyzes enlightened me on both the mode and methods to address these big health and integrity problems of the sheets.

Since the restoration was done on a pulled book the sheets were numbered recording how they were caught in section and the section in gathering.

The dry treatments consisted of the detachment from the sheets surface to adherent and less adherent soiling with scalpels, slightly abrasive cloth and soft bristled brush. I mentioned that the slips of paper were removed from the sheets, wet and dry cleaned and then were placed in an envelope to be enclosed at the restored book.

The sheets were very fragile and could crack from handling during wet treatments, so I chose to put just a few pages in the washing tray, maximum 20, opened and divided by larger in size Netex sheets. This huge sandwich was immersed in a first phase of soiling separation in a cold water bath for approximately one hour and then the water temperature was increased at 40 degrees Celsius, and anionic detergent was added. Rinsing was done in running water until the total removal of the detergent. Over the washed sheets I poured CMC 0.5% to fully cover the sheets in the tray.

Removing the sheets from the bath was done using Netex sheet posted beneath. My attention was focused on catching their upper edges; otherwise the sheet had the tendency to slip off the Netex, facilitated by sizing agent. The sheets were again introduced in the bathing tray, followed by the draining of excess CMC and putting them on the prepared rack with filter paper and Netex sheets. After drying and pressing, for a smooth join of the Japanese paper, fragile sections were reinforced with wide bands of thin and ochre Japanese paper, after drying and pressing excess Japanese paper passed was removed only marginally.

In this phase, we examined whether the wet treatment was efficient. About 10% of all sheets have suffered a second wet treatment, but this time with hydroalcoholic solution 1: 1. Placed on filter paper and rigid base the treatment was executed with the help of an impregnated pad. It should be noted that with this action the sheets were thoroughly cleaned and had not detached the Japanese paper bands applied with CMC 2%. We observed that the ratio of 1: 1 hydroalcoholic solution did not dissolved neither in depth nor to the surface the sizing agent but had effect only on soiling.

The sheets thus prepared gave me a solid base for the handling and cleaning of Japanese paper applied in the *double technique*.

After cleaning of the excess Japanese paper on both sides of the sheets, they were pressed and were cut to shape.

Sheets whose middle fell, were initially filled at the corners with Japanese paper and then filled a the middle taking appropriate measurements for their attachment into section.

Restoration of the first section of the book where the sheets had large areas of written and unwritten missing was made using a transparent foil. On these were drawn with marker the elements of a complete sheets to help me in placing the damaged sheets on page. At the corners of the transparent foil and at the edges were made small cuts where the pencil could make marks to correct assembly with Japanese paper. Text block had undergone a strong pressing after which the binding was restored by a bookbinding restorer.

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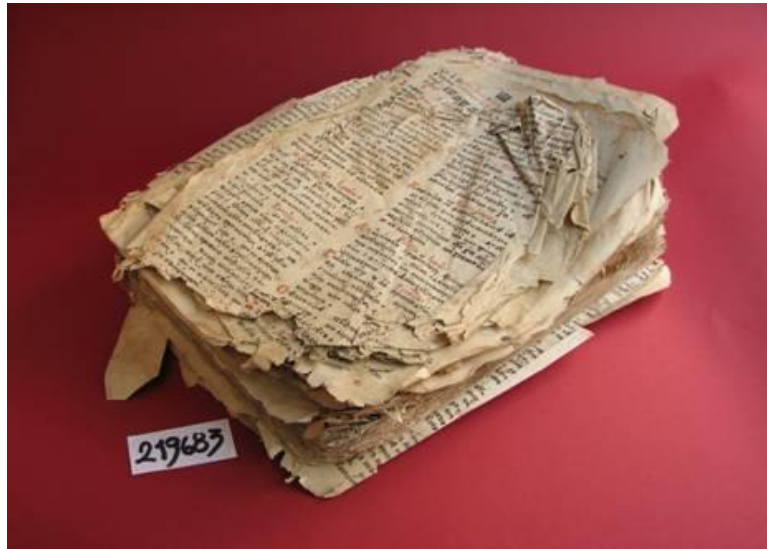
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10. Bloc carte după restaurare



1. Octoih before restoration



2. Before restoration – the bookbinding



3. Book before restoration – paper strap, wear, exit holes
705



4. Book during restoration - dusting and removal of paper straps



5. During restoration – wet cleaning



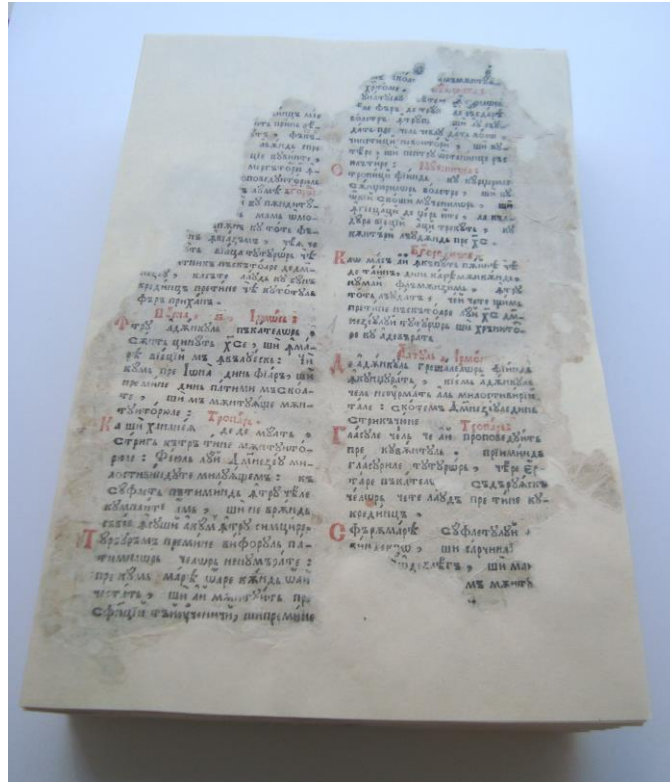
6. During restoration –wet clean, drying



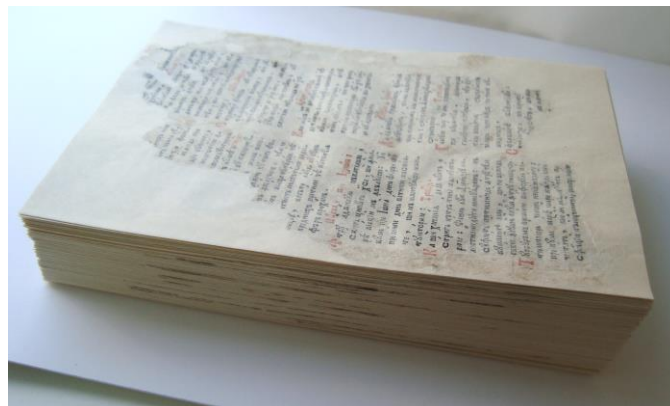
7. During restoration – excess Japanese paper removal



8. Cuting into shape.



9. Text Block after restoration



10. Text Block after restoration

CONSERVATION VERSUS DEGRADATION
CASE STUDY – THE DESTRUCTIVE EFFECTS OF INADEQUATE INTERVENTIONS OF RESTORATION ON THE WINGED ALTARPIECE OF PROȘTEA MARE (TÂRNAVA, SIBIU)

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Abstract: *The assessment survey for the conservation state of the fragments of the altarpiece from Proștea Mare, in order to determine the method and extent of restoration, required a preliminary detailed research. The examination involved complex investigations for technical understanding of the execution of medieval panel picture, in relation with alterations of authentic documentary evidence, effects of inadequate interventions, carried out at different times, according to the notions of a given period.*

Keywords: *winged altar, medieval panel picture, conservation, degradation, inadequate interventions, repaints, chromatic integration*

Rezumat: *Studiul pentru evaluarea stării de conservare a fragmentelor altarului poliptic de la Proștea Mare, efectuat în scopul de a determina metoda și extensia restaurării, a necesitat o detaliată cercetare preliminară. Examinarea a implicat investigații complexe pentru înțelegerea tehnică a execuției picturii de panou medievală, în raport cu alterări ale evidenței documentare autentice, rezultate în urma unor intervenții de conservare neadecvate, efectuate în diferite perioade de timp, conform cu noțiunile de la acea vreme.*

