Abstracts

Zsuzsanna Tóth
Restoration of the Closing Stone

During the renovation of Szigligeti Theatre Oradea (Nagyvárad), a metal cylinder was found, which had been placed, as a symbol of closing the construction of the theatre, at the landing of the footsteps in the lobby on October 15, 1990. The Closing Stone, as it was dubbed in contemporary reports, had been walled up, under ceremonial conditions, in a recess closed down by a marble slab at the inauguration of the theater. As the marble slab had disappeared, it seemed improbable to come across the Closing Stone, so it was a big surprise when they finally found it. The metal cylinder contained the minutes of the ceremonial general meeting held on the occasion of the inauguration of the theater, lists with names of the intellectual and material creators of the theater, placement certificate of the Closing Stone, five paper charters and a parchment one. In the recess, all of them had been damaged by humidity and mould, causing corrosion on the metal cylinder, fragility of paper and fading of writing on the paper sheets, as well as crumbling of the coating layer on the parchment charter. Cleaning of the mould-infected documents had to be done in a bioprotective cabin, under air curtain protection. Strengthening of the weakened documents was carried out in several steps, using a 3% alcoholic solution of Regnal, because on a larger surface, the paper impregnated with the solution would have moldered even from its own weight, prior to the settling of the fixative. Documents were disinfected with Preventol, in one session with strengthening. Sheets were filled in following wet cleaning, by leafcasting.

The rigid and deformed parchment got smooth above cold water vapor in a couple of hours. In case of the parchment charter, the greatest problem was caused by the crumbling of its coating layer, and due to this, the loss of text on it. It was an important consideration that fixing the surface should not turn the white coating layer into glaze, and that it should not change the appearance of the parchment. Based on experiments, spraying with dilute fish-glue proved to be an appropriate solution, but it had to be preceded by spraying with alcohol, in order to reduce surface tension.

As regards the conservation of the metal cylinder, only the mechanical removal of loose corrosion products and passivation of the surface were carried out, together with a temporary fixing of the moved lead plate of the lid by Artiwood epoxy resin, which can easily be splintered from the surface when needed.

Following restoration, the original documents are kept in museum, while their copies, placed in the metal cylinder, got back to the landing of the footsteps in the theatre, together with a similar but smaller metal cylinder containing the document of re-inauguration.

Zsuzsanna Tóth
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Paper and book conservator

Translated by: Katalin Noémi Zimányi

Zsuzsanna Várhegyi – Márta Kissné Bendefy
Drying of waterlogged archaeological leather finds

Although it is widely agreed that for drying of wet organic materials the vacuum freeze-drying is the best method, it is not used for archaeological leather finds in Hungary because of its high expenses. Searching for a more cost-efficient method authors have found the excellent articles of the conservators of the English Heritage and the Museum of London very promising (Karsten et al 2010, Karsten – Graham 2011). In the experiments of the EH and the Museum of London a new method was used among others as well. The drying of leather finds previously conserved with 20% glycerol solution was carried out at about -26 °C in a domestic freezer where drying was helped not with vacuum but with silica gel instead. The method is mentioned as 'non vacuum freeze drying', but unfortunately doubts can arise whether the process is a real lyophilisation. The 20% glycerol solution begins to freeze around -5 °C, when only part of the water freezes, making the solution more concentrated. The 'eutectic temperature' of the mixture where water and glycerol get both solid is -46.5 °C. Because of that, during freeze-drying the temperature shouldn't be higher than this temperature, to assure the sublimation.

Based on the above phenomenon the drying of the glycerol treated leathers at -26 °C is rather a slow evaporation than sublimation. Nevertheless, in the referred publications it is reported that the leathers were flexible after the treatment and their fibre structure was less closed than the pieces dried with other methods; so it seemed to be a good alternative to substitute the expensive vacuum freeze-drying. Authors Várhegyi and Kissne Bendefy carried out experiments about the water uptake of silica gel, and about drying new and archaeological leather samples to get familiar with the method, and to collect data about the changes during the process. Since all the data available on the water adsorption of silica gel was given at +25 °C, tests had to be carried out to check the process below zero as well. It could be found that while at +25 °C and at RH 60% silica gel adsorbs 32% of its weight, at -25 °C and at RH 60% it can adsorb only about 3%, so the process

