

Preface and Abstracts

At the sixth postgraduate conference at Székelyudvarhely (Odorheiu Secuiesc), many conservators from Transylvania reported about their work beside lecturers from Hungary and Germany. This volume contains mostly their studies since we intend to illustrate the actual situation of the condition of art objects in Transylvania and the Partium and the work done for their protection. We find the measures taken for the rescuing of library and archives documents and the written and printed documents of depopulating parishes especially important since first of all the latter ones would perish unless they are collected conserved and properly stored. Preventive conservation, including the creation of an optimal environment for the objects of art to slow down their deterioration, has been placed in the focus all over the world with the purpose to avert the race restorers have to run against time and with the conservation of the huge number of objects that have been heaped up in the collections and have not been conserved or got deteriorated in consequence of improper storing conditions.

However, the development of proper exhibition and storing conditions will need a long time despite our efforts, and the work done by restorers will not be superfluous even then. It is good news that training of object conservators has been started on a university level in Nagyszeben (Sibiu) in the co-operation of the Lucian Blaga University and the Astra Museum beside the painting conservator training going back to a long tradition in Bucuresti and lately also introduced in Iasi.

Our annual publication contains the thesis works of two students of the first class that has graduated. In result of

the professional contacts established at Hungarian and international conferences and at the postgraduate trainings at Székelyudvarhely (Odorheiu Secuiesc) during the past decades, one of the students could carry out a part of his/her work in the Department of Methodology and Training of Conservation of the Hungarian National Museum. Beside the specialists of the Astra Museum, the conservator of object restorer training organised in the co-operation of the Hungarian University of Fine Arts and the HNM took part in the direction of the conservation of the object of the thesis work.

In the academic year of 2005, connected with training of conservators, an exhibition was organised in the Palló Imre Music School from items chosen from the material of the annual exhibition “Megmentett műkincsek” (Preserved art Treasures) of the HNM, which contains art objects conserved by the students graduated from painting, sculptor, wood, furniture, metal-goldsmith, paper-leather, textile-leather and siliceous objects conservator branches.

Getting acquainted with the constructed heritage is an important component of postgraduate training. This time we visited the monuments of the “rough land of old Szilágy”.

We have to fulfil a sad obligation in this volume. We have to take leave of our colleague ERNŐ NEMES KOVÁCS (Szilágysomlyó, 1973 – Málta, 2007) wood sculpture conservator, one of the lecturers of the conference, who died very young.

Miklós SZENTKIRÁLYI **Restoration of Miklós Munkácsy's large painting** **titled Christ before Pilate**

The first painting of Mihály Munkácsy's Christ “trilogy” was first shown to the public in Paris in 1881. More than 100 years later, the painting arrived in the Déri Museum in Debrecen as the last of the three in February 1995. The owner of the painting lent it on the condition that it would be restored. In preparation to the restoration, analyses were carried out with the purpose to evidently separate the pigment and varnish layers applied by Munkácsy and the ones coming from later interventions. The study of contemporary documents was an equally important task. In 1881, Adolf Braun made photos of even the tiniest details in Munkácsy's studio in Paris. The photos, which Mrs Munkácsy's younger sister donated to the museum

of Békéscsaba in 1928, were the most important sources at the investigation of the authenticity of the work of art. The two methods excellently completed each other and explained certain problems that surfaced at the observation of the painting technique.

According to the results of the analyses we decided that the layers that were not contemporary to the painting, that is the dirt, the overpaintings and the darkened varnish layers would be removed, then the uncovered original surface would be conserved, varnished and finally aesthetically retouched. Munkácsy often used bitumen in his paintings. The mystery of “asphalt” has often been debated and studied. Thus we paid special attention to the determination of the areas painted with bitumen and to the study of the layer structure of these areas during the analysis of the painting. We also investigated if this material has caused or could cause deformations. As we could observe, the painter really

applied a deep brown underpainting at the light and the white colours. This material did not flow or cause corrugations in the surface. At the same time, the brown shadings have preserved their original stability and freshness, which are so characteristic of the painting, that they actually determine its colours and shapes as a whole. The cleaning of the painting, the removal of the multilayered thick varnish and the overpaintings were made chemically with materials determined after tests with solvents. This was more complicated than usual since the original pigment layer was covered with different materials applied subsequently at five or six times. After cleaning, we found a better condition than expected: about 60% of the surface was excellently preserved apart from a few small worn areas, 30% was worn and 10% got ruined or perished. Regrettably, the background painted with bitumen was preserved in a strongly worn condition owing to the conflagration it suffered in 1907 and the later improper treatments. The measures of the aesthetic reconstruction were determined after the documentation of the uncovered condition.

The consolidation of the support, the conservation of the stretching edges, the movement of the huge canvas, its safe and mild re-stretching and its permanent placement in the Déri Museum in Debrecen needed thorough preliminary studies and planning. The concept focused, beside safety and quality, on the circumstance that these actions could be repeated several times without the slightest hazard. The tears and the deformities were consolidated with gluing up a new canvas and the shrinking caused by the strengthening of the edges in 1938 could partly be corrected at the first stretching. The new strengthening of the edges of the picture was made with a stripe of cloth impregnated with Beva 371, in which eyelets were fixed at every 5 cm. The strengthening tape was fixed at these eyes with 3x35 mm large screw-nails as it had proved useful at the Golgota painting. The stretcher was cleaned, disinfected and the corners were modified making beds for the new forked wedges that ensured the sufficient tightness. After the stretching and the wedging of the canvas, the painting was varnished.