Cuvinte cheie: *altar poliptic, pictură medievală de panou, conservare, degradare, intervenții neadecvate, repictări, integrare cromatică,*

A valuable piece of late Gothic art in Transylvania, the polyptych of the Virgin Mary, fragmentary preserved in the National Museum Brukenthal, which decorated in the late fifteenth century the chancel of the church from Proștea Mare¹, nowadays Târnava (Sibiu). Vicissitudes of history, wars, iconoclasm, vandalism, uncertain conditions of storage, caused significant loss of integrity of the altarpiece. Originally it was a winged altar of a monumental size², which suffered destructions and changes in authentic aspect of painting. As it is estimated in systematic research, based on studying archives, a large part of medieval heritage was destroyed, among others, numerous wings altars were victims of historical and ecclesial events,

during the Turkish invasions and Reform (A. Kertesz 1991, 69). More or less complete, polyptychs were further damaged due to the frequent changes in their location, were stored, dismantled, fell into pieces, fact which justifies alterations and even the loss of any parts. Very few paintings have survived unscathed, many of these passed through an inexorable cycle of damage and treatment during the centuries³. A great deal of the past remedial treatment applied by restorers, usually well-intentioned, but sometimes incompetent, inadequate, has contributed to deterioration of art works. These actions often consisted in re-arrangements of panels, excessive interventions on the painting by removing detaching layers, or original paint was scoured away, from degraded surfaces with loss of paint through drying cracks, or flaking paint. Such of radical cleaning were followed by filling the gaps

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¹ Location near the town of Mediaș, on the right bank of the river Târnava Mare, in fifteenth century property of the Sibiu provostship, from where derives the German name of the village, Großprostdorf

² polychrome wood painting, tempera / oil / gold leaf, dimensions: 210x406cm

³“According to Harald Krasser (L 31,109), only 21 pre-Reformation altars are preserved in Transylvanian - Saxon churches, six other are in state museums; in addition there are isolated folding altars and predalle” (Fabini 2009, 89)

and the retouching of missing passages that turned into repainting. In this instance the original surface of painting appears with more stages or types of restoration or renovation, several painting retouch that looked very different. At these historical stages of restoration, there was no ethical imposing in contemporary practice. Little interest was shown in preserving either the original paint surface or the original structures surrounding it⁴. The aim of modern conservator – restorer, is to determine the actual state, since the original state may be only judged, given the later alterations. The restorer has to identify into a natural change, past repair and unnatural alteration. Returning a painting to its original state sometimes cannot realistically be done, given the ephemeral nature of organic materials, because the object interacted with the environment, and also with all kinds of older repair that damage the painting.

The processes of conservation and restoration demand a deep understanding of the original materials and techniques used by painters. Preservation become the result of a series of operations to maintain potential, material and aesthetics unity of the work in its original context, on the principle that the old objects have to be treated as documents of the past⁵. Consequently it is postulated that this authenticity to be protected, and any introduced during treatment can be removed or does not harm the work. This modern practice is a different attitude from the period of earlier twentieth centuries, when panels were routinely subjected to major structural treatments. Museum restoration takes into account the concept of reversibility in operational practice, based on the respect for the original material and manner of execution, as well as historical assumed document, as aesthetical value.

Restoration involves assumption double legitimacy of the art work, an initial historicity, which refers to the artist, time and place of creation of the artwork and subsequent historicity that means patina of time, the witness of previous stages, and traces of actions inserted into process of interventions.

⁴Studies in the History of Painting Restoration, Ed. Archetype, London, 1996, 4 – “Contemporary documents indicate that Renaissance restoration frequently involved the active destruction of at least part of the work before its renovation, or the almost complete reconstruction of a much deteriorated or damaged piece”

⁵*Restaurarea constituie momentul metodologic al recunoașterii operei de artă, în consistența sa fizică și în dubla polaritate estetică și istorică, în vederea transmiterii ei în viitor* (Brandi 1996, 36-37)

The approach in this case was determined by the preliminary documentation, and investigation, by gathering information about past and actual state of the fragments of the altarpiece. The study was interdisciplinary and included conservators, curators, and practitioners in related fields, such as wood technologists and scientists. The intervention focused on the procedures with regard of the structural treatment, on long-term stabilization by methods that alter as little as possible the structure of painting. Since paintings have often been retouched to conceal past damages and losses, cleaning or removing old repaints was a very sensible and assumed task. The aesthetic compensation was made distinctly, in relation to the overview.

Before considering any treatment, every piece was a separate subject for investigations to choose the most appropriate intervention, based on individual needs, depending of changes of surface or message, as a result of their material and conservative history.

The altarpiece from Proștea Mare, one of the few surviving retables, was in attention of art historians and published since the beginning of twentieth century (Roth 1916, 57). Literature of specialty mentioned similar features with German art, and the influence of artistic practices of central and northern Europe, the artistic environment in which the Transylvanian craftsmen and painters were formed and had activated. The execution done in elaborated traditional techniques (Thompson 2004, 15-65; Thompson 2006, 31-79), is remarkable through assimilating innovations by the local master, according to the trends of the period of transition from Late Gothic to Renaissance regarding the evolving from triptych retable into imposing winged altar. The painter used a mixed technique, oil tempera, much expressive, that gives life to the subjects represented. Art historians (Vătășianu 1959, 782; Kertesz 1991, 70), indicate stylistic analogies with the altars from Mediaș and Biertan, located in proximity. Researches ascribed their affiliation either to a local workshop or to a group of artists trained in the same environment, closely connected to the Viennese workshop from the Schottenstift⁶ and the circle of Nuremberg painters (Sarkadi Emese 2011, 73-81; Jenei 2013, 217-218). Local masters and foreign artists interfered along the cultural and commercial routes witch where crossing medieval cities. Interpretations

⁶St. Mary Abbey of the Scots – Schottenstift, Vienna (1469), one of the places where the craftsmen were formed as journeymen.

related to the generic typology of the principal characters, gestures, garments, the parapet wall in the background, the pavement, the detail of compositions, the theophany placed on topographical landscape of Mediaș in background (Fabini 1982, 32) painted in the composition with *The Ten Thousand Martyrs* (similar to the city of Vienna at the Schottenstift) prove the contamination with the Central European iconography. All this references contributed to a closer stylistic and chronological dating by association of the altarpiece, in the literature of specialty, with similar achievements in the European context⁷. Stylistic convergences are obvious in the naturalistic manner of the painting, with a supple brushing, from transparent tones to thick opaque textured brushwork (impasto), using an oil tempera binder (Popescu. 2012a, 70-72, Popescu, 2012b, 374), instead of traditional tempera medium, which pictorial effect is flat. Mixed technique is more versatile (Havel 1980, 60-109), allowing to the painter a fast execution, necessarily resulting from the increasing demand of shrines production in the late fifteenth century (Sarkadi Emese 2011, 15).

Disassembly at an unknown data left a harmful trace, both in composition and reading iconographic program, disrupted by the disappearance of certain parts. The originally architecture consisted in a central shrine, which has not been preserved, and that might have been decorated with a representation of the Virgin Mary, scene suggested by the angels with musical instruments, painted on the four narrow panels flanking the original centre shrine. The image is typical for the scene *Glorification of Mary* (Kertesz 1991, 70). The panels are painted on both sides. The mobile wings are painted with particularly venerated themes on festive

faces four scenes from the life of the Virgin, and on reverse, pairs of two saints (Teutsch 1896, 45): *The Annunciation*, the panel lost, *The Visitation*, and on the back side *St. Catherine and St. Margaret*, *The Nativity* and on reverse *St. Lawrence and St. Stephan*, *The Adoration of Magi*, and on the reverse, *St. Valentin and St. Antohny the Hermit*. The two fixed panels include compositions with rare scenes⁸ of the Transylvanian panel painting but present in the areas of the central and northern Europe (Vătășianu 1959, 782): *Jesus and the Thousand Martyrs*⁹ and *Martyrdom of St. Sebastian*. The Reverse painting on fixed panels and narrow panels with angels is technical and stylistic much lower and largely faded. It is a decorative painting, whose floral motifs are occurring at that time, for example at the altar of Mediaș, another indication of the similarity of these altarpieces, but different in style and with deficiencies of technique. The sustaining parts of the assembly, i.e. the predella and the Gothic frame, are missing.

