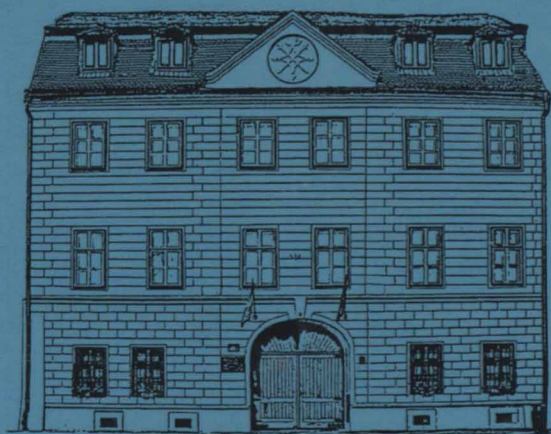


BRUKENTHAL  
ACTA MVSEI  
XVIII. 4



# **BRVKENTHAL. ACTA MVSEI**

## **XVIII. 4**



**MINISTERUL CULTURII**  
**MUZEUL NAȚIONAL BRUKENTHAL**

**BRVKENTHAL**  
**ACTA MVSEI**

**XVIII. 4**

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## SOME REMARKS ON THE CONSERVATION AND VALORISATION OF ORIENTAL CARPETS IN TRANSYLVANIA SINCE LATE 19<sup>TH</sup> C., WITH SPECIAL REGARDS ON THE BRUKENTHAL NATIONAL MUSEUM'S CONTRIBUTION

Alexandru Gh. SONOC\*  
 Simona STĂNCULESCU\*\*  
 Camelia DORDEA\*\*\*

**Abstract:** *With the first researches on Oriental carpets and the first exhibitions dedicated to them in late 19<sup>th</sup> c. and early 20<sup>th</sup> c., the old Anatolian carpets kept in the Lutheran churches in Transylvania attracted the attention of art historians and merchants. Aware of their value, the Transylvanian Saxon intellectuals and the leadership of the Evangelical Church took the first measures to protect them, at first by museification, then also by some preventive conservation measures and by limiting the possibility of selling those still kept in churches. However, until mid-20<sup>th</sup> c., the active preservation of carpets was decided by the parishes, which resorted to amateurs or to the possibilities represented by the local textile industry. In Sibiu, apart from the collection of the Brukenthal Museum, which includes mainly items coming from the Evangelical parishes (especially from the local one), exhibited in the Brukenthal Palace and in the ferule of the Evangelical Church, the study of some old photographs attests that during c. 1919–1941 carpets belonging to collectors from the city were exhibited in the former Museum of Saxon Ethnography. The rugs kept in the Brukenthal Museum's collection were less affected by such interventions. Since late 20<sup>th</sup> c. their preventive and active conservation is carried out in the museum's laboratory, by its own specialized staff, which earned a good reputation, proven by its involvement in the restoration of a large number of Oriental carpets and of folk rugs from various public and private collections. Nowadays, the carpets in the museum's collection are better valorised, both through research and through their display in a special room of the permanent exhibition in the Brukenthal Palace and in various temporary exhibitions organized abroad.*