The retouching method was chosen according to the degree of damage of the given territory and the possibility of interpretation. The losses were treated with restraint. We developed the painting from step to step gradually approaching the preserved original. At a few places only deferring retouch of a neutral shade, naturally invisible retouching and, where it seemed justified, reconstruction was applied at larger losses that were significant from the respect of the interpretation of the composition. Besides, we intended to evade every treatment that would suggest perfection to avoid the mistakes of our predecessors. The restored painting of a size of nearly 30 m² was placed beside the other two components of the trilogy, the *Ecce Homo* and the *Golgota*, in the Munkácsy room of the Déri Museum.

The members of the team that carried out the restoration/conservation were: Erzsébet Béres, István Lente, Miklós Szentkirályi painting restorer artists; Sándor

Szilágyi, Zoltán Hasznos photographers and Sándor Szilágyi Jr. conservator, wooden object restorer artist. Erika Vadnai Painting restorer artist and László Kriston physicist analysed the painting, and Katalin Sz. Kürti made the art historical researches.

Miklós Szentkirályi
Painting conservator artist
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Uwe NOLDT **Wood deteriorating insects – monitoring, treatments and results**

The specialist of the Institut für Holzbiologie und Holzschutz in co-operation with the University of Hamburg and other institutions have recently launched a number of projects, which deal with the monitoring of wood deteriorating insects in buildings (open-air museums, churches, mills and castles) and in collections first of all in Germany and also in Latvia (National Museum, Riga) and Romania (Astra Museum, Nagyszeben). The overwhelming majority of the biological deteriorations can be traced back to building damages and building defects, in result of which the wooden materials become wet and deteriorating fungi and/or insects can settle. On our latitude, the most significant insects that deteriorate dry wood are house longhorn beetle (*Hylotrupes bajulus*), death watch beetle (*Xestobium rufovillosum* DeGeer) and book-worm (*Coelostethus pertinax* L.). They can be active for years and their large populations threaten the static load-bearing capacity of the building elements and can cause the crumbling of even the complete material of art objects made of wood. We also have to mention the group of broad-nosed bark beetles (*Cossonidae*), and the recently more and more frequently appearing wood deteriorating ants and the imported powderpost beetles (*Lyctidae*) especially the *Lyctus Brunneus* Stephens, which deteriorate the secondarily moistened wooden materials. The degree of the damage made by the insect larvae can be very different in wooden objects and in buildings. The evaluation of the damage caused by insects in the buildings of open-air museums was carried out with the so-called warning light system following the first preliminary observations and the evaluation of monitoring arrangements. The largely damaged buildings that certainly needed treatment were marked with red, yellow marked the medium deteriorated buildings and monitorings to be introduced, and green marked the buildings that had formerly suffered insect deteriorations or were free of damage. Blue was used to mark the buildings in which insect deteriorations could only be demonstrated at certain places in certain elements, yet monitoring was ordered here as well. The following procedures were applied at monitoring. *Collections*: museum keepers, students and colleagues standing before graduation weekly collected

and counted the insects and their enemies. *Paper sealing*: wooden elements that seemed to be attacked by insects were covered with tapestry and the emergence holes were counted every week. *Light-traps*: from April to August, plastic and metal tripods with a bulb of $\lambda = 400\text{nm}$ wave length, two sticking foils, or a local light source with sticking traps placed on the ground. The yearly counting of all the wood deterioration organisms. *Sticking traps*: Sticking foils that can be bought in shops, or cardboards treated with special insect adhesives. Counting of the insects once a week or a month. *Hanging-scaffolds and boxes*: horizontally hanging wooden ladders or boxes. Checking once a week, periodical counting and grouping by sex. Comparison with paper seals. *Traps with pheromone and extract materials*: application of commercial pheromones at book-worms and extract from wood deteriorated with fungi at death watch beetle on the first occasion. Regular counting once a week or a month. Evaluation of the wood dust with macroscopic observation. Monitoring helped to determine the centres of the infected areas, the times of emergence, the routes of expansion of the marked insects, the yearly periodical changes of predator and prey, and that the females of the death watch beetles emerge sooner than the males. We could demonstrate the enticing effect of light sources, the use of emergence holes by various individuals in and out of season and we could assess the paces of emergence rates. Monitorings revealed the superficially executed handicraft, and the posterior monitorings showed the success of treatments. Several of the results founded the purposeful application of the treatment methods and/or the setting up of traps with pheromone and extract materials, and experiments with biological enemies. The focuses of the introduced measures were shifted to hot air treatment at a controlled moisture content and microwave heat treatments applied on complete buildings or on certain parts of buildings. They are tested with the help of industrial partners and perfected regarding the determination of the minimal temperature, energy consumption and the protection of the environment. Since 1999, we have followed the successes of other treatment methods like gassing with carbon dioxide, methyl-bromide and sulphur-difluoride and the use of heat treatment chambers in the case of movable objects. At the same time, we continue the checking of the results of the treatment of test logs containing the various physiological stages of the main wood pests, the house longhorn beetle, the death watch beetle, the book-worm and the powderpost beetle with various disinfecting methods using various measuring instruments. The test logs are prepared proportionate with the architectural structures or the pieces of furniture, they are treated and evaluated from the respect of the death of the test animals. The conclusions drawn from the observations called attention various defects like insufficient treatment parameters, weak points of buildings, insufficient heat distribution, differences in solidity etc. and they supported the necessity of applying differentiated parameters depending on the type of the insects and

their physiological stages. The experiments supported the necessity of keeping the norm, which specified a treatment temperature of 55°C for at least 1 hour.