An arbitrary re-arrangement configured a triptych, where the central panel was formed by the scenes of *Nativity* in the upper register and *The Adoration of Magi*, below, surrounded by angels with musical instruments. Fixed panels were framed individually. The third panel existent, *Visitation*, being in very poor conservation state, has not been exposed, now it is to be restored.

After their acquisition in 1913, the documentary evidence indicates that the panels have received conservation treatments in 1957, 1959, 1964, at The National Museum of Art of Romania, Bucharest. Teams of specialists whom were part restorers of the earlier Romanian school of restoration, among which were mentioned Gheorghe Zidaru, Elena Urdăreanu, Iuliana Dancu, initiated some operations on the principle of *minimum intervention*, but the absence of technical data limited the objective knowledge of pictorial system before and

⁷ (Vătășianu 1959, 782, 783): „A series of scenes are copied after the engravings by Schongauer, made during 1474 to 1497, and some other details are coming from the Hofer altar by Michael Wohlgemuth, in 1465. To these establishments of Roth, Al v. Reizenstein are added the stilistical similitudes, in drawing and colors with the works by the master from Schottenstift, Vienn, dated during 1469 to 1475” The connections to the German art sending to Hans Siebenbürger – Sankt Florian Abbey, Nürnberg, (Sarkadi Emese 2011, 75), at H.Pleydenwurff and his disciples (Dana Jenei 2013, 215-234); themes belonging to medieval hagiography with moralizing messages from *Pestblätter of the age* ,1472 – a collection of engravings illustrating the folk devotion in invocation of the saints (Guy Marica 1981, il. 74),

⁸ *The Legend of Achatius and the Ten Thousand Martyrs* (leader of a Roman legion, converted to Christianity, martyred in Ararat mountain together with the ten thousand soldiers, shredded from thorns) – medieval hagiography story in *Legenda Aurea* / Jacob de Voragine (1263-1273), widespread during the Crusades as encouragement and moral support

⁹ *The Martyrdom of the Ten Thousand* painted by Hans Siebenbürger on the predella from the altar Sf. Katharina church in Nuremberg; The theme is present too at The Master of Gießmannsdorf (Gosciszowice), 1506-1508, Wrocław, Narodowe Muzeum

after the operations performed. The recent restoration was done in stages, after a complex technical examination performed by photo light grazing, macrophotography, X-radiography, the pointing out of under layers by UV-fluorescence, Infrared-Reflectography, micro-chemical analysis of pigments, ground, binder on selected paint samples, cleaning testing. A balanced appraisal of advantages and disadvantages has further determined the method and extent of interventions. The survey was focused on the intimate structure of authentic material and manner of execution. Besides examining the present state of the pieces which have been repeatedly restored and reconstructed, our task was to distinguish between the natural aging of material and the alterations occurred after inadequate interventions. The effects of previous empirical interventions, such as inappropriate additions, oil overpaints and careless retouching completions were identified. It proceeded to removal of additives elements from the support and cleaning oil repaints, attention being paid to actions concerning stability, a reasonable preservation of original painting, and ensuring the compatibility of interventions.

The conservation state revealed overall sensitivities of painting panel, typical vulnerability of the support under the influence of temperature and humidity. The cumulative effects of a long cycle of expansion and contraction of wood, responsible for internal tensions and irreversible plastic deformations caused the loss of elasticity and strength of the panel. The destabilization of planks, the loss of adhesion and the widening of the slots between them damaged the painting stratigraphy (Fig. 7). The destruction caused by the insect attack galleries has contributed to the vulnerability of the support and the painting layers, the holes reducing the wood resistance and the painting surface adherence. On the reverse in order to maintain stability panel, plywood plates were applied with organic glue (Fig. 3), fixed with metallic nails over the joints at the top and bottom of the fixed panels. The nails have perforated and left rust on the paint layer. Under the plates proliferated xylophage insect attack, favoured by the nutrient layer of organic glue (Fig. 4). The attack advanced too along the edges of boards, on the traces of the glue brushed to restore joints. The areas where the loss stratigraphy revealed the network of galleries on the wood surface, demonstrated the amplitude of the attack and vulnerability paint layer created by these holes. The presence of small portions of sawdust had indicated an active attack. In these areas the damages caused by insects were intensified (Fig.

5) while on the rest of the surfaces were rarely present flight holes. The same destructions on wood surface have occurred on the crossbars where it was a sponge glued to create a buffer layer at rubbing against the wall. This synthetic material has lost its qualities, become powdered and underneath on glue layer spread xylophages insect attack. Taken out of the original frames, the panels were mounted in narrow frames that proved inadequate to the size and weight of the panels, therefore, it was detached, and a panel fell. (*The Ten Thousand Martyrs*) The shock of the accident destabilized the support, caused cracks, even longitudinal fracture, loss of wood at corners and on the edges, and dramatic effect on the overall paint layers, wide fissures, gaps (Fig.1, 2)

The decorative painting on the back of the fixed panels and of the narrow panels painted with musical angels, points out on one side the deficient technique through the dusty, worn aspect, and on the other side the lack of protection on a surface that presented a minor interest. The low resistance due to the unequal consistence of the colour layer proves a weak fixation medium, maybe only glue-tempera painting. The paint layers were obvious worn down, that only the suggestion of the decorative drawing remained (Fig. 3) The unprotected surface attached to the wall was more exposed to the temperature and humidity variations, leading to the painting embrittlement till to its transforming into flakes and powder. The painting layer didn't constitute an isolating part of the support in contact with the environment. The lack of the visual access delayed the conservation measures that would have been taken for the picture at the verso of all panels. This had a negative result, stressing the grave conservation state of these producing losses of the painting layers on large surfaces (Fig. 8, 9, 10).

These serious alterations have imposed fundamental interventions, support having priority to structural and mechanical conservation (Fig. 12, 13, 14), followed by restoration of painting stratigraphy, layers adherence, filling gaps, retouching. In the past, restoring paintings was usually entrusted to casual painters of lower value than the old master who made the painting. The method by scraping the paint layers, it was a harmful practice applied in order to eliminate the unstable surfaces, as shown the extensive gaps, with cut edges. Such invasive actions that caused irretrievable damages lead into other intrusive interventions, excessive grouting and dissonant repainting. The scenes of representations the Virgin, *Nativity* and *Adoration of the Magi*, show unprofessionalism in retouch-

ing: two right hands (Fig. 16), the long and dark hair of Jesus Child (Fig. 23), confusing details in restoring faces, hands, decorative motifs in the clothing (Fig. 19).

Observations on repainting like rebuilding the head of Child Jesus were mentioned in the research of V. Vătășianu in 1959 (782). Infrared examination was screened by a thick layer of oil colours that made impenetrable the substrate (Fig. 21). After cleaning tests (Masschlein-Kleiner 1994, 112-114), removal was made using solvents for varnish removal and pickling solutions for softening the rigid layers and then it proceeded to a gentle scraping with scalpels under a microscope in a suitable light (Masschlein-Kleiner 1994, 120-121; Knut 1999, 361). Discovering the original painting was an assumed procedure, acting carefully for advancing cautiously, from the more transparent into the most consistent layers (Fig. 22). The original painting layer presented erosions, holes, which were covered by the layer of dried, old oil paint (Fig. 23). In other areas, the removal of the retouch revealed traces of several previous interventions by additions putty in different colours and consistencies (Fig. 22), with unequal surfaces. Cracks, cleavages in painting surface were reattached with wax-based adhesive, material with a changeable consistency at variable temperature. Accumulations of wax amounts created deformations in the surface of paint (Fig. 11). The fixing of flaking or blistering painting by wax was less effective correcting damages but had added the disadvantage of severely darkening and dirty aspect of painting. Wax introduced could be only superficially removed. The consolidation of the stratigraphy was made with solutions of animal glue, constitutive binder of the original painting and primer. The correction of unaesthetic completions of gaps which were uneven, over level, covering the edges of gaps, was carried out through thinning layers of putty and then the surfaces were equalized and smoothed. Careful cleaning of the gold background discovered under putty layer small fragments of incised decoration that allowed continuing the design of brocade patterns on the missing parts where it was possible, by analogy with surfaces that have been preserved.