**Keywords:** *Oriental carpets, conservation, display, documentation, research.*

**Rezumat:** *La sfârșitul sec. XIX și începutul sec. XX, odată cu primele cercetări asupra covoarelor orientale și cu primele expoziții dedicate acestora, vechile covoare anatoliene păstrate în bisericile luterane din Transilvania au atras atenția istoricilor de artă, dar și ale negustorilor. Intelectualii sași și conducerea Bisericii Evanghelice, conștientizând valoarea lor, au luat primele măsuri de protejare a acestora, prin muzeificare, apoi și prin unele măsuri de conservare preventivă și prin limitarea posibilității vânzării celor încă păstrate în biserici. Cu toate acestea, până la mijlocul sec. XX conservarea activă a covoarelor a fost decisă de parohii, care au recurs la amatori sau la posibilitățile reprezentate de industria textilă locală. La Sibiu, în afară de colecția Muzeului Brukenthal, ce include piese provenite în special de la parohiile evanghelice (în special de la cea locală), expuse în Palatul Brukenthal și în ferula Bisericii Evanghelice, studiul unor fotografii vechi atestă faptul că între cca. 1919–1941 în fostul Muzeu de Etnografie Săsească au fost expuse covoare aparținând unor colecționari din oraș. Covoarele păstrate în colecția Muzeului Brukenthal au fost mai puțin afectate de asemenea intervenții. Începând cu sfârșitul sec. XX conservarea lor preventivă și activă se desfășoară în cadrul laboratorului muzeului, cu personal specializat propriu, care și-a câștigat un bun renume, dovedit prin implicarea sa în restaurarea unui mare număr de covoare orientale și scoarțe din diferite colecții publice și private. În prezent, covoarele din colecția muzeului sunt mai bine valorificate, atât prin cercetări, cât și prin prezentarea lor într-o încăpere specială din Palatul Brukenthal și în diferite expoziții temporare organizate în străinătate.*

**Cuvinte-cheie:** *covoare orientale, conservare, expunere, documentare, cercetare.*

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### 1. Some historical aspects concerning the conservation of Oriental carpets from the Lutheran churches since late 19<sup>th</sup> c. till mid-20<sup>th</sup> c.

As Céline Trautmann-Waller recently emphasized (Trautmann-Waller 2017, 1), during the last third of the 19<sup>th</sup> c. the Oriental carpets (an important commodity, previously used especially for royal and aristocratic representation) became gradually standard items in bourgeoisie households, which led to an increased demand for them and at the same time were published also the first studies devoted entirely to this category of textile artifacts (Lessing 1877; Riegl 1891; Holt 1901; Bode 1902; Kimberly Mumford 1902; Martin 1908), the art historians from Germany and in Austria-Hungary showing a particular interest in this subject (On the views of the Viennese carpet researchers on art history and their relation to the German and Austro-Hungarian Orientalism: Marchand 2009, 398-403). It could not be therefore a surprise that the first international exhibition devoted only to Oriental carpets from the 16<sup>th</sup> c. – 19<sup>th</sup> c. was organised in Vienna (1891) at the Österreichisches Handelsmuseum in Vienna (On this exhibition: Karl 2019. For the exhibited carpets: Katalog 1891; Orientalische Teppiche 1892) and that the first exhibition of Anatolian carpets was organised in 1914 in Budapest (On this exhibition: Pásztor 2020. The exhibition's catalogue: Csányi *et al.* 1914; Vegh, Layer 1925). It was only a few years after 1886, when the Országos Magyar Iparművészeti Múzeum in Budapest had exhibited the 24 Oriental carpets (18 of which were Turkish) from the collection of Arnold Ipolyi (1823–1886), the Roman-Catholic Bishop of Oradea / Großwardein / Nagyvárad (Batári 1994, 39. On the legacy of A. Ipolyi: Czobor 1886; Sarca 2011; Lakatos-Balla 2012. On his carpets collection: Radisics 1887; Gombos 1989). By contrary, at that time, when the Oriental carpets (either of Ottoman or of Persian origin) were already a transnational commodity, a civilizational and imperial one (Moallem 2018, 4; cf. Osipian 2022; Armer *et al.* 2022), in the United States of America the Oriental carpets were almost unknown before the Centennial Anniversary exhibition in Philadelphia (1876), where several such textiles were presented by the government of Persia and the public began to be interested in them (Butler 1913, 12).