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István DEMETER – Zoltán MIKLÓS
Restoration of a Székely gate from the beginning of the 19th century

The stereotypes repeated about certain historical regions or population groups can become so generally accepted that they are passed from one generation to the next as facts alienated from the truth lying behind them. Nostalgia felt to the mythical past has been one of the specific traits of the modern aspect of origin like the theory of the Hun origin of the Székely and the idea of the double Conquest independent of the historic realities. Similarly, the idea that the so-called Székely gates came from the east (China) still has supporters. Travellers of the past centuries and later ethnographic descriptions reported about the large, finely ornamented gates and often even their origin was suggested. The recent paper does not intend to go into details regarding the problem of origin. Our topic is the documentation of the restored object, the determination of the type and the description of the condition and the process of the treatment.

The gate marked with the date 1816, which stands at the entrance to the ethnographic exhibition of the Haáz Rezső Museum in Székelyudvarhely (Odorheiu Secuiesc) titled “Flowers of Székely Land”, was originally the entrance to the land of the Vajda family in Farcád village. The land allotment has changed so significantly since its erection that its function had already ceased when the museum bought it. The gate belongs among the Urvarhelyszék gates of the old type with carved posts. A professional “gate carver” of the region must have prepared it. The basic raw material was oak. The originally pine tile roof was replaced with a tin roof some time before its collection. Three posts (gate feet) supported the gate enclosing the foot gate and the large gate. The terminal of the gradually thinning convex body of the post was decorated with an engraved tulip pattern and a motive of tulips, leaves and tendrils ornamented the lower flat element of flowery outlines of the head. Two spiral motives compose the middle section, while the post ornament tapers in the shape of a five-lobed palmette. A horizontal beam projecting on both sides connects the posts. It was widened with decoratively cut lines from the posts upwards providing a broader support to the dovecot and the roof. A carving of leaves and tendrils projects from the horizontal beam in the middle of the arch of the cart gate. The quadrangular

gate panel above the foot-gate is the most ornamented element. The coat-of-arms of Transylvania in a round shield occupies the central field. Its interesting feature is that the master depicted the double-eagle in it. The carving of the Austrian double-eagle is not a unique case in itself, but there are no analogues of a similar composition of the coat-of-arms of Transylvania. Tendrils with leaves and vines run into a tulip motive on both sides of the panel and above the shield. The year 1816 is marked at the bottom of the panel. One of the heads of the double-eagle is cut off. In the second half of the 20th century, the authorities compelled the owners to carve off the ornaments of the gates decorated with coats-of-arms, then they had to be boarded up or the complete panel had to be removed. This gate is less maimed, so it seems more probable that one of the heads of the eagle was cut off after 1848 or in the year of the Compromise of 1867 to protest against the Austrian absolutism.

The parts of the posts dug into the earth usually rotted after 50 years, so, just like in our case, they were strengthened a few times. The bore-holes in the posts indicate that the wings of the gate, which had disappeared by the time of the collection, were several times replaced. In consequence of the strengthening of the gate posts, the three parts of the carved posts (foot, body and head) remained only at the lateral post of the large gate. The gate suffered the gravest damage after it had lost its function and the periodical renovations ceased so that both physical and biological deteriorating factors left their traces in the wooden construction. The hammered lock bolts holding the strengthening elements of the feet were covered with rust. A joint was missing from the right side of the foot gate. The triangles enclosed by the joints of the large gate, the so-called small windows, fell out on both sides. The binding of the joints got weakened and the pegs rotted. The dovecot made of pine boards was rotten beyond rescue. The gate posts were poorly preserved and rotten, and a bird nest, an anthill, fungus infection and deterioration by insects could be observed in the horizontal beam. The gate was taken apart and disinfected for 72 hours in Phostoxin. After airing, it was mechanically cleaned. The dirt settled on the surfaces of the wooden elements was removed with brushes and a vacuum-cleaner. The weakened wood was stabilised with epoxy resin (Araldit BY 158, Härter HY 2996, + toluol). According to the measurements, it was successful to a depth of 8 cm except the upper part of the horizontal beam, which had to be completed in the total length because of the progressive rotting. The gate represents a significant museum value even without completions, so only the larger missing elements were replaced, while the cracked and broken parts of the ornaments were only conserved. The joint of the right side of the foot gate was replaced according to the pattern of the facing element, following the lines of the jointing. At the large gate, a few parts of the small window were replaced. The new elements were not carved since the missing elements of the two joints came from

different parts. The completions were prepared from the material of a roofed oak bridge built in 1830, which was later pulled down. Thus we could get the colour of the gate without staining and retouching. The hammered iron elements were treated with RO 55 rust remover and passivating agent and rifle grease. We did not reconstruct the rotten dovecot since together with it, it would have been impossible to take the Székely gate into the exhibition room. To the period when the gate is exhibited in the exhibition "Flowers of Székely Land", the Székely gate was reconstructed without the dovecot with two rows of pine tiles from Székelyvárság placed directly on top of the horizontal beam. We did not reconstruct the original red painting of the posts and the horizontal beam, of which only traces have been preserved, since the actual condition of the surfaces did not afford it. During reassembling, the original pegs, screws and hammered iron nails were used and the missing ones were replaced.

With the restoration of the Székely gate, the third oldest gate of the region could be exhibited within museum circumstances beside the 14 gates of the gate exhibition of the museum in Szejkézfürdő. According to our agreement, the former owner got a new foot gate without wings prepared by a restorer specialist after the pattern chosen by the former owner. On the occasion of the last collecting tour we found that it had not been raised during the past seven years, it was kept in a barn without function.

Emil Ráduly ethnographer museologist, Petronella Kovács and András Morgós restorers our colleagues from Hungary contributed to our work.