Another problematic aspect was the old retouching. At least three different phases: could be distinguishes: earlier oil repainting, in artificial red toning on portraits and hands (Fig. 15, 17, 23), with contours in black rough lines and unnatural features. Oil paint has depth saturation, is not satisfactory for inpainting as it discolours and becomes very hard, dark and glossy, in obvious contrast with the effect resulted of medieval tempera medium, chalky and pale. The subsequent stage of completions on extended losses of painting after other deteriorations was integrated on the filling in neutral tone. Large gaps on the golden background were careless retouched in oil paints with large yellowish-brown brush in a fragmented image that disturbed the image of the backgrounds (Fig. 16, 17).

In the same way were treated the gaps on the curtains, on the background with vegetation, on the panels with angels or the face of the angel with a flute, the previously retouch in oil paint was degraded and was partially removed and retouched in neutral tone (Fig.17). If in this case the effect of the chromatic integration breaks the painting area, the last intervention was a imitative retouching on the face of one of the magi, the left character in the scene *The Adoration of Magi* (Fig. 18). The retouch of the gaps at the end of restoration determined the choose of an aesthetic presentation which can be integrated into the original painting (Fig. 19, 24)

The chromatic integration was done in water colours, distinctly, in *tratteggio* technique or in points

The retouching, whatever type is chosen, is a new paint that should be stable, should discolour as little possible and should remain easily removable in solvents that will not affect the original paint. The painting was protected with a layer of varnish, ensuring that if cleaning should become necessary, it could be achieved with the least possible intervention.

The structural treatment and restoration permitted that the fragments of the altarpiece to be hanged in safety conditions. It has been decided to renounce at the arbitrary assembly and to exhibit the panels as individual pieces, suggesting a virtual restoring of the whole altar on the future.

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1. Longitudinal fracture of the paint stratigraphy on the joins of planks
2. Deteriorations of the support and paint layers
3. Inadequate interventions for stabilizing the support



4. Insect galleries under the plywood plates
5. Detail of xylophages attack favoured by the glue layer fixing the constitutive elements
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7. Gaps in the painting stratigraphy plates as effect of panel destabilizing
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13. Mechanical consolidation intervention of the fractured panel



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15. Details of the retouch by repainting in oil colours



16. Careless restoration, details (two left hands)

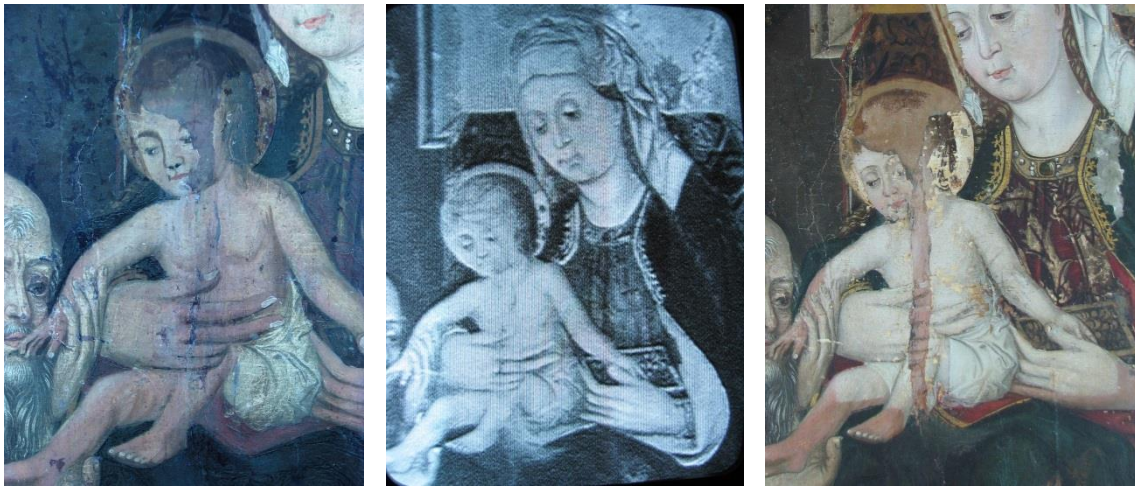


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ASPECTS OF THE RESTORATION OF SOME METALLIC PIECES

Marin BÎZOI*

Abstract: *In the article are presented examples from the interventions of restoration applied upon some metallic pieces that are to be found in the collections of The Technical National Museum “Prof. Dimitrie Leonida”, Bucharest. The metallic pieces that were selected like examples needed urgent restoration interventions. The interventions were applied in a particular way taking into consideration the specific of the degradations which the pieces had presented.*

Keywords: *metal restoration, engine, dynamo, corrosion products, microphotography*

Rezumat: *În articol sunt prezentate exemple din intervențiile de restaurare aplicate unor piese metalice din colecțiile Muzeului Național Tehnic “Prof.ing. Dimitrie Leonida”, București. Piesele metalice selectate ca exemple necesitau intervenții urgente de restaurare. Intervențiile au fost aplicate particularizat în funcție de specificul degradărilor pe care le prezentau piesele.*

Cuvinte cheie: *restaurare metal, motor, dinam, produși de coroziune, microfotografii*

Introduction

The Technical Museum was founded in 1909 by the engineer Dimitrie Leonida, at that time the museum being the sixth technical museum in Europe. The museum was the property of Prof. Eng. Dimitrie Leonida till 1950 when it was donated by him to the Romanian State coming to have the ward ship of the former Ministry of Electric Energy till 1992 after which it was under the patronage of The Self-Governing Management of Electricity – RENEL (CONEL). Nowadays The Technical National Museum “Prof. Eng. Dimitrie Leonida”, Bucharest is governed by S.C. FISE Electrica S. A.

In order to create the technical museum (Leonida, 1964, 350) Dimitrie Leonida gathered everything that had left from the technical installations, which had a historical and didactic value, organizing the museum in three sections: electricity, force machines and mechanical technology. The patrimony of the museum, enriched during the 100 years of functioning, reflects especially the evolution of the Romanian science and technology but also of the universal one.

The metallic pieces presented in the paper are rep-

resentative exhibited pieces that can be admired in the area of The Industrial Machines (alongside with other objects belonging to other collections such as: Auto, Motors, Velo), one of the most interesting and visited areas of The Technical National Museum.

The description of the metallic pieces.

Siemens engine nr. inv. 8521 (Fig.1)

The Siemens / Werner electric engine was used at the first electric tram in Bucharest, which functioned in 1894 on the tram line number 14 from Cotroceni to Obor. We want to mention that the first electric tram, the Siemens / Werner invention functioned for the first time in Berlin in 1881. The great capitals in the Western Europe didn't rush to use this new technical realization and were in stand by making that Bucharest, even 13 years later to use the electric tram before London, Paris or Vienna. The engine had a power of approximately 25KW at a tension of 750V continuous current. The alimentation of the line was made from Grozavesti Thermo-power station.

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Bush Dynamo, inventory number 8510 (Fig. 2)

The Bush Dynamo functioned at the installation in Victory Boulevard, in Bucharest in 1882 (the first permanent Electrical Central in Romania)

Edison Dynamo, inventory number 8518, (Fig. 3)

The dynamo (the generator) Edison functioned at The National Theatre in Bucharest (the first theatre in Romania electrically illuminated)

The conservation state of the pieces. The examination through optical microscopy

The dynamo (the generator) is an electrical machine using continuous current, which transforms the mechanic energy into electric energy functioning on the base of the induction phenomena, discovered by Faraday. The principal parts of the dynamo are: the stator (the inductor), the rotor (the induced one) and the collector. The materials used at the construction of these objects are iron and its alloys, copper and its alloys.

In order to evaluate the conservation state of the metallic surfaces of these pieces was used the optical microscopy. This is an analytical technique usually used in studying the metallic surfaces because it allows the detailed observation of the corrosion (the nature of the corrosion and the products of corrosion.) (Stuart 2007, 85). The morphological aspect of the metallic, determined through optical microscopy revealed at the level of the surfaces parts covered by a non-continuous and non-uniform layer metallic products and products of corrosion specific for the component metals. From these deposits were taken samples, which were analysed. The taking away of the samples was done after the examination through the optical microscopy of the areas affected by corrosion, without being affected the integrity of the objects (samples of approximately 1mm^2) (Scott 1991, 57).