The exhibition “Masterworks of Muhammedan Art” in Munich (1910), to which collectors as Lehmann Bernheimer (1841–1910) and Julius Böhler (1860–1934) contributed, offered the possibility to remark connections between motifs oc-

curing on various objects, produced in different regions of the Islamic countries and in different periods and broke up with Orientalism and exotic fantasies, setting a new standard for the reception of Islamic art in Europe (On this exhibition: Lerner, Shalem 2010. The exhibition's catalogue: Sarre, Martin 1910). At that time, as noted by Mircea Dunca, the European artists became aware that like other exotic items, as the African masks and the Japanese prints, the Oriental carpets are the expression of a genuine artistic vision and may help those who are searching for new visual solutions (Dunca 1994, 6). The photography, which developed very much during the second half of the 19<sup>th</sup> c. and in early 20<sup>th</sup> c., stimulated the research on Oriental carpets (Trautmann-Waller 2017, 5-6), facilitating especially the study of their typology and of the spread of certain specific motives. Nowadays, the study of old photographs and postcards brings new information concerning the provenance of certain carpets and thus on the history of some museums' collections.

The locals' awareness of the value of Ottoman carpets in Transylvanian Saxon churches increased due to an exhibition organized in Bistrița in October 1913 by the “Sebastian Hann” Association for Local Art (*Sebastian Hann- Verein für heimische Kunstbestrebungen*), in which 32 exhibitors (including the local Lutheran church) presented 169 Ottoman carpets and other textiles, of which 24 carpets from the mentioned church (Teppichausstellung Bistritz 1913. On the association's activity: Ittu 2019). The great exhibition of Budapest (1914) was the most important event where Turkish carpets were displayed: 228 items arrived from Transylvania, namely 157 from Saxon Lutheran churches, 24 from Hungarian Reformed churches, 25 from the Brukenthal Museum, 22 from private Transylvanian collections and the others from private collections in Hungary (Ionescu 2007, 15). This points that the Transylvanian heritage of Oriental carpets has come to the attention of the specialists in Germany and Austria-Hungary, as proved by the references (although still relatively rare) from the carpet literature published before the end of World War I (Neugebauer, Orendi 1909; Csányi *et al.* 1914; Csermelyi 1914). Thus, interested foreigners began to visit the Lutheran churches of the Transylvanian Saxons, right to see these carpets, as noted by Ernst Kühlbrandt (1857–1933) about the Black Church in Brașov, where previously their main interest was the church organ (Kühlbrandt 1927, 46). Its rich collection of old Anatolian carpets became, as Alois Riegl said in 1896, an “European attraction” (*eu-*

*ropäische Sehenswürdigkeit*) (Kühlbrandt 1911, 525; Kühlbrandt 1927, 46) and also, for long time, a landmark for study, conservation and display of Oriental carpets kept in Transylvanian churches.

As in Austria-Hungary the trade with Oriental carpets had a long tradition and both the collectors and the Orientalist trend in house decoration increased the demand for such a commodity, the market was supplied both from internal sources (as churches and private collections) and by imports. In late 19<sup>th</sup> c. and during the first half of the 20<sup>th</sup> c., Anatolian carpets were typical interior design items in the Lutheran churches of the Transylvanian Saxons, both in urban and in rural areas, where they were hung on galleries, pews and choir walls, more rarely being documented their use as floor carpets (Ionescu 2005a, 7; Ionescu 2006, 36; Ionescu 2007, 38; Ziegler, Ziegler 2020, 14-19) and, sometimes, to cover funeral slabs (Ionescu 2007, 38; cf. Schmutzler 1933, 17; Kertesz-Badrus 1978, 13) or their hanging on the pulpit, in Reformed (Calvinist) and Unitarian (Antitrinitarian) churches (Kertesz-Badrus 1985, 22; Kertesz 1991, 143; Ionescu 2007, 39). In the Hungarian milieu, whether it be Protestant or Catholic, the number of such carpets kept in the churches was lower than in the Saxon areas (Ionescu 2007, 39), and the custom of their donation by the parishioners seems to have been more recent, for the oldest donor inscription in Hungarian on a carpet dates back only to 1723 (Ionescu 2005a, 8). In the Romanian churches, whether Orthodox or Greek Catholic, decorated with murals and icons and with folk rugs on the floor (actually kilims, different as regards their material, technique and design), Anatolian carpets (if there were any) were used also as floor covers, which led to their degradation and disappearance (Ionescu 2007, 39). Although in Transylvania the Ottoman carpets were more frequent in the regions with German and Hungarian majority than in those inhabited mainly by Romanians, in the Hungarian environment few of these carpets survived till early 20<sup>th</sup> c. (Kertesz-Badrus 1985, 21; cf. Csáki 2020; Horváth 2020).