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András EMŐDI

Book and library rehabilitation in the Roman Catholic Diocese of Nagyvárad

In Nagyvárad (Oradea), it was the Catholic Church that owned libraries that were eminent on a national level regarding both the quantity and the contents. A significant library collection was accumulated by monastic orders and the secular clergy since the Middle Ages. During the time of the Turkish occupation and the Reformation, the bishopric and the chapter survived only in name until the Catholic restoration one and a half century later. Protestant princes transported a part of the book collections to the princely centre, while the rest got into the Jesuit monasteries of Kolozsvár (Cluj-Napoca) and Gyulaféhérvár

(Alba Iulia). A large part of the collections got dispersed and perished. The bishopric and its chapter, the seminary and the Jesuit monastery, which settled back at the turn of the 17th and 18th centuries, once again became the centres of book collection. Imre Csáky and the subsequent bishops founded the bases of an episcopal library of a baroque mentality and a modest stock. Ádám Patachich developed a representative library of an imposing collection of 8.000 volumes in the library hall of the episcopal palace. However, he took it with him when he was nominated to the post of the archbishop of Kalocsa. The libraries rapidly grew from the 18th century: the bishopric had nearly 40 thousand, the capitular and the diocesan seminary each 15 thousand volumes, while thousands of volumes could be found in the libraries of the Premonstratensian Secondary School and the Capuchin Order.

In 1948, the bishopric was forced to leave the episcopal palace in a single day. The majority of the stock of the episcopal library and the library of the seminary that had been moved there perished, the books were stolen and the Greek political refugees housed in the building used them as fuel. The smaller portion was transported to the cellar of the county library, where they were significantly deteriorated in the moist environment. A fragment of the collection was rescued to the gallery of the cathedral in 1948. In 1962, the authorities confiscated the more valuable books from the book collection the seminary preserved in the home chapel of the episcopal palace controlled by the state and the Church, while the Church had the remaining books transported to the cathedral and added them to the rescued episcopal books. The books of the chapter kept in the upstairs libraries above the chapel escaped the attention of the authorities and survived the post-war period. The remains of the Premonstratensian Secondary School were nationalised and only 2–3000 books survived until the reactivation of the Order. The library of the Capuchin Order, at the same time, survived the decades of communism practically without loss. Thus by the beginning of the 60's, the remains of the book episcopal, the capitular and the seminary collections had been transported into the building of the cathedral, where their perishing continued due to inappropriate handling. Later, the book collection was stuffed into the rooms of the nationalised capitular archives, where it waited for a better fate in a bulk. Another severe loss was when 11 incunabula and 98 antiquities were moved to the National Library of Bucuresti during a forced registering between 1978 and 1982.

At the start of the rehabilitation of the library in 1988, we had to decide the fate of the book collection of about 25000 volumes, which had suffered the above calamities and was stored in complete disarray. The freshly founded collection got the name Diocesan Monument Library. The Transylvanian Museum Society was asked to accept the duty of professional supervision.

After the removal of the junk, the archival material was put into boxes and placed in closed cases. The separation of the three main groups seemed simple since the volumes of the chapter contained the stamps of the owner, which was not the case regarding the volumes of the bishopric and the seminary, and the identification after the labels on the spines did not bring the expected results. The RMK (Régi Magyar Könyvtár [Old Hungarian Library]: Hungarian prints from before 1711) volumes, the foreign prints from the 15th-17th centuries and the Hungarian and foreign prints from the 18th century. By June 2000, three rooms of the former capitular library in the building of the cathedral were renovated and furnished with 700 running metres of wooden shelves, copies of contemporary ones, with the significant financial support of the Ministry of National Cultural Heritage Protection of Hungary. The volumes of museum values of the three main groups, 6 incunabula, 126 RMK, 266 antiquities and about 800 17th century foreign prints, about 10000 prints from the 18th and the beginning of the 19th centuries were placed in these rooms furnished with security equipments. The six former archives rooms will serve as library stacks and archives after the renovation as well. The once national Catholic schematism collection and the 10000 volumes of books and periodicals, mostly from the 19th century will be kept here.

The collection of the complete parish libraries of parishes that were closed or abandoned and the more valuable volumes from the majority of the parishes including 2 incunabula, 93 RMK, 108 antiquities and about 1000 volumes from before 1800 significantly enriched the collection of the library.

The library is open to scientific research. In 2000, we started taking into inventory the collection parts and joined the national retrospective bibliographical data collection work. We have made the scientific elaboration of the book collection of the former chapter, composed the monograph and the catalogue of the products of the former seminary press of Nagyvárad (Oradea) and started the publication of the old collection of the library according to chronological aspects in co-operation with the National Széchényi Library of Hungary.

There are no urgent tasks regarding the protection of the collection. We could not find traces of active mould or insect activity either in the main body or among the books collected from the parishes. In a longer term, however, the book bindings will need conservation and the many physically damaged volumes have to be conserved.

András Emódi
Oradea

Éva BENEDEK– Emese BÍRÓ – Kisanna BARABÁS
Care of the books and the archival materials collected
from depopulating parishes in the R.C. Saint John the
Baptist rectory in Marosvásárhely

The Ministry of National Cultural Heritage Protection of Hungary has conducted a competition from 2002 to rescue the books and the documents of depopulating parishes and parsonages left without priests in Transylvania. The R.C. church Saint John the Baptist and the Episcopal Office in Marosvásárhely (Târgu Mures) took the responsibility of storing the significant quantity of 16th–20th century material collected from Mezösámsond, Székelyhodos, Marosjára, Jobbágyfalva, Jobbágytelke, Dicsőszentmárton, Ákosfálva, Székelyvécke, Egrestő, Alsójára, Sinfalva, etc. villages in the course of a few years.

