

Abstracts

István Bóna **First aid conservation of Romanic frescoes** **in Pécsvárad**

In the early sixties Romanic frescoes were found by conservators in the Romanic chapel within the Pécsvárad castle. They are amongst the most valuable medieval paintings in the country. The frescoes were made after 1157 with Byzantine technique. The plaster contains no sand, but straw and chaff instead as filler in the lime matrix. There are two layers of plaster as the support of the paintings, a rough arriccio and a thin smooth intonaco. The technique of the paintings is a perfect Byzantine one. They are partly painted by fresco technique, but some colours are applied with secco technique. For example the blue colour applied on a black fresco layer (veneda) was made with secco technique, using natural ultramarine as the pigment.

Most of the frescoes still lay under several lime layers, waiting for recovery. The condition of the building and the inner environment of it are bad enough not to recover the paintings at the moment. According to the author's and his colleagues' measurements, the walls are almost totally wet. The plaster is badly disintegrated and flakes at many places, notwithstanding the earlier efforts to save them from falling down. There are different edgings made during different earlier conservation campaigns. The edging plasters prove that new losses have been formed recently.

In the year 2014 a conservation campaign was executed to try to save the frescoes, even if the main causes of the deterioration of them were not treated yet. The aim was to consolidate the disintegrated plasters, and fasten the loose parts on the wall. The main considerations were: not to prevent the future recovery of the frescoes and choose materials and techniques that can be applied on a totally wet wall. Some applied materials are probably new in the mural conservation; at least the author has no information about the former application of them.

For the consolidation of the powdery plaster and paint layer, the *Aquazol 200* or *Aquazol 500* was applied, dissolved in ethyl alcohol (2.5%). Some cases the *Porosil ZTS* colloidal silicate was used, diluted in water (*Porosil*: water 1:10).

For grouting basically three systems were selected and used according to the possibilities and aims. In case of the delaminations without holes, or with very narrow gaps between the layers, the *Porosil ZTS* mixed with fine quartz powder was generally effective. In cases of delicately painted places the mixture of *Aquazol* and the fine quartz powder was used instead. In case of big delaminated areas, after a pre-consolidation by *Aquazol*, the *Vapo inject 0.1* industrial grouting material was effective.

This lime based material doesn't contain Portland cement, so it is perfectly compatible with the lime plaster.

The reason to use such a wide selection of materials is the fact, that the conservators had a lot of different problems to solve. Sometimes the water based materials did not penetrate into the gaps, these cases the *Aquazol* dissolved in alcohol was more effective. The *Porosil* is an inorganic binding media, so it is preferable theoretically. But it can stick together the paint and the lime layer covering the frescoes. These cases the *Aquazol* proved to be a reasonable solution. The *Aquazol* is readily solvable in series of solvents.

Translated by: István Bóna

Bogdan Ungurean **Restoration of the mural painting on the sanctuary** **ceiling of the Banu church in Iași**

The paper presents the particularities of a conservation program on a mural painting fragment. The painting is situated in the altar's vault of the Banu church in Iași which is also known as 'The Sunday of all saints' church. The reconstruction works on the building in the year 2010 made inevitable the preventive strengthening and conservation of the mural painting on the sanctuary ceiling.

Besides some historical data on the monument, information on the original technique of execution of the painting and the state of conservation, data are presented concerning the type of interventions undertaken in the course of the restoration process of this 'al secco' painting.

Translated by: Bogdan Ungurean

Fruzsina Bencze **Restoration of the portrait of William II, Prince** **of Orange, and his Bride, Mary Stuart.** **Copy after the original painting by Anthony Van** **Dyck in 1641**

In the academic year of 2013/2014 the author studied with an Erasmus scholarship at the Hungarian University of Fine Arts, where she restored this painting as her examination work of the year.

The painter and the date of the creation are unknown, the artifact has been painted presumably in the 19–20th century in the Hungarian Academy of Fine Arts. It belongs to the Archive Painting Collection of the university.