A recent study points that in late 19<sup>th</sup> c. – mid 20<sup>th</sup> c. paintings by Transylvanian Saxon artists as well as old photographs document old Anatolian carpets and sometimes (only in photographs) other Oriental rugs as owned both by the Lutheran churches and by private persons, even by painters (Sonoc 2023). There is also reliable information that at that time old Anatolian carpets were owned also by antiques merchants and collectors. Thus, in 1907,

Emil Sigerus (1854–1947), a collector and ethnographer from Sibiu, estimated that in his city about 20 rugs were still in private hands (Kühlbrandt 1907, 42), but the same year the Art and Industry Museum from Vienna purchased from a merchant based in Sibiu (namely Benő Grünblatt) 4 small-sized carpets (one of them being a Lotto) and probably also from him in 1908 a large Lotto (Völker 2001, 28), which would mean c. 25 % of the old Anatolian carpets which existed in the city at private owners. However, private owners from Sibiu still had some old Anatolian carpets even much later, as from one of them a ‘Transylvanian’ double niche carpet (inv. no. 66439/863) was purchased in 1962 by the Art Museum of Romania (Dunca 2006, 44-45). At that time in Braşov c. 20 carpets were privately owned, according to Adolf Resch (1854–1926), a local goldsmith and numismatist, who himself owned an equal number of carpets only few years ago (Kühlbrandt 1907, 42).

As the most of the old Anatolian carpets were kept in churches (especially in the Lutheran ones of the Transylvanian Saxon communities), they became a very coveted commodity for local but also foreign merchants, who were interested to buy them and to resell them either to collectors (private and even public ones) or to those who wanted to decorate their home following the fashionable Orientalist trend. The interest of foreign merchants for the Anatolian carpets kept in Transylvanian churches began many years before 1896, when Alois Riegl recommended to Franz Obert (1828–1908), Parson of Braşov some measures of preventive conservation, apparently after a stealing attempt (Kühlbrandt 1927, 46). More exactly, it was in the 1870s, when so many old carpets were sold in Braşov and around (Kühlbrandt 1911, 526), even (despite it seems unlikely) hundreds of them, according to those who deplored “the irreparable loss” caused to the Transylvanian Saxon heritage by rich collectors from western Europe (Kühlbrandt 1907, 41). Trying to mitigate the effects of this trade with old Anatolian carpets, it was stated that only few carpets were sold following presbyterial decisions (Kühlbrandt 1907, 42), that at that time apparently no carpet was taken out from the churches in Braşov and around (Kühlbrandt 1927, 46), which would suggest that these carpets have been bought mainly from private owners, mostly Hungarians, Greeks and Romanians, not Saxons (Kühlbrandt 1907, 41). As Stefano Ionescu noticed, right at that time when Transylvania became the main supplier of small classical Turkish rugs for western European collec-

tions, churches from Transylvania no longer received gifts consisting of old Turkish carpets (Ionescu 2005b, 3; Ionescu 2007, 33-34). In late 19<sup>th</sup> c. and early 20<sup>th</sup> c. they got however (but apparently only in cities like Mediaș, Sibiu and Brașov) some 19<sup>th</sup> c. Ottoman carpets and Central Asian ones, as well as Caucasian and even Balkan rugs. This is right the period when the Brukenthal Museum's collection of Oriental carpets was created and gradually grew up.