Before checking and disinfection, the books and the documents were separately stored on wooden shelves prepared for the purpose in the basement of the new study centre Deus Providebit raised in the yard of the church.

A part of the books were prepared from handmade rag paper and printed with black and coloured pigments of natural bases, while the raw material of the books from the 19th–20th centuries contained groundwood and synthetic pigments were often used in printing. The latter ones are weaker and their colour is slightly yellowish. The bindings of the books are calf, ox cattle-hide of vegetable tanning and pigskin of alum tawing. Synthetic leather and textile bindings were also found in a few cases. The covers boards are generally made of paper, only a few are beech and oak panels.

A part of the archival collection consisted of high-quality paper written in black or dark brown iron-gallic ink. Modern ink was found on lower quality acidic papers of the 19th–20th centuries, and a few items were typed on copying paper.

Most of the books and documents were preserved in a good condition, while a few items were significantly damaged showing traces of active mould on the leaves. The analyses made in the micro-biological laboratory of the Sapientia Transylvanian Hungarian University of Sciences at Csíkszereda (Miercurea Ciuc) demonstrated beds developed from the spores of two mould species: *Aspergillus fumigatus* fresenius and *Aspergillus* sp. This necessitated disinfection. All the books and the documents were placed in plastic bags and crystalline paraformaldehyde was put beside them in small pouches. The chemical was left in the bags for 48–64 hours. The developing formaldehyde destroys bacteria, mould spores and other biological parasites. Then the books and the documents were watched for 24 hours in a metal chest prepared for this purpose. For the sake of a more effective disinfection, 0.5–1% solution of Preventol CMK (para-chlorine chloro-meta-krezol) in ethyl alcohol was applied on the leaves of the books and the documents that had been attacked by active mould. On the bindings, 1–1.5 % solution of Steregenol in ethyl alcohol was also applied. After disinfection,

a part of the archival material was sprayed with the non-watery neutralizing solution Wei T,O® Spray No.12 (magnesium metoxide and methyl-magnesium-carbonate: MMMC). The disinfected leaves were desiccated in the open being covered with medical gauze to protect them from the sunlight.

The leaves of the collection were dusted with brushes then they were open in a fan shape to be aired.

Some of the leather bindings were desiccated and brittle, and on certain bindings the over-sizing of the leather could be observed probably in result of the dissolution of the tanning agent. Several wooden panels were damaged by insects. Many bunches of documents tied up with threads suffered mechanic mechanical injuries, the edges got split and brittle.

The leather bindings that suffered chemical and biological damages were treated and softened with a sort of fat liquor containing surfactant cleaners, materials that replace the lost fat and the moisture content and regenerating agents, which was suggested by the National Széchényi Library (Hungary). Then a conserving paste prepared after the recipe of the National Library of Moscow was applied on the surfaces. White dirt and mould could be observed on certain synthetic leather bindings. Their colour and texture became more pleasant after being wiped with 30% watery solution of glycerine.

The treated books and documents will be stored in closed wooden cabinets with glass doors prepared for this purpose on the choir of the church. The poorly preserved books of folio sizes were wrapped in medical gauze to be stored in a horizontal position. The documents were placed in cardboard folders. We hope that storing in closed cabinets will protect the collection from the eventual fluctuations of the temperature and the moisture in the church. Our suggestion concerning the ideal storage conditions was: 15–20 °C, 44–55% RH and 50 lux. The work is being carried on and the authentic elaboration of the books and the documents has been started.

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Restoration of a Hungarian folk calendar from the 19th century and a prognosticon written in Roman language with Cyrillic letters

Hungarian folk calendar

The calendar is the property of the Teleki-Bolyai Documentation Library in Marosvásárhely (Târgu Mureş,.). It was opened to the public in 1802 owing to Count Sámuel Teleki of Szék the founder of the Bibliotheca Telekiana. The library initially counted 40000 volumes, to which the materials of numerous libraries, aristocratic, school, monastic, teachers' and medical ones were added. The largest of these collections (80000 volumes) was the Bolyai Library, including the two Bolyais' manuscript library of 20000 pages, which had earlier worked as the library of the Calvinist College of Marosvásárhely (Târgu Mureş).. The collection contains numerous incunabula, first editions, products of famous Western European press houses, artistic bindings and books illustrated by outstanding masters. Zsuzsanna Bethlen of Iktár the count's wife's Hungarica collection is especially valuable.

The prognoses of the Hungarian folk calendar apply to the year 1782. The small print was printed in two colours. The text is black, the titles, the symbols and the feasts were written in red. The content mirrors the traditional structure of fold calendars: the list of the symbols, the month divided in two pages, the prognoses about the seasons, health and diseases, about the "Noble Transylvania", the list marking the places and the dates of the markets and finally the chronicle of the Hungarians including the events of the lives of the contemporary aristocratic families. Empty sheets were bound between the pages of the calendar for the owner to make notes on it. The volume is composed of five numbers, which were stitched together at three points.

The analysis of the fibres proved that the calendar was made of hand made rag paper of medium long fibres. The pH value of the leaves was 5.5, while the level of glue content was low. The analyses demonstrated the presence of various fungi.