The restoration of the painting represented a difficult task due to its large size (182x142.5 cm) and its very poor condition. In 1995, on account of the lack of space, the painting was placed in the boiler room of the basement,

where after a flood it stood in 10 cm deep water for several days. This fact can explain the severe deterioration of the artifact, why the ground and paint layers had blistered and peeled widely, at many areas. Due to poor adhesion of these layers to the support, large amount of gaps have been developed on the painting, in form of shell-like scaling. The mainly vertical peeling areas were clearly visible and implied that when the art object stood in water, the canvas absorbed the moisture so decreasing and ceasing the adherence of the rigid layers. The ground and the paint layers became detached from the textile support and curled up like leaves.

After the photo documentation and scientific investigations, restoration began with the reattachment of the peeling fragments, after that the removal of the several varnish layers and contamination was carried out. This intervention was followed by the cleaning of the painting's reverse side, removing the soiling and dust mechanically. Next the deformed areas had to be smoothed out. For consolidation purposes of the fragile layers, the reverse side of the painting was impregnated with *BEVA 371*. The painting was given new stretcher bars and then patches of fabric similar to the support canvas were added to fill the gaps and missing parts caused by earlier damage. Unevenness in the canvas was reduced and the painting's altered shape was corrected with the help of vacuum table. This was followed with the infilling of lacunas, on which the first touch-up coats were done using aquarelle and acrylic paints. The canvas was stretched on its original and modernized stretching frame and was varnished afterwards. Final aesthetic reintegration was made using varnish mixed with oil paints containing a reduced amount of binding media, using mimetic retouching.

In the end, in order to ensure that the surface has a uniform shine, a further layer of protective varnish was sprayed onto the painting.

The decorative frame of the artifact was restored as well, filling up the damaged areas and lacunas with red bole as a ground covered with gold leaf, similar to the original technique. The fragments were then polished into the original to establish a compact surface design.

Translated by: Fruzsina Bencze

Júlia Tövissi

Glazing technique on silver in Recipe books from the 18th century

The research of glazing technique in 18th century sources was motivated on one hand by the existence of numerous wooden altars and sculptures originating from Transylvania, decorated in the mentioned way, on the other hand by the lack of the Romanian professional literature. The present work consists of the study and comparison of 32 recipes from eight recipe books (Joh. Baptista Pictorio, Johann Melchior Cröker, Johan Arendt Müller, H.F.A.

Stöckel, Johann Conrad Gütle, Pater Bonani, Jean-Felix Watin and Antal Ferencz). Among the recipe collections five are written in German, one in Italian, one in French and one in Hungarian. The goal of this work was to create a collection, which can help the research and investigations of the glazed art objects. It was also an essential point in trying to understand, explicate and translate to our recent language the names of the different materials and units of measurement presented in the historical recipes. The discussed glaze recipes are for covering silver leaves or objects made of silver.

Colored glazes on wooden sculptures and altars are transparent, colored layers/coatings, which are applied on metal leaves, that transpire through the upper colored varnish, offering it a metallic, pompous character. The different colored glazes were meant to suggest elegant, expensive materials, while the yellow ones, named gold lacquers or gold varnishes, were used mainly to imitate gold. The commonly used support for these coatings was silver leaf, but leaves out of gold, tin, or rarely copper were applied as well.

The technique had its use already on the medieval wooden altars and sculptures, but it flourished during the 17th and 18th centuries, when this kind of decoration was extended on whole altar and sculpture surfaces.

The research of recipe analogies was based on two Transylvanian recipe books. The earlier one is the Hungarian translation by Sámuel Kendi (Reformed minister of Atid) from 1802, entitled '*Sok ritka és nevezetes Titkokkal tellyes FESTÉS-MESTERSÉG*' of the German author, Joh. Baptista Pictorio's work, '*Die mit vielen raren und curiosen Geheimnissen angefüllte Illuminir-Kunst*', written in 1713.