in the freezer is much slower than at room temperature. About the drying of the leathers it could be observed that the loss of weight started during the freezing already, and the process speeded up in the presence of silica gel. This suggests that when long term storage in frozen condition is planned the leathers should be kept in airtight PE bags and the air should be removed from them by vacuuming to avoid the uncontrolled drying and the hoar forming in the freezer. The new method that the freezing and the drying of the samples were carried out in the freezer not only without covering but also in closed plastic boxes, had some lessons to learn. The time necessary for the drying in both cases was almost the same, but in the closed boxes the amount of the silica gel can be different for thick and thin leathers so the process can be more tailored to the actual cases. The use of closed boxes in the freezer has the advantage also that the drying process and the water adsorbent capacity of the silica gel are less interfered by the fluctuation of the RH and the amount of hoar-frost in the freezer. The tools chosen for the experiments proved to be appropriate: the upright freezer could be overviewed well and the samples could be moved in and out easily. By the help of the digital recorder it was possible to get information continuously about the change of the temperature and the RH in the freezer and in the closed boxes. Future experiments are planned about the optimal amount and arrangement of the silica gel placed into the freezers; about the risk of overdrying; and about the parameters of conditioning of the samples after drying.

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Márta Kissné Bendefy
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Translated by: Márta Kissné Bendefy

Hajnalka Fábián-Tóth
Conservation of a Chinese paper umbrella based on the theoretical and practical knowledge of its manufacture technology

This umbrella is a material relic of the Hungarian Franciscans' mission to China. This lasted between 1929 and 1952 in Hunan province. The object was probably made in an umbrella workshop at a provincial town in accordance with the millennial craftsmanship tradition.

The canopy had been impregnated with tung oil, which over time had caused the paper to become stiff, brittle and became sticky in places. As a result, use of the umbrella had produced numerous splits and holes on the canopy.

After getting to know the materials used in making the umbrella, the way of construction and the status of the object, the goal was the physical strengthening and the aesthetic restoration of the artefact.

It was necessary to ensure easy access of the object from all direction during the treatment: Therefore, the umbrella was suspended at two points; on the tip of the screen and on its handle with an adjustable length tape. Conducting experiments to find ways of making repairs that would be suitable in transmitted light, too, constituted an important task. Assembling and supporting the paper fragments on the suspended object was made by temporarily fixing the pieces on a transparent polyester film with small magnet pairs and with continuous back illumination.

The removal of soiling stuck to the surface and repairs made with insulating tape earlier on was performed using a 2:1 mixture of mineral spirit and acetone. The same mixture was used to soften and unstick the areas of paper clumped to each other.

Supporting the damaged paper took most of the time and patience, as because of the permanent tension and stretching in the paper of the open umbrella it was difficult to fit the torn edges to each other. In 55% relative humidity, the splits were backed and made good using Japanese tissue paper dyed brown and supplied with methylcellulose adhesive film. Replacement parts were made from dyed Japanese paper smeared with tung oil on which retouching was performed with aquarelle on the basis of remaining traces and repeating pattern.

The damaged and missing parts of the yarn were repaired using cotton thread, with reconstruction following the techniques used when the yarn was made.

As a result of the treatment, the umbrella regained its original shape and its structure became sufficiently stabilized. The integrated completions contribute to the aesthetic appearance of the artefact.

Hajnalka Fábián Tóth
Paper and leather conservator artist MA

Translated by: the author

Rebeka Nagy
Similarities and differences - Restoration experiences of three banners of the Cathedral of Szombathely

The conservation of the two-sided, single-leaf banners is always difficult because of their structure. The result of the process can only be spectacular with careful, conscious and well prepared conservation process.

Three, two-sided, single-leaf banners from the Cathedral of 'Visitation of the Blessed Virgin Mary', Szombathely, Western Hungary had been conserved by the author.

One of them, from the year 1813, is made of red silk-damask, decorated with floral motives, embroidered with gilded silver thread. In the centre there is an oval inlayed painting, this depicts the 'Our Lady of the Visitation' on one side, and Luke the Evangelist on the other side.

The second one is a red silk-damask banner, which was made in 1864 with painted decoration. In the centre of it there is a rectangle inlayed painting representing Saint Joseph on one side, and Noah with the ark on the other side.

The third one is a silk damask banner which has a golden-orange colour, but originally it was also red. The rectangle inlayed painting in the centre depicts Saint Florian and Saint Sebastian on one side and Saint Catharina of Siena on the other side.