The micro chemical tests done on the samples taken from the surface of the investigated pieces certified the presence of metallic ion of the iron, respectively of the copper, confirming in this way that the corrosion products that were present on the surface of the pieces were really iron corrosion products, respectively of the copper, accordingly to the constituent material of each metallic piece, iron or copper.

Taking into consideration the microscopic aspect of the samples taken from the green brownish deposit on the surface of the pieces there could be appreciated that the corrosion products of the copper that were present on the surface of the objects

were copper oxide (reddish brown) and the base carbonate of copper (green) (Fig. 4).

For the samples taken from the surface of the iron pieces, which was covered with corrosion products having a reddish brown colour the microscopic study emphasized that these were corrosion products specific for iron (rust). (Figure 5)

Evaluating the results of the examination through the optical microscopy and the chemical analyses there could be characterized the corrosion of the investigated metallic surfaces estimating that at the level of these surfaces the corrosion was shallow, the surfaces needing minimum restoring interventions.

Restoration of the pieces

In order to perform the restoration interventions the metallic pieces were disassembled into their component parts.

In order to eliminate the iron corrosion compounds were applied mechanic treatments using the proper tools: wire brush, glass fibres brush and steel wool of different fineness. The surfaces from which were removed the corrosion products were subdued to a Balistol passive (White 1995, 5).

The corrosion products that were present on the copper component parts (copper alloy) were removed by means of a combined method: chemical treatment in formic acid 10%, the mechanical cleaning with the brush under a water jet, followed by neutralization with distilled water, drying and polishing with Autosol paste.

After ending all the restoration interventions was done the setting up of the component parts of the metallic pieces (the reassembling of the metallic pieces).

Conclusions

The restoring interventions were done respecting the authenticity and integrity of the patrimony objects.

Acknowledgements

To the colleagues from the Brukenthal National Museum, as follows:

To Mrs. Ph. D. Eng. Polixenia Popescu, expert in physical and chemical investigations, who had done the chemical analysis.

To Mr. Ph. D. Dorin Barbu and Mr. Calin Bobic, experts in metal restoration, who had guided me within the training practical activity in this speciality.

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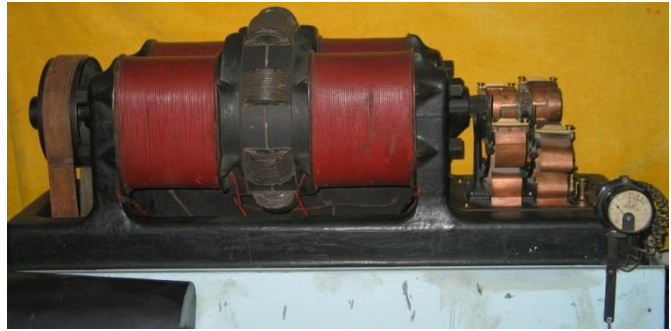
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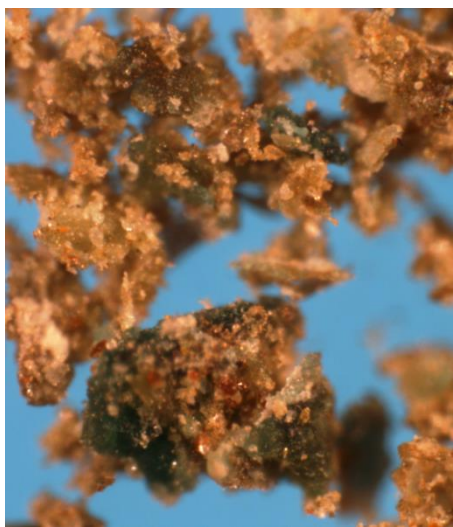
1. Siemens Engine



2. Bush Dynamo



3. Edison Dynamo



4.

4. Copper corrosion products (microscopic aspect-160x)



5.

5. Iron corrosion products (microscopic aspect-160)

RESTORATION INTERVENTIONS FOR THE WOODEN ICON „THREE HIERARCHS”, FROM THE COLLECTION OF THE PRAHOVA COUNTY HISTORY AND ARCHAEOLOGY MUSEUM

Mirel BUCUR*

Abstract: *This paper presents the state of conservation of the icon on wood panel „Three Hierarchs” emphasized data digital radiography and restoration work carried out, focusing on the consolidation and completion support, cleaning and chromatic integration.*

Keywords: *Restore, icon on wood panel, digital radiography, degradation*

Rezumat: *Lucrarea prezintă starea de conservare a icoanei pe panou din lemn „Cei Trei Ierarhi”, datele puse în evidență de radiografia digitală precum și intervențiile de restaurare efectuate, cu accent asupra celor de consolidare și completare a suportului, de curățire și integrare cromatică.*

Cuvinte cheie: *restaurare, icoană pe panou din lemn, radiografie digitală, degradări.*

Conservation status

Icon comes from the village church Filipeștii de Pădure and is made in tempera media on a wooden stand. Currently, the icon is in the collection of the County Museum of Archaeology and History - Prahova. The support consists of a single board without frame, cut tangentially, with dimensions of 420 mm x 530 mm and a thickness of 23 mm (Fig. 1-2). The panel shows a small curvature and two sleepers enhanced incorporation with beveled edges, highlighted in radiography (Efremov 2002, 68). Icon is made on a base of lime wood from a single board, cut tangentially, without knots (Mâle 1976, 18).

From the lower edge, it can be seen that starts a crack along the fiber to the midpoint. At the time of manufacture of the panel, along the cracks, plus a wooden wedge and was superimposed over a strip of cloth, on entering the laboratory, partially visible due to loss superimposed paint layers. Wood game, aging of materials, improper storage conditions are essential factors that have led to significant crack in time and the occurrence of loss of paint layers over it (Fig. 3). Besides these excessive humidity (demonstrated by the presence of halos of moisture on the bottom side), placing near the icon of candles or candles (in many areas

are visible burns, some resulting in loss of material) completes the range of factors that contributed to icon degradation (Fig. 4). Consequently, layers of old paint shows cracks, separation and gaps depths and different areas scattered throughout the area. Incomplete area of greatest tension is located at the bottom. We observed loss of material and irreversible changes color determined by proximity to a flame.

A strong attack by wood-boring insects, caused a weakening of support affecting mechanical strength in corner areas, causing losses of wood. According to the analysis report prepared by Chirtea Ileana-expert in biological investigations - attack was produced by *Anobium punctatum* and on entering the lab was inactive.

Vernier old is yellow and brown, the colors are visible transferred to yellow so that blue is perceived as a shade of green, orange and red approaching.

Surface dirt, sticky and clogged is present over the entire surface

Previous interventions.

A label was applied with glue on the painted surface and another one on the back. The labels

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have been applied relatively late considering the conservation status of the paint layers cover. Later were added metal hanger screw and metal plate stock number.

Digital radiological images (Fig 6).

Given the size of the icon radiography whole area was performed by two exposures. We refer the radiograph that wood fiber is not highlighted, so the structure is relatively uniform. Corroborating the visual radiographic data assume that the panel is made of linden wood. Biological analysis confirmed our assumption. The radiological image are highlighted fissures, small cracks and losses recorded in tone wood dark gray, almost black. Traces biological attack them recorded and the same dark tones as many small areas with relatively circular aspect (Bucur, Șofariu 2008, 60; Bucur 2009, 253-254).

The range of tones, from white to black is complex highlighting information about the nature of the pigments used. White lead painter used easily stands strong light signal recorded in the characters' faces and hands as well as for decorating clothing string points. Radiographic signals recorded close in brightness to outline auras and inscriptions with the names of saints. The red color in this case is a minimum of lead. The other red areas showing signs darker than appear to be based on lead (Lang, Middleton 1998, 111, 136-137).

Gaps paint layers are visible in X-ray form irregular areas with dark grays signal range. Grays intensity scale is different depending on depth, deeper losses with a dark signal.

A strong attack by boring insects produced a weakening of support in areas corners causing quite significant loss of wood mass. Both losses in flight corners and holes can be seen in radiography through dark almost black tone. It is very well reveal the degree of penetration of metal and metal plate inventory number.