The second book is the manuscript from 1828, Tomești of Antal Ferencz, entitled '*Rövid oktatás az asztalossághoz tartozó és a képfestéshez megkívántató némelly festékeknek készítéséről és tulajdonságiról. Az architekturából*'.

This work consisted of the identification and explication of the materials, tools, and different units of measure, used in the historical recipes. The comparison was based on the layer structure of the varnishes and the grouping of the different material types (dyes, pigments, binders, solvents, diluents and other additives). The preparation technique of colored glazes, as well as the method of their application, the used tools, and the amount of varnish layers were also taken into account. The technique consists of a multilayered structure: metal support, intermediary layer, colored glaze layer and final coating.

The coloring agents used for colored glazes were organic and inorganic pigments, as well as dyes of vegetable or animal origin. The red glazes were made of Florentine varnish (extracted from the insects cochineal, kermes or made of dyes like brazilin, dragon's blood etc.), the green varnishes of verdigris, and green vegetal dye, the blue coatings of Prussian blue, smalt and tounesol and the yellow ones of vegetable dyes, such as saffron etc.

Based on the studied recipes it can be concluded, that while for gold varnishes binders of mixtures of oils and resins were used, for other colored glazes mainly oils were added. The oils-resin mixtures are mostly complex binders, which consist mainly of resins such as sandarac, mastic, gum lac (shellac) and amber and oils like linseed-oil, walnut oil, poppy seed oil etc.

The work contained as well the reconstruction of four historical recipes: two blue glazes and two gold varnishes.

The studied recipes present numerous similarities of the layer structure, use of materials and the units of measure. In some cases the recipes were borrowed, copied from an author to another. In the case of the gold varnishes, the recipes are generally complex, with numerous components. The recipes of Antal Ferencz, although they represent more simple variations, based on the technique, the used materials and their designation (German terms) are fitting in the line of recipe analogies.

The fact that these recipes were realized is demonstrated by the numerous practical and technical advices and remarks given by the authors.

The research, discover and elaboration of other Transylvanian and Romanian analogies, which would lead to the enlargement of the knowledge about the glazing technique, remains an important task.

Translated by: Júlia Tövissi

Levente Domokos – István Sajó **Investigation of pigments found on painted furniture deriving from the area around Udvarhely (Odorheiu)**

According to ethnographers' publications the painter cabinet-makers from Vargyas (Vârghiş) and from the Homoród (Homorod) Valley prepared the pigments they used themselves, usually from local raw materials.

One of the aims of the research about the painting technology of the furniture from the region of Udvarhely has been the identification of the quarries of paint earth based on the ethnographic and geological reports, and the specification of the minerals and raw materials of mineral origin present locally which are suitable for preparation of pigments.

In the course of the research it turned out that the identification of the one-time quarries in the environment which had been changed during times was almost impossible. Even if not from the places mentioned by the earlier publications but it was possible to collect materials suitable for preparation of pigments. Based on that raw materials found in the surroundings of Homoródmás (Mereşti,) and Vargyas a quite rich range of colours could be made out, which covers the range of colours except yellow and blue used by the painter cabinet-makers worked at that area one-time. Whether the pigments they used were prepared by themselves or not is also a question. Although most of the raw materials could be got from natural exposures, others could only be searched

by the contemporary mining methods. So presumably the cabinet-makers bought pigments from merchants as well. The other aim of the research was the examination of samples taken from as many painted furniture as possible to get more information about the use of pigments of old times. The objects chosen for the research were made between 1630 and 1904, most of them dated. They were used partly for ecclesiastical partly for secular purposes. Present study publishes the results of the X-ray diffraction analysis of the samples.