At first the same conservation process seemed to be useable for all of the banners. There were many similar processes used, such as: all of the paintings were detached from the fabric – their conservation was carried out by a painting conservator – but most of the fringe trims were left in their original place. The fabrics were soaked in 0,5% solution of non-ionic detergent, rinsed many times, and for drying they were fastened to their original shape by stainless insect pins. After the above steps the different making techniques and conditions of the fabrics of the banners required different conservation methods. In the case of the third banner it was not necessary to sew it between two layers of crepeline, because splits appeared only on the painted layers. These damages were conserved with crepeline impregnated by synthetic glue, ironed at low temperature. The second banner was sewn between two red dyed crepeline layers; the splits were fixed with silk threads by conservation stiches. The banner embroidered on double sides with gilt silver thread needed the most complicated conservation method. Because of the bulging embroidered decoration a crepeline fabric was dyed to red with batik technique, masking the embroidered area before dying, so that it remained colourless. It was sewn first with tacking stitches around the embroidered motifs and then on the whole surface of the artifact. Because of the above method, the crepeline on the surface stayed almost invisible.

Rebeka Nagy
Textile and leather conservator artist MA

Translated by: the author

Judit Madarászné Gorej
Restoration of a columnar standing clock

The object owned by the Hungarian National Museum was restored by the author as a diploma work at the Specialization of Wooden Objects and Furniture Restoration of the Hungarian University of Fine Arts. The origin of the standing clock is unknown. The two main elements of the object are the clock case and the clockwork within.

The case made at the beginning of the 19th century is taller than the empire clocks from the same time and have different decorations and structural design. Its carved scenes do not elaborate antique mythological themes but they have Christian content instead.

There is a quarter-repeating, spring driven and pendulum controlled Clement anchor escapement in the clock case. On the enameled dial-plate, there are Arabic numerals and inscription with the name of the clockmaker and the place of manufacture: `Mathias Samwald in Mischkolz`; removing the cover-plate another engraved caption can be seen: `Joseph Graff Prag N210`.

The characters sitting on the edges of the clock case cornice represent apostles. In the area above the clock box the figure of Jesus is visible with a Roman soldier on his left holding his pilum. Sitting and resting figures are above them, in a rocky landscape point their faces up to the pediment, where the scene of the transfiguration or the ascension of Jesus Christ could have been seen once. However, these small statues are already lost.

Solid basswood components were used to form the clock case. The anatomical direction of the wood had not been considered in the construction, and no tenon joints were used on most of places to fit the wooden elements to each other. Tool marks remained apparent on many parts of the wooden surface.

Oil, dust and corrosion products contaminated the clock mechanism, and several elements of it were missing. A further intervention has taken place at the clock box, when structure of the original clock mechanism were modified and replaced in the box. The separated wooden pieces of the clock base were glued together with thickly applied animal glue, and the same material was used to fill the gaps.

The restoration started with taking out the clockwork from the clock case. The wood and metal parts were treated separately. The removal of contaminants on water-sensitive marbled surfaces was carried out with ‘Szuperkromofág’, a mixture of organic solvents; the gilded parts were cleaned with enzymes, and the unpainted wooden surfaces with the aqueous gel of carboxymethyl cellulose. It was followed by breaking down the previously repaired and incorrectly glued elements of the clock case and by placing them in the correct position.

Many ornamental and structural elements of the object were missing, the imprints of which mostly remained. Form of some missing elements could be identified. The completion of these ones was made from maple. A mixture of Bolognese chalk and animal glue was used for the ground of the marble painting, while mixture of Champagne chalk and animal glue for grounding of the gilding were used. The retouching of the marbled surfaces was carried out with aquarelle paint, while of the completions with black acrylic paint mixed with lead white pigment. Gold leafs were used for replacement of the missing gilding, the small injuries of the gilded surfaces were retouched with gold aquarelle paint. Microcrystalline wax was applied as protecting layer on the painted areas and 10% Paraloid B67 in white spirit on the gilded surfaces.

The unidentifiable elements, such as the head ornament of the upper part, figure elements of the rocky landscape, the garland, the six columns, which also named the clock case, and the background that fills the space between the columns and the attached textile decoration could not been reconstructed.

Their remained imprints on the foundation can only be imagined by the shape of the missing columns and their capitals. The proportion and decoration of the columns are not known for sure; therefore, their reconstruction was carried out digitally, only. The former division of the columns of the clock was shown in an exhibition by using a Plexiglas installation.

Huba Vályi master horologist helped the restoration of the clockwork. The components were cleaned with Argentol and with a mixture usually used by horologists, containing water, potassium soap and ammonium hydroxide. The metal surface of the clock got a protecting coating with a mixture of Mowilith and Paraloid B72 solutions, and finally, the clock mechanism was fixed in the clock case with screws.