Treatment restoration to detach the front label was achieved by hot water compresses, excess adhesive was removed mechanically with a scalpel. Similar treatment was done to the label on the back (Fig. 5) Strengthen the paint layers. By brushing with hot glue over 3% aqueous solution was applied over the entire surface painted Japanese paper. Because we observed a strong absorption glue layers paint, I brushed the entire surface again with isinglass 3%. After 24 hours, we applied a new layer of hot glue 4% aqueous everything brush,

and then at an interval of about 2 hours, I applied hot press with spatula mail.

Consolidating of support.

From the front was done by injecting holes consolidation flight with 10% Paraloid B72 solubilized in ethyl acetate to stabilize the holes fine sawdust flying. Subsequently, one of the painted surface holes were filled with a mixture of sawdust and 8-10% fish paste, most of the time in two or three steps. Finally, a grouting with a mixture of chalk mountains and hot glue over 8% was executed. In the corners, we performed a similar building with Paraloid B72. By repeatedly injecting the same material introduced from consolidating and back, including sleepers. The excess was removed with the ethyl acetate by means of cotton pads (Fig. 8).

In order to complete, were fixed into the panel wood plugs to ensure a better link between the board and filling material. For completeness, we used Balsite W - stucco wood epoxy mixed with balm K - hardener softener W (1: 1). To strengthen the support lower zone where the mentioned crack is visible was made of the same essence a wooden rod. This rod has rounded ends to prevent the creation of new tensions panel mass, which usually produce new tension cracks. Into the panel mass was executed a place suitable for this element. For assembling an adhesive glue 15%, was made and kept into the press for 24 hours. Surplus wood was removed with a chisel until the edge of the panel. Small differences were filled with mixture of fine sawdust and glue fish.

Gaps in the pictorial layers were grouted with a mixture of chalk mountain and warm isinglass (concentration 8%). Grouted areas were finished with sandpaper (especially large ones) and cork and egg yolk emulsion (Nicolaus 1999, 239-244.).

Cleaning of paint layer was made after tests with ammonia water, artificial saliva mixture of alcohol, water, ammonia, spirits of turpentine (Fig. 10). Verso icon was cleaned with ammonia water, keeping a small witness. Chromatic integration was performed with water colors - watercolor - in the *ritoco* technique. On the rims, an aqueous stainer was applied. Finally, the varnish with optical and protection rol, was solubilized in a mixture of turpentine dammar (8% concentration did not have a high gloss) and was applied by brush (Nicolaus 1999, 291, 351-368).

Recommendations and conclusions

After the intervention of restoration, the recovered icon, is displayed in the exhibition at the Museum „Princely House” – Brebu (The Prahova County Museum of History and Archaeology). In fact, it is a medieval architectural complex, located near Campina, composed of the enclosure wall, steeple, church and Princely House. Is one of the most important historical monuments of the seventeenth century, in Prahova County. The exhibition here was originally developed by Nicholas Simache – founder of the Prahova's

museums - and afterward enriched with new and exciting exhibits illustrating moments of Romanian civilization of seventeenth century until the nineteenth century. The present icon can be placed in the first part of the nineteenth century and after the intervention of restoration it is necessary to ensure a stable microclimate (temperature and humidity parameters are optimal for situated between 18-20° C and 150 -180 W) such that the image rediscovered under layers of dirt and varnish brown can be transmitted posterity.

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13. Whole face after restoration

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12. Ansamblu față după chituire
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1. Assembly face before restoration



2. Assembly back before restoration



3. Loss of paint layers; green cloth with relatively high visible; traces of burning wood loss. Detail



4. Traces biological attack; area charred and material loss



5. Detail. Remnants the label adhered to the surface



6. Digital radiographic images



7. Detail. Applying a warm compress, consolidation of paint layer. Detail.
8. Consolidation of the Support with Paraloid B72



9. Embedding wand on the icon



10. Detailed during cleaning



12. Assembly after grouting



13. Whole face after restoration

**STRUCTURAL CONSERVATION OF PAINTINGS.
BEVA FILLER – CONTEXTS OF USE**

Radu Constantin TĂTARU*

Abstract: *Acrylic resins are produced by polymerizing acryl acids and their esters. For making fillers, acrylic resins in solvent and acrylic resin dispersions are used. Beva 371 was developed by the reputed conservator of paintings Gustav A. Berger for doubling, reattaching cleavages, and applying facings, etc. Beva - chalk filler, was first made up and tested by Heinz Althöfer and his associates. It consists of the binding agent Beva 371 and a filling substance.*

Keywords: *restoration, oil paintings, structuring, synthetic fillers, Beva filler.*

Rezumat: *Rășinile acrilice sunt produse prin polimerizarea acizilor acrilici și ai esterilor acestora. Pentru realizarea chiturilor se utilizează rășini acrilice în solvent și dispersii de rășini acrilice. Beva 371 este realizarea reputatului restaurator Gustav A. Berger, pentru a servi la dublări, reatașarea clivajelor, aplicarea de facing-uri, etc. Chitul pe bază de Beva a fost creat și testat de către Heinz Althöfer și asociații săi. Constă în adaosul substanțelor de umplere în agentul de lipire Beva.*

Cuvinte cheie: *restaurare, pictură în ulei, modelarea chitului, chituri sintetice, chit pe bază de Beva.*

A picture layer may develop defective areas that detract from a painting's overall appearance. Generally before retouching takes place, these defective areas must be sealed by using filler. By filling we mean the sealing of damage to a picture layer by inserting a filler, that consists of a smoothed down or structured substance. Fillers fill in defective areas and bridge uneven parts of a picture (to create a level plane). Retouching takes place on top of the filler (Knut 1999, 235).

Whenever filler is inserted, it must be remembered that the surface appearance of a painting will be affected in terms of structure, coloration, and luminosity. The central issue dealt with here is how to reconstruct a painting's surface by means of filler and the related structuring. That said one must be aware that reconstituting colour and luminosity will

additionally depend on the quality of the filler used. As far as possible, the filler should match the constitution, coloration and elasticity of the ground layer on the picture to be filled. If not, the filler will show up after a while as an "alien body" in the picture layer, or it will detach itself from the body of the painting, so that the defective area will be visible once again.

The filler's quality will depend on its structure, coloration, suction, elasticity, and the degree to that it bonds to the surface underneath.

The filling putty

The filler should be made from a workable or thermoplastic mass, the filling putty. Filler consists of one or several filling substances, or pigments, that have been mixed with a binding agent. Depending

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on the support, the picture layer, and the kind of retouching technique that is envisaged, the filler ought to be easy to work, and its volume should hardly change when the substance dries. It should be simple to smooth and structure and its suction action on the bounding agent used in retouching should be controllable. It should respond well to wetting and be permanent. Further, it must not discolour and must be easy to remove without damaging the picture layer. At the same time, it must adhere well to the ground layer and respond to climate change in a similar way to the painting's environment (Knut 1999, 237).

The circumstances

With the binding and filling substances now available, a restorer can generally adapt the filling material to those requirements. That said, one should remember that no filling material can be applied in all circumstances. Wooden panel pictures may need different kinds of filling material than metal panels or textile supports. For every painting, a filling material should be checked afresh for suitability. The restoration work documentation should include exact details of the constituents of the filling putty used by specifying the recipe.

Beva filler

Around 1970, Beva 371 was developed by Gustav A. Berger¹⁰⁴ New York, for – among other purposes – reattaching picture layer cleavages, removing cupping and carrying out facings. It consists of a mixture of synthetic resins and microcrystalline wax (Berger 1970). Beva filler, or more precisely, Beva-chalk filler, was first made up and tested by Althofer and his associates. It consists of the binding agent Beva and a filling substance (Althofer 1985, 111).

Beva 371, the binding agent in this filling putty, consists of a mixture of synthetic resin and paraffin dissolved in toluene and white spirit. Beva filler belongs, broadly, among wax-resin synthetic fillers. Chalk, supplemented, if necessary, by coloured pigments – can be used as filling material.