Disinfection was made in the vapour of formalin. Other restoration schools prefer chemicals less harmful to humans, in Romania, however, formalin is often used partly because of financial considerations and partly due to the lack of relevant researches. After dusting and numbering the leaves with a pencil, the volume was taken apart to leaves and the cleaning was carried on with a rubber. After solubility tests, the leaves were bathed in a watery-alcoholic bath (1:2), then they were washed in a watery-alcoholic bath and re-glued with carboxi-methyl-cellulose. Completions were made with fitting Japanese paper to both sides of the leaves and carboxi-methyl-cellulose was used for gluing. To reconstruct the cover, we searched for analogues in the Téka. Simple cardboard covers were generally glued to the body of the book only at the spine. In our view, functional aspects are more em-

phatic at volumes that are likely to be daily studied as compared to works of art, thus the cover cut from hard cardboard was glued not only to the spine but a flyleaf was also inserted. This is a compromise, but it can be removed any time. Finally the book was bound in a decorative Japanese paper and cotton binding.

Romanian prognosticon

A number of pages, among them the title page are missing from the calendar written in Romanian with Cyrillic letters. At the end, it contains a table of prognoses for more than one hundred years starting with 1816, which implies that the prognosticon was edited in 1815. The illustrations are linked with the depiction of the year, the planets and the symbols of the zodiac. The notes that support or refute the prognoses are interesting from a cultural aspect, since they mirror the approach to the prognoses and the confidence and belief in them.

The book did not suffer biological damage. Acidity, photo-chemical processes and human interventions deteriorated it. The linen binding, the indigo blue flyleaf and the paper stripes with typed texts used for the reinforcement of the centres of the sheets, which covered intact surfaces as well, attest to repairs made by a book binder. These stripes made the paper rigid, which tore along the stripes. The last leaf was bound upside down. The corners were bent back and at a few places larger losses could be observed. A few tears were glued together with postal stamps. The book was often thumbed, as it can be read from the large surfaces preserving greasy handprints. The paper became brittle and rigid in consequence of acidity. The brown discolouration of the leaves suggests production faults: it can come from the composition, the quantity of chemicals left over after treatment, which could accelerate the process of ageing. The high glue content increased the rigidity of the paper. The water traces on the leaves tell that it was once soaked with water.

After dusting and numbering, the book was taken apart to leaves and dissolution test was carried out with the 1:1 watery solution of ethyl alcohol. At the notes made in ink and with ink pencil, the superfluous ink was removed: the solution of ethyl alcohol was applied on the back of the written surface with a wad and the superfluous quantity was absorbed with a blotting paper. So we did not need to fear that the remaining ink would disperse during the washing. The leaves were washed being immersed in warm water containing a neutral detergent. After steeping, the repair stripes were removed. Re-gluing was made with the 0.3–0.4 % watery solution of carboxi-methyl-cellulose. The leaves were dried in the air, then they were put into a press. The leaves were prepared to completion at the tears with fluffing, and the broken edges where there was no writing were removed. The losses were replaced with doubled Japanese paper. The corners were rounded similarly to the original. The tears were strengthened on both sides with Japanese paper. Ernő Krón book binder

helped us at the preparation of the cover and the binding. The book binder is a special personality of Marosvásárhely (Târgu Mureş), who inherited the workshop and the trade after three generations. He practices and passes on his trade in a traditional way and, at the same time, he is interested in the theories and methods of restoration as well. In his workshop, he keeps equipments from the end of the 19th and beginning of the 20th century, and flyleaves and covers, etc. from the same age. In lack of analogues, we used papers, marbled paper cover and a flyleaf of a neutral shape, which offer a moderate and pleasant harmony to the cover.

Both books were placed in acid-free cardboard boxes prepared after the sizes of the books.

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Andrea BERNÁTH **Conservation of an Eskimo child's boots**

The Eskimo pair of boots restored as a thesis work is the property of the International Ethnographic Collection of the Franz Binder Museum operating within the frames of the Complexul Național Muzeal Muzeul ASTRA. The exact date of the production is unknown, but it is certainly more than 100 years old as it was donated to the museum in 1901. The yellowish boots must have been made for an about three-year-old child (regarding European sizes). The thick leather soles are yellowish-orange of a darker shade than the rest of the boots and their surfaces are shiny. The matt yellowish-creamy legs were made of thinner leather. They end in round leather stripes at the top, to which cotton ribbons were attached. They are decorated with white and red horizontal and arched stripes on a grey background. The boots were stitched by hand using a thread made of animal intestines. The microscopic comparative analyses revealed that they were made of reindeer skin. The analysis of the tanning demonstrated that the skin was not tanned. The leathers skins of the boots were not coloured, the discolouration of the sole came from the fat that had been smeared in it. The result of the pH measurement was satisfactory: it gave a value of 5.

The objects had earlier been mechanically and chemically cleaned and the restorer tried to soften them and conserve their shape. The restoration data sheet contained the followings: they were cleaned with a netex brush, moulds were removed with ethyl alcohol, the material was softened with the watery solution of glycerine, alcohol and fungicide, and small sandbags and faience fragments were used to restore the shape.

The small boots were in a strongly dehydrated condition at the beginning of the restoration. The leather was

desiccated, hard and brittle. Dust covered the surfaces. Insects damaged the material causing losses, which extended to about 5–10 % of the leather surface. Where there were many holes, the leather thinned. We found spots indicating the activity of micro-organisms.

One of the boots was torn along the stitching at the toe probably because the thicker sole and the thinner leather of the leg reacted in different ways to moisture and shrinking caused by desiccation could lead to the tearing of the less resistant skin. There were similar tears at the jointing of the upper stripe and the leg as well on both boots, which could be caused by earlier interventions when the shape of the boots was restored without having sufficiently moistened and softened the skin. The straps and loops also became brittle on the sides. No trace of wearing could be detected.