Judit Madarászné Gorej
Wood and furniture conservator artist MA

Translated by: Anna Muraközy

Edit Pelles
The restoration of an enameled hookah

The diploma work of the author at the Hungarian University of Fine Arts was the restoration of a hookah (qalyan) made in the 19th-20th century in Iran.The artefact belongs to the property of the Déri Museum in Debrecen. The purpose of the conservation was to stabilize the object and to improve its visual interpretation and aesthetic appearance. For the aesthetic restoration, the damaged parts were completed with enamel, the material used originally.

The hookah was originally made from four parts fitting each other, but now it has only two remaining elements; the base (height: 19 cm) and the tobacco bowl (height: 15.4 cm).

This artwork is special on account of the recessed enamel decoration that covers almost its entire surface, depicting floral motifs and portraits typical of the Qajar period. Deformations, missing enamel, oxidation, and traces of repairs were observable on the hookah. Missing enamel had been substituted by applying wax in the gaps.

The composition of the metals and the enamels was analysed with portable X-ray fluorescence spectroscopy. Microscopic investigation of the cross-sections of the enamel helped to study its current condition and how it was originally made.

In conservation, it was necessary to disassemble the artefact into its component parts in order to strengthen it statically. During the cleaning process, 1g/l surfactant (Dialkyl Sulfosuccinate – which has a neutral pH) diluted in distilled water was used. The broken and weakened parts were strengthened from behind with Japanese paper and a 20% solution of Paraloid B72 in acetone.

Repairs of missing enamel decorations were made of enamel using two different techniques.

In the case of the decorations which were completely missing the form of the empty cell was cut out of a 0.1 mm thin sheet. First, white primer enamel was fired on both sides of the metal, then the top surface was fired with several thin layers of coloured enamel, and then the pattern was made with porcelain paint and fired.

In the other mode, where the damaged enamel was fragmented, a negative of the missing part was taken with silicone putty, and then with the help of a special jewellery plaster a negative mould was taken from the silicone, and after filling it with enamel, the replacement could be fired. In order to achieve the proper thickness and the same primercolour without shades, it was necessary to fill the plaster negative and fire it several times. Finally, the painting of the pattern was prepared and fired again.

In some cases, the infill needed to be taken out of the plaster and put into the original enamel to finish the pattern in the proper shape. After the infills were taken out of the negative and put in their future place and painted, they were fixed upside down, cast again in plaster, and re-fired.

In the case of larger missing parts, thin copper wire or copper wire netting was placed into the negatives for strengthening purposes.

The fixing of the enamel infills was accomplished with a 30% solution of Paraloid B-72 after the artefact was assembled. The assembly of the artefact was achieved with the remelting of the original soft soldering material since an adhesive would not have given the proper stability. Although objects comparable to the hookah were investigated, for lack of reliable sources, the missing parts were not reconstructed, only drafts and 3D models were made.

Edit Pelles
Metal and goldsmiths conservator artist MA

Translated by: the author

Mester Éva
The risks of reconstruction of leaded glass windows and glass paintings

With the transformation of the European states and with the increasing influence of public opinion, reconstruction is more accepted recently in the protection of the monuments and artifacts.

Reconstruction means the re-creation of non-existing details or the completely destroyed work of art, which is a complex task.

The loss of the former memories of material culture could have been caused by the carelessness or by the change of fashion.

The greatest losses were caused by intentional war destructions, the targets of which were often the most beautiful buildings, parts of the cultural heritage.

After such traumas, a certain amount of time has to pass so that the need of recreate the work of art can emerge.

The above opinion refers to the glass windows as well. At the time of their making, the creators (architects and craftsmen) originally intended to design these decorative elements as integral parts of the buildings.

With their loss, the building gets a different significance, resulting in the emptiness of the architectural space, as the glass paintings are not only colourful in themselves, but also because their transparent nature makes the atmosphere of the interiors coloured too.

In the case of partial reconstruction, a part of the work is remade. Here, the authenticity of the reconstruction is less typical, as the use of materials, application of colours, the surface structure of the glasses and the painting techniques are all recognizable in the remaining fragments, which provide a solid base for the interpretation.

The overall reconstruction poses a high risk. The original scaled chart drawings do not always give the correct base either, to avoid the above problem.

The opaque colours applied to the paper provide only a reference basis for the selection of stained, transparent glass fragments.

The change in the composition of the paints can also be a problem. Certain colours are completely transformed. Not only their intensity decreases, but their spectrum can also be changed, such as green can become black.

If these circumstances are not taken into account during the reconstruction work, compositions may be created which are completely false, not authentic and different from the original artwork.

It is important to note that the mistakes mentioned above were typical of pre-digitalization times.

Éva Mester
Glass designer DLA, restorer

Translated by: Márta Kissné Bendefy