Beva filler is prepared by mixing together binding agent and filling substance. It can be applied to the defective area either as a paste or as a firm putty. As a paste, filler should be applied in one or more layers up to the level of the paint layer then smoothed level with a spatula (Fig. 1). This smoothing process will be made easier if a siliconized sheet of hostaphan is placed on the layer of filler. Because Beva filler is difficult to smooth down after it has dried, it is important to make the filler surface as even as possible while applying it.

Depending on the quantity of filling material, the putty can be worked for about 20 minutes. After that it gels, and in about eight hours it is dry. If the defective areas are fairly large one must work speedily.

Another Beva filler can be produced by mixing Beva 371 with gesso powder (chemically inert fine grained mineral powder, resulting a highly elastic material capable of following the expansions and contractions of the substrate as caused by fluctuations in the environment or by vibrations. It is stable and expected to maintain its qualities for about 100 years. It adheres firmly to most substrates, such as cardboard, canvas, wood, mosaics, plastics, metals, and paint without danger of interacting with them (Jane L. Down, Maureen A. MacDonald, Jean Tetreault and R. Scott Williams 1996, 19-44). It has a wide range of flexibility, which can be increased further by adding additional quantities of Beva 371. It can be shaped or textured while wet, or when dry with heat (65-70°C) and pressure, by using special heated spatula tips (Fig. 2). In other words, it can be made to reproduce the optical effects of a surface matching that to the original. Untinted Beva and gesso filler dries white, but can be colored by adding dry pigments, or Maimeri restoration colours. It can also be stained with dyes, especially oil and alcohol dyes. It is compatible with every retouch (paint) medium and finish, such as watercolour acrylic emulsions, B-72, varnish, varnish-based paints, French polish, and Chinese tung oil. It can be made to reproduce the optical effects of the surface being reconstructed, from the roughness of

sandpaper and stone to the silky sheen of textiles and the brilliance of high polish (tallasonline.com)

Given the affinity of Beva with aromatic solvents, isolation with Paraloid B72 or PVA prior to retouching or varnishing is recommended (Fuster survey, 2009).

All Beva based fillers are reversible with heat or low aromatic hydrocarbon solvents. This makes them easier and safer to remove than any other filler.

The case study

Better results can be obtained with firm putty (a mixture of one part Beva 371 + 2 parts chalk has been tested). In order to make it up, one should shape the freshly prepared Beva filler into small rolls about as thick as a finger, then let these dry. After the putty has dried, it should be warmed with an electric spatula and introduced into the defective area, which will be smoothed, and, if necessary, structured by means of the warm spatula. This par

ticular technique was applied on the 18th century oil on metal plate painting – *The Portrait of Valentin Tartler* (Fig. 3).

The painting suffered some picture layer loss on secluded areas (Fig. 4, 5, 6, 7). There was no sign of further detachment, but the exposed metal could have suffered corrosion that would raise new problems in the future. Due to the work's particular technique, the proper filler had to be selected in order to match the requirements of the support and to securely bond to the surface underneath. In any case, the water-based fillers had to be excluded from the start.

The Beva based firm putty turned out to be the best option due to its thermoplastic qualities, degree of insulation and dry application. The defective areas were prepared prior to filling. Superficial dirt, together with a thin oxidized pellicle was removed. Next, the areas were degreased and the filling putty applied (Fig. 8 - preceding tests were performed, in order to evaluate both the adhesion and the reversibility of the filler; when removed, no residues remained on the test area). Lastly, the putty was smoothed and varnished, followed by retouching (Fig. 9, 10).

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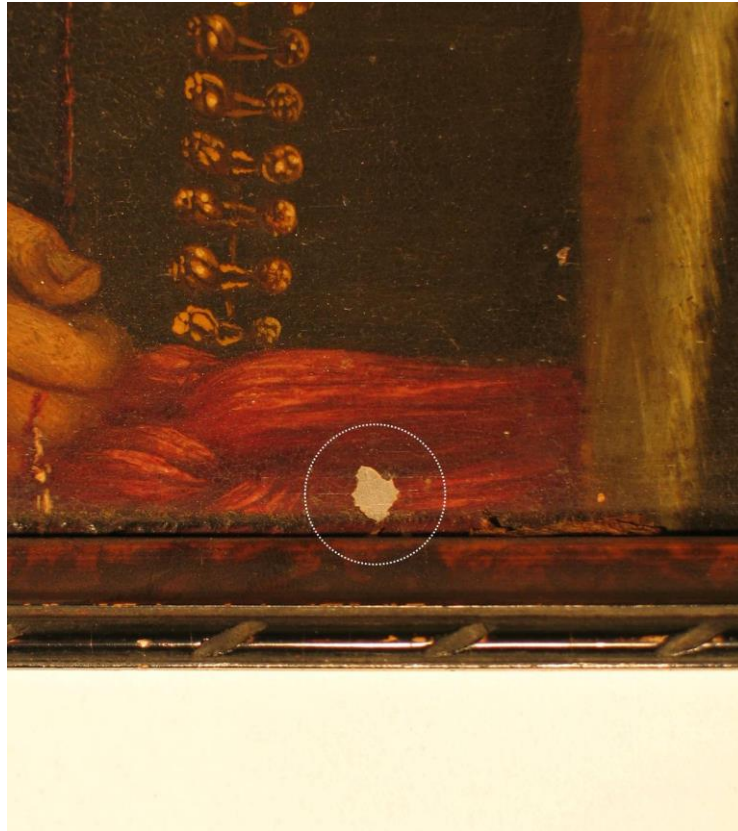
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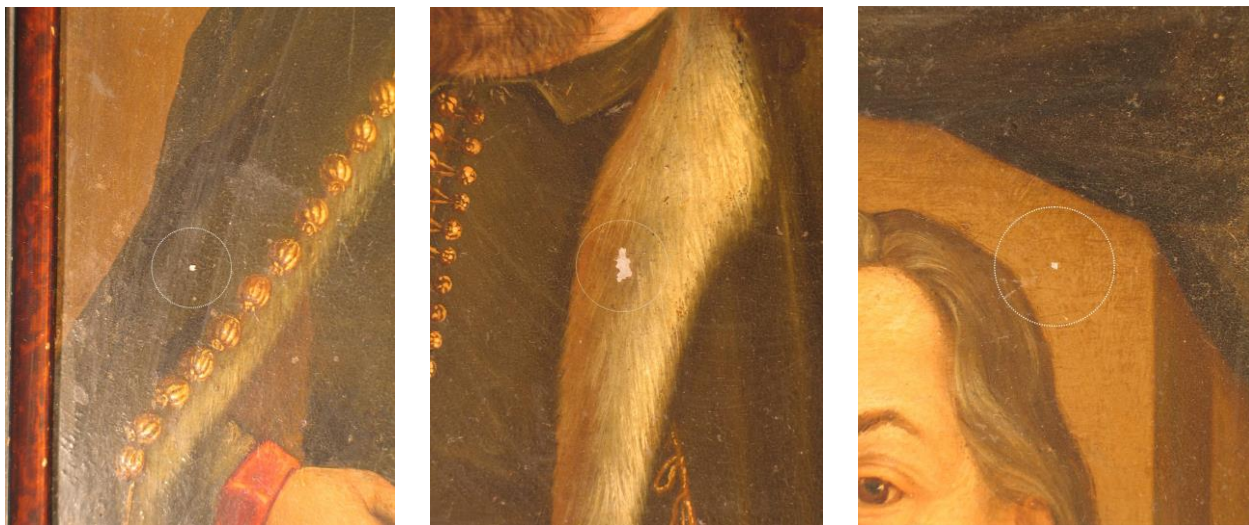
2. Heated spatula textured tips. © CTS General Catalogue



3. The Portrait of Valentin Tartler – before restoration. © Evangelical Church C. A. Braşov, The Black Church



4. The Portrait of Valentin Tartler – detail: picture layer loss. © *Evangelical Church C. A. Braşov, The Black Church*



5. 6. 7. The Portrait of Valentin Tartler – detail: picture layer loss. © *Evangelical Church C. A. Braşov, The Black Church*



8. The Portrait of Valentin Tartler – applying the filler. © *Evangelical Church C. A. Braşov, The Black Church*



9. The Portrait of Valentin Tartler – filled areas. © *Evangelical Church C. A. Braşov, The Black Church*



11. The Portrait of Valentin Tartler – after restoration. © *Evangelical Church C. A. Braşov, The Black Church*

THE RESTORATION OF TWO ARMCHAIRS FROM THE 18th CENTURY WITH TAPESTRY IN AUBUSSON TYPE

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Abstract: *The article presents the aspects of the restoration of the tapestry in Aubousson type belonging to the small furniture set in Louis XV style, which is exhibited at The Museum of Old Western Art “Ing. Dumitru Furnica Minovici”. The museum belongs to the Romanian Academy.*

At the end of an extensive process of restoration the pieces of furniture became part of the base exhibition.