To determine the measurements of the boots, a sketch was made exactly following the cut. Then a scaled copy of the boots was prepared from cardboard, which later helped to keep the shape of the objects.

The purposes of the conservation were the disinfection, the cleaning and the increasing of the moisture content of the boots, the reconstruction of the original shape, the replacement of the losses and securing appropriate storage conditions. After dusting, mould development was stopped with a solution containing 70 % isopropanol and 30 % distilled water, the skin was cleaned and the pencil traces were removed. In effect of the treatment, the skin somewhat softened. To restore the original shape of the boots, the moisture content of the leather had to be stabilised. A perfectly closed exsiccator was used, in which the vapour content was stabilised with various saturated salt solutions. Concentrated potassium-bichromate was placed in a vessel of a slightly smaller diameter than the transparent glass vessel, in which the changes could be checked. The stabilisation of the micro-environment was controlled for a few days with the help of a digital thermo-hygrograph placed into the exsiccator. In the first few days, salt had to be added since the moisture content of the closed space increased to an undesirably high value with the dissolution of the solid matter. Finally, we succeeded in securing a stabile environment of a moisture content of 50 % and a temperature of 18–20 °C. The small boots were placed on a ceramic grate and a cotton wool layer covered with neutral synthetic material was put underneath. This damping humidification method brought only partial results: the skin was no more rigid, but it did not contain enough moisture to afford the restoration of the original shape. Thus, all the deformed elements were moistened across a Sympatex semi-permeable foil membrane. The membrane lets water through the specially prepared surface only in vapour form so over-moistening can be evaded. The boots were wrapped in Sympatex foils, over which a thick paper saturated with water was placed covered with a rubber bandage and finally wrapping foil covered the objects, which hindered the fast desiccation of the paper. The layers were removed after half an hour

so that the condensing vapour could not over-moisten the objects. The moistened skin was fit onto the cardboard model. The model, which was prepared from two parts (boot-last and leg) to a size slightly smaller than the boots, proved to be sufficiently pliable also because of the properties of the cardboard, which made it easier to place them into the boots without causing deformations. The model was isolated from the skin with a self-adhesive polyethylene foil. A polyethylene bag was placed inside, which, to evade overstressing, was gradually filled in with polystyrene balls. Bags filled in with salt were used where a greater pressure was necessary. At a few places the skin was rigid and thicker: here local moistening was used, then the given surface was pressed with the hand. This enabled us to stretch the skin in a controlled and finer manner.

After colour tests, the skin of a roe deer tanned with alum was chosen for the completion of the boots since this appeared to be the most fitting solution from an aesthetic aspect, especially regarding the grain. The new leather was coloured with metal complex leather dyestuff, then it was thinned to the thickness of the object with a skiving knife and a scalpel. After tests with adhesives, the 1:1 mixture of rice starch and Planatol of poly(vinyl-acetate) based watery dispersion adhesive was used on the completions. The patches were fit and glued to the leather from inside. During the complete process of the treatment, the boots were kept in the microclimate developed in the damp chamber without removing the packing used for the restoration of the shape. In result of the above-described interventions, the objects were brought into a stabile condition with respect to the theory of minimal interventions and, at the same time, an aesthetic shape could be reached, which matches the original materials and the age of the object.

A cardboard box lined with Japanese paper was prepared for the storage of the boots, one side of which was perforated to enable regular checking. Mechanical stress should be evaded at moving (hanging, folding, tying knots on the laces etc.). We suggest to exhibit the objects on a soft and chemically neutral surface and to keep the packing inside the boots to preserve the shape.

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Assessment of the condition of the flags preserved in the Székely National Museum

The organic materials of flags are very sensitive to environmental changes, dust and other pollutants, and various biological pests also largely contribute to their deterioration. The storage and exhibition circumstances do not

agree with the regulations of the protection of art objects in many private and public collections. They are often treated according to practices borrowed from everyday customs. This approach has caused the perishing of many textile objects.

The Székely National Museum in Sepsiszentgyörgy (Sfintu Gheorghe) launched a program of the conservation of flags and other textile objects and the effectuation of storage conditions matching the European standards. No recapitulative study has so far been published on the flags of the museum, so in this paper we will also describe the objects and the characteristics of their technology beside the determination of their condition.

Revolutionary flag, inv. no.: 1887. A pure silk flag of a single face made of a single leaf composed of three, red, white and green parts pointed at the free edges. It probably belonged to the town council of Sepsiszentgyörgy (Sfintu Gheorghe) in 1848/49. In the central field, Hungary's coat-of-arms with the crown decorated with beads and sequins can be found composed of red, white and green pure silk and framed with a silvery ribbon. It is enclosed on the two sides by green-leaved olive branches held together at the stems with a red-white-green bow. On both sides of the ribbons, the year "18-48" is embroidered with cord twisted from gold threads. In the red stripe the inscription "S. SZ. GYÖRGY VÁROS" can be read made of the materials of the flag. The Sun and the Moon sewn on the flag and three stars embroidered with silver threads refer to the coat-of-arms of Háromszék. Fringes made of metal threads decorate the free edges of the flag. Only one of the three finial tassels have been preserved: it was made of red, white and green threads.