Based on the samples examined until the middle of the 19th century mainly pigments with mineral or other 'natural' origin were used. The pigments made by the industry (chrome yellow, emerald green, zinc white) appeared only in the second half of the 19th century. Red is most often cinnabar or minium, even used together. Orpiment was added to them in many cases because it makes the painted surface shiny. For orange minium was used. Yellow colours were painted with orpiment but in the analysed samples realgar could be found as well. In some of the yellow colours only gypsum could be found, the colour was produced with some kind of vegetable dyestuff. In the second half of the 19th century the chrome yellow appeared and substituted the formerly used mineral pigments. The green colours were made with orpiment until the middle of the 19th century, mixed with black or with indigo precipitated onto inorganic carrier. In the second half of the 19th century the application of emerald green can be seen as well. It was possible to identify just a few blue colours; most of them were indigo or Prussian blue. The usage of organic dyes was spread already in the 16th century but in the 17th and 18th century it was very frequent.

From the middle of the 19th century onwards appeared the yellows, blues and greens on the painted furniture which were more resistant for UV radiation. Black pigments couldn't be identified by X-ray diffraction; those are probably mainly carbon blacks. As white pigments anhydrite or lead white were used, but in one case zinc white could be found in paint from the beginning of the 20th century.

The X-ray diffraction is not suitable for determination of the place of origin of the pigments identified by the authors and listed above. To get more information about whether the local painter cabinet-makers used pigments originated from the surrounding area or not, further research and investigation in the field of natural sciences and about social sciences will be necessary.

Translated by: Márta Kissné Bendefy

Rebeka Nagy **The conservation of the fragments of the burial wear of Countess Erzsébet Batthyány**

Erzsébet Batthyány was buried in 1674, in the crypt of St. Martin's Church in Szombathely. The tomb was robbed many times over the centuries, with the result that the

clothing remains recovered were in a rather misshapen, fragmentary and incomplete state. The silk lisere fabric of the bodice had many layers of lining and was decorated with bobbin lace. The material investigation proved that the skirt was made of silk velvet. The silver-gilt metal-thread embroidery was presumably part of the decoration of an apron.

The dry textile finds can be easily damaged if they are suddenly immersed into water. Thus the fragments of the wear of Erzsébet Batthyány were conditioned by the help of *Sympatex* semi-permeable membrane before the cleaning treatment started. Thereafter the textiles were soaked in soft water with non ionic surfactant and then they were rinsed three times in soft water. After this process it was possible to rearrange the threads of the fabrics, which were fixed with stainless insect pins, during the entire drying process. After that it was necessary to overview the 17th century European costume history. That was the only chance to find analogue pieces of the corset-bodice, by the help of which to define the 'original' location of the fragments, and to reconstruct the cutting pattern of the object. Fortunately after close observation of the surviving fragments, it could be ascertained that the attire represented the 'Hungarian' type characteristics of the age. After the cleaning and reshaping of the fragments, the cut of the bodice could be reconstructed, as could that of the skirt. During the restoration the remains of the bodice were sewn between two layers of crepe-line. Where the original textile was incomplete, silk fabric coloured brown was substituted; this also served as supporting material for the undecorated parts. That silk layer was put between the textile layers of the corset-bodice for consolidation as a conservation treatment and after that it was sewn between two crepe-lines. The corset-bodice fragments were fragile, so they couldn't be exhibited on a dummy, thus they had to be kept in plane state. The remains of the velvet skirt were fastened to acid-free cardboard covered with cotton fabric and were then covered with crepe-line.

Translated by: Eszter Szatmáriné Bakonyi

Eszter Lili Fa Conservation of a Byzantine type manuscript made in the 16th century

The Serbians settled in the Hungarian Kingdom's territory, next to the Danube during the 16–17th centuries. The settlers not only brought books with them, but also reproduced and bound new ones. The treated book originally belonged to the old Cyrillic liturgical book collection of the Greek Orthodox Church of Adony, than it was taken to the King Saint Stephen Museum, Székesfehérvár in 1913. The book shows typical Byzantine characteristics, the manuscript and the original binding were made at the same time. The aim of the conservation was to make the book usable (readable, presentable) and to prevent further degradation, bearing in mind the principle of minimal in-