Keywords: *restoration, embroidery, goblin, tapestry*

Rezumat: *Articolul prezintă aspectele restaurării tapiseriei de tip Aubousson, aparținând garniturii de mic mobilier stil Ludovic XV-lea, aceasta aflându-se expusă la Muzeul de Artă Veche “Ing. Dumitru Furnica Minovici”, proprietar fiind Academia Română.*

La finalul unui amplu proces de restaurare, piesele au devenit parte din expoziția de bază a muzeului.

Cuvinte cheie: *restaurare, broderie, goblen, tapiserie*

The armchairs belong to the set of small furniture in Louis XV style of the Museum of Old Western Art “Ing. Dumitru Furnica Minovici”. The set was restored during 2011 in the Brukenthal National Museum laboratory. The restoration process of the coach was the subject of another article published in Brukenthal Acta Musei IV. 4.

Description

The tapestry of the armchairs in Aubousson type is worked on canvas in diagonal goblin point with wool and silk, is dressing the seat, the back and the elbow rest arms of the armchairs. The ornamental motive is a floral one: in the medallion there is a vase with flowers symbolizing the ancestral theme of the tree of life. The main colours are: red, green, yellow and shades of beige, cream and grey. The tapestry is fixed on the wooden part with ornamental nails (Fig. 1-2).

Materials and execution techniques

The handmade tapestry on canvas was embroidered with coloured wool threads and natural silk. In the centre the flower vase was embroidered with wool threads in “petit point” and on the sides in basket weave stitch. The silk

adornment in the central area was also worked in basket weave stitch. The work technique of this point is as follows: it begins with a needle from down to the upper side and then underneath this is sewn the next point 3-4, point 5-6 and 7-8 are sewn near point 1- 2 and the it comes down with the next points in diagonal. When the row is finished it is worked two by two points, one beneath the other and it stars up on diagonal, too. The needle is always thrust from down to the upper side. The point is used especially for the furniture tapestry because it offers resistance to usage and breaking (Fig. 3).

Conservation condition

The pieces were in an advanced degradation state. The degradations were due, mainly, to the functional wear, to the materials they were made of, as well as to the way they were kept in the storage (Moldoveanu 2009, 344). As a result of these degradations the tapestry presented a strong discoloured aspect on its entire surface, the total loss of the natural silk in the area that frames the flower vase (but there was kept as a witness thread on the back of the embroidery) (Marian 2001, 44,

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48). In the central area of the embroidery, the support presented cuttings, loss of the material from the warp and on approximately 10-20% of the surface. The woollen thread from the embroidery was in a relatively good state, but there were areas with losses on the seat, back and elbow rest arms. The entire surface presented layers of dust and filth (Fig.4).

On the back of the set the genuine material as well as that was added afterwards were torn, broken and presented losses of the material. There can also be noticed an addition of a white synthetic material (Fig. 5).

Diagnosis

The piece was in an advanced degradation state and needed complex interventions of restoration with the complete remaking of the areas with total loss of the material (Fig 12).

There was done the visual analysis in order to determine the work technique, the burning test for identifying the fibres and the microscopic analysis, too. (There were identified as support fibres for embroidery: cotton for warp and weft, and for embroidery thread: natural silk and wool).

Restoration proposals

- taking down the tapestry from the wood support
- noting the way of catching and sketches regarding the original placement
- a thorough dusting of each and every part with soft brushes
- cleaning tests and tests for migration of the colours
- in case of migration of the colours, these will be fixed with a solution of acetic acid
- wet cleanliness by immersion in solution of "nuts of soap" 3-4%
- repeated rinsing with dispersed jets of water
- controlled drying on a plane surface with filter paper
- selective pressing with marble plates
- preparing the materials for restoration, dyeing the threads of natural silk and wool
- remaking the support of the embroidery in the area with a total loss of material
- restoration of the embroidery by remaking in goblin point in diagonal with natural silk and wool threads chromatic integrated; this was

done on the preserved drawing and the colours would be respected after the existent witness model

- remaking the embroidery would be done freely on the table
- refitting the tapestry after the sketches done previously, respecting the original way of catching, this being done with the help of the wood restoration section

Description of the performed restoration works

Taking down the tapestry from the wooden support was done taking into consideration and noting the original way and the techniques of catching (Fig. 6-8).

The decorative nails will be kept as documentary material as their preservation state doesn't allow reusing them.

The dusting of the entire surface was done with a soft hair brush.

The test of migration of the colours was done with solution "soap nuts". As a result of the tests the stability of the colours was established.

The removing of the fibres from the seat was done by the help of pincers (Fig.9).

The wet cleansing was done by immersion in two bathes of washing with "soap nuts" 4%. In order to remove the adherent dirt were also done easy brushings (Fig. 10).

"The soap nuts" used as detergent are the fruit of the *Sapinus mulkorossi* tree, which grows in an unpolluted area of India – Himachal Pradesh – situated at the foot of the Himalaya Mountains. The bark of the nut contains a kind of soap which is a natural detergent. This product is not chemically contaminated, being vegetal 100%. By using this product as a detergent for textile are avoided the bad results done by the chemical products used in usual detergents. The soap nuts, by their qualities allow the washing of delicate texture of wood and silk and the pH, situated among 5-6, is recommended for these types of textiles (Detergenti biodegradabili 2010).

The rinsing was done with dispersed jets of distilled water.

The controlled drying on a plane surface and removing the water in excess was done with filter paper.

Selective pressing was done with marble plates for recovering the shape. (Fig. 11)

Restoration

Remaking the support of the embroidery was done by introducing with the help of a needle, new fibres on the original way in the areas with loss of the warp fibres; this operation being done till the resisting area of the texture; then, there was left a curl from the new thread in order to adjust the tensions created during the work.

Then, there were inserted new threads of weft perpendicular on the threads of warp. Each and every weft threads passing on and under each warp threads. After this operation the heads coming from the new threads were drawn on the back of the embroidery by the help of a crochet (Fig. 13, 14).

The remaking of the embroidery point was done taking into consideration the model drawn on the support, the work technique and the witness colours.

The central area was completed with natural silk chromatic integrated in the original embroidery point (Fig. 15-16).

The sides that were worked with wool fibres presented a lot of previous interventions with new fibres that discoloured differently from the original ones. These were removed and completed with wool fibres chromatic integrated in the remained colours.

The refitting of the tapestry on the wooden support was done respecting the original way of catching. The catching was done with new ornamental nails having the shape and the patina of the original ones. The backside of the back of the armchairs was replaced with new material from natural fibres (Fig. 19).

The restoration of the wooden support and the refitting of the tapestry were done with the help of our colleagues within the wood restoration lab (Fig. 18, 20).

The set of small furniture in Louis XV style, which restoration took more than a year, found its place in the museum created by a particular person, Eng. Dumitru Furnica Minovici, who donated it to the state. They can be admired nowadays in their new restored shape at the Museum of Old Western Art bearing the name of its founder. (Fig.21)

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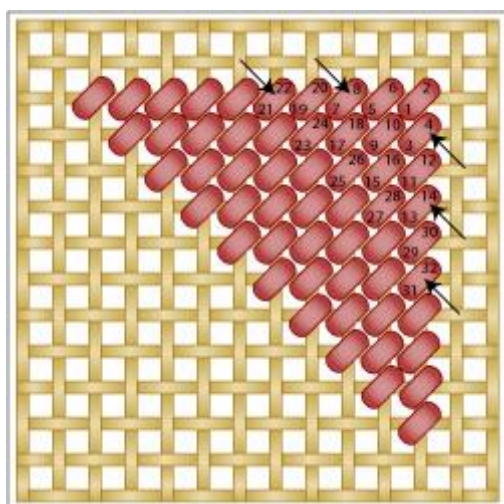
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