Sports banner, inv.no: 345/1948. The two-sided banner was made of two backed leaves of diagonal rib weaving. It was a challenge trophy won by the team of the Székely Mikó college in 1905. The edges are trimmed with red, white and green triangles. On the obverse, red and green gems with embroidered frames are arranged at regular intervals in the central field surrounded with ornamental tulip embroidery. The inscription embroidered on a clarinet velvet reads: "A MAGYAR TANULÓK/ORSZÁGOS TORNA VERSENYÉNEK/VÁNDORDÍJA/1901." [Challenge trophy of the national gymnastics competition of Hungarian school-people/1901.] In the right corner Hungary's embroidered red, white and green coat-of-arms with the crown decorated with chiselled gems and spangles. The shield is enclosed by an oil branch with leaves and berries on the right and an oak branch with leaves and acorns on the left. The colours of the embroidery threads are silver, gold, red, green and brown. On the reverse, the inscription „KÜZDJ ÉS BÍZVA BÍZZÁL!” is embroidered with gold thread. The tassel was made on a wooden base from two sorts of gold threads. The edges were stitched together with gold threads, while the fringes were made from yellow textile threads.

Sports banner, inv. no.: 345/1948. The two-sided banner was made of two machine rib weave leaves with white

cotton lining. It is a deposit of the Székely Mikó College. The banner is composed of red white and green stripes of identical sizes. The edges are fringed, and each a tassel can be found at the free corners. On the obverse, an interior frame of cornflowers embroidered with gold threads encloses a picture field, in which a round medallion framed with embroidery bears the inscription: „SEPSISZENTGYÖRGYI/ REFORMÁTUS/ SZÉKELY MIKÓ-KOLÉGIUM/ 1908”. [Calvinist Székely Mikó College of Sepsiszentgyörgy/1908] Folk motives are embroidered on the right and the left sides of the medallion with white and silver threads. Outside the frame, tulips are embroidered with threads of the same colour as the banner. On the obverse, the symbols of the college can be seen: a shield red at the top and blue at the bottom. In the shield, a Sun embroidered with gold threads can be found in the middle on the left side and a Moon embroidered with silver threads facing it on the right side. A wreath of oak branches embroidered with gold threads can be seen above the shield with the inscription „LEGYEN VILÁGOSSÁG” “fruit lux” in a ribbon under it. The symbol of thee letters “E” can be found in a round frame of ornamental embroidery in the left lower corner. The colours of the embroidery threads are white, silver, gold, green and red.

Military standard, inv. no.: 1888. Two-sided flag of two satin leaves from World War I. It is lined with sleazy cotton. The upper stripe is light blue, the lower one is yellow. The inscription on the obverse is embroidered with red threads: „SEPSISZENTGYÖRGY R.T. VÁROS KÖZÖNSÉGE/1914./A CS.KIR.2. GYALOGEZRED 3-IK PÓTSZÁZADÁNAK”. [The community of Sepsiszentgyörgy R.T. town/1914/to the 3rd reserve company of the 2nd imp. royal infantry] A faded painted inscription can be read under the yellow part: „1914 ÉV” [year 1914]. This suggests that the inscription was first sketched and then embroidered. The reverse is composed of three red, white and green real silk stripes. The fringes on the free edges were made of metal threads, and each a tassel made of two kinds of gold threads prepared on a wooden frame decorate the free corners.

Flag of the masons and carpenters' association, inv. no.: 1885. The single-sided cotton banner of simple weave was made of a single leaf having three forks. It consists of three red, white and green stripes of identical sizes. A metallic cord trims the edges. It was nailed to the pole. In the central field, the small coat-of-arms of Hungary can be seen in the white stripe. Under it, the tools of masons and carpenters can be found enclosed by two green-leaved branches crossed at the stems. Silver ornamental cords and ribbons were used for the shaping of the crown and the coat-of-arms. The shield is composed of stripes made from the tricolour material of the flag. Red, silver and green embroidery threads were also used. The crown is decorated with red, white and green polished stones.

Flag of the tanners' guild, inv. no. 1886. Single-sided pure silk flag made of a lined single leaf composed of red, white and green stripes. It probably came from the time

of the revolution of 1948/49. It has three forks. The gold inscription was made with a pattern: „SZ.GYÖRGYI TIMÁR CZÉ”. [Tanners' guild of Sz.György] Underneath, the following inscription arches upwards: SZ. MÁRIA ISTEN ANYA MAGYARORSZÁG VÉ”(-DŐJE). [St Mary godly mother Hungary's patron]. The Hungarian crown embroidered on red velvet in the central field is decorated with a silver cord, ribbons, metal inlays and red, white and green glass beads. Fringes of metal threads decorate the free edges and originally probably red white and green nappy textile tassels prepared on wooden knobs sat at the ends of the forks.

Flag of the tailors' guild, inv. no: 1884. The apprentices of the tailors' guild of Sepsiszentgyörgy (Sfintu Gheorghe) used the single sided, three-forked flag made of a single leaf composed of red, white and green stripes as members of the National Guard during the revolution of 1848/49. It was made of plain linen. The forking edges are trimmed with a redoubled red-white and green ribbon. The coat-of-arms of Hungary with the crown can be seen in the central field with an inscription under it stitched with tricolour cords: „A S. SZ. Gyi. N. Szabó Cz. 1848”. The crown and the shield were prepared from patches of the material of the flag completed with thin and thick silver threads and spangles.

We found during the assessment that the majority of the flags were spotted and dirty, the raw materials, apart from the linings, got thinned, and they were poorly preserved, torn, broken and incomplete. The embroidery and the fringes made of metal threads got oxidised. A few items were improperly strengthened with patches. All of them needed imminent restoration. Until then, in order to prevent further deterioration, the storage places were disinfected it was suggested to store them horizontally spread on a flat, neutral surface, protected from dust, strong light and UV light and at steady humidity and temperature: 16–18°C, RH 44–52%. After restoration they should be exhibited for only shorter periods in a horizontal or slightly inclined position in glass showcases and protected from UV light.

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