tervention and reversibility during the treatment. Therefore the text block and the cover were kept together during conservation, although the possibility of separating them aroused. Hungarian book-collections keep very limited amount of Byzantine book bindings, so the artistic and historical value of the fragmentary volume discussed is unique, which justified the minimal intervention. To keep the traces of the bookbinding structure and the original sewing had priority during the conservation work. Without separating the binding and the text block the aqueous treatment of the paper was impossible. Paper leaves were contaminated mainly around the edges, their inner areas were intact. The bottom part of the text block suffered moisture and mould damage, therefore the sizing has lost and the paper became sleazy. The resizing of the leaves was necessary before starting the refilling up the missing corner areas of the paper. 2% of *Khucel G* (hydroxypropylcellulose) solved in ethanol worked best for sizing the leaves. Curling, waving and forming water stains were avoidable with it. The reinforced paper edges than were suitable for refillment and lining where necessary. There was not possible to make hand leaf casting on the bound paper, so the refills were made of dyed cellulose fibres on suction table in advance, and then dried and glued to the original.

After repairing the text block, head and fore edges were retouched slightly to the original red colour. The book was stored by standing on its bottom edge as normal in Europe, so the moisture damaged the bottom edge and dissolved the red colour from it. This information connects to the history of the book, therefore the author decided not to do retouching on this area.

The broken corners of the wooden board were repaired with a mixture of epoxy resin and sawdust. On the leather book-cover high amount of disturbing, 2–3 mm in diameter insect holes were noticeable, these were filled with a mixture of leather fibres and starch paste and retouched with aquarelle paint. The reconstructions of clasps were made of brass and three leather strips fixed with flat braid, based on analogue pieces.

For the storing of the conserved book acid free box was made. Inside the box a hard cover folder keeps the book stable, and this folder can also be used as reading support and installation.

The book was digitized parallel to the conservation, so the digital version is advisable for searching and reading.

Translated by: Katalin Orosz

Éva Mester Protection of windows with simple geometric subdivision, and the importance of their preservation

The fashion of the stained glass windows was always created by the current public opinion and public taste; and it was inseparable from the current architectural styles.

These ones formed and interpreted the inner spaces, using the possibilities given by the iconography as well. At the beginning in the sacred buildings with gloomy atmosphere often the colour light was the only decoration. Later in the inner places, which became more and more ornate, the stained windows were not required any more, so mainly colourless windows with geometric subdivision were used instead. Through them the natural light could be diffused in the inner spaces without any manipulation.

People of the 19th century who turned to the past created the new style called eclecticism which preferred rich decoration. This new attitude brought back colourful glass windows into the buildings.

Recently an adverse tendency can be noticed, sacred buildings are often deprived of decoration, even of their stained glass windows. The plain, white walls and the stray light are thought to be helpful for meditation and engrossment.

More than 400 years ago a similar change of approach happened already. The reform religions refused the luxury in the buildings. The old, carved, gilded altarpieces, paintings were removed from the churches; the frescoes on the walls were overpainted with lime. The glass windows were simple, with geometric subdivision, mostly with honey-

comb, rectangle or plate glass pattern. These windows often survived several centuries owing to the durability of the metal cames which held the glass pieces together. In Transylvania there are several examples of this kind of old windows still saved in Calvinist, Lutheran and Unitarian churches. Nowadays this heritage is in severe danger. In the course of church reconstructions the window panels are often taken out of their frame and are kept in hidden areas of the building where they are covered with dust and get slowly deteriorated because of the improper storage conditions. In worst cases they get destroyed completely, so important witnesses of our material culture will be lost.

The circumstances of the manufacture of these kinds of windows, the specific forms of deterioration on them and the way of their conservation haven't been discussed in the special literature so far. There is a need of competent technician experts and well prepared conservators, so that besides keeping the original technical characteristics and materials, meeting the safety and thermal insulation requirements, the aesthetic value of the artefacts can be restored as well. This study gives proposal for the saving and maintenance of the glass windows with simple geometric subdivision still preserved in the Carpathian basin.

Translated by: Márta Kissné Bendefy