The increasing demand for old Anatolian carpets made their preservation in churches a true challenge, especially in remote rural communities and where the Transylvanian Saxon population dramatically decreased, as a consequence of the economic difficulties associated to a series of political events which, since the Hungarian Revolution of 1848 and the following Civil War, affected all urban and rural Transylvanian Saxon communities. So, already in 1866, following the concerns of the librarian J. Groß about the security of some carpets in the Black Church in Brașov, 7 of the most conspicuous ones were transferred to the museum, "in order to protect them against further damages" (Kühlbrandt 1907, 43).

The interest in the conservation of the old Oriental rugs held by various Lutheran churches serving Saxon communities in Transylvania dates to the late 19<sup>th</sup> c. – early 20<sup>th</sup> c. and is, most likely, a consequence of the increasing awareness of their beauty and value after the exhibition in Vienna (1891), as according to Ernst Kühlbrandt (1857–1933), a teacher and art historian from Brașov, it was triggered by a recommendation of Alois Riegl (1858–1905), made in 1896 (Kühlbrandt 1927, 46). More than the landmark book by E. Schmutzler (Schmutzler 1933) which was published in only 325 copies, right the earlier writings of Ernst Kühlbrandt on Anatolian carpets kept in Lutheran churches of the Transylvanian Saxons (Kühlbrandt 1898; E. Kühlbrandt 1907; Kühlbrandt 1911) and some pages by Victor Roth mentioning these textiles, due to their cultural and historical importance, in a book about the Transylvanian Saxon decorative arts (Roth 1908, 216-221) contributed to an increasing awareness among the Transylvanian Saxon intellectuals about the value of these textiles. The intellectuals living in rural areas, mostly priests and teachers, managed generally to influence positively the peasants, who often resisted to the merchants' enticing offers (Kühlbrandt 1907, 43). E. Kühlbrandt claimed that the most of the old Ottoman carpets purchased from Transylvanian private persons by Transylvanian merchants

or by foreign peddlers came from the houses of the Hungarian nobility, as well as from them of the Greek and Romanian merchants, who unlike the Saxons accepted easily to sell them (Kühlbrandt 1907, 41). However, he mentioned also that there were people who deplored "the irreparable loss" caused by rich western collectors to the Transylvanian Saxon heritage, claiming that hundreds of carpets were sold (Kühlbrandt 1907, 41). Right the measures taken to prevent further carpet sales of from the Lutheran churches evidences that actually the Saxons also sold carpets, not only of those owned by them, but even from their churches.

Apparently, E. Kühlbrandt is the first Transylvanian researcher who mentioned various specific damages on the Oriental carpets kept in the Lutheran churches: cutting of fragments to be nailed on lectern, carpets stocked between the pews' backrests, perforations, wax drops, dust and dirt (Kühlbrandt 1927, 46). Commenting on the problems and the results of the 1914 Budapest exhibition of Anatolian carpets, he described critically the preservation procedures underwent by carpets in the Black Church. Great attention is given to their cleaning (although the author refrains from recommending the procedures, which he finds rather aggressive, particularly for white ground carpets); he also rates negatively the result of certain chemical cleaning procedures applied to some carpets from private collections which featured in the exhibition (Kühlbrandt 1914). E. Kühlbrandt, who noted already in 1911 the importance of the inscriptions for the researches on the chronology of the Oriental carpets, particularly of the Anatolian ones kept in churches from Transylvania (Kühlbrandt 1911, 527), insisted later on the necessity to document the inscriptions on the carpets donated to the churches and also of some trade marks on them before their washing, as according to his sayings it was done with those of the Black Church in Brașov, because by washing some inscriptions were lost (Kühlbrandt 1927, 51). Unlike there, only few years later (c. 1930), when he made the list of the Oriental carpets and other textiles in the Lutheran church in Rupea / Reps / Kőhalom (Bielz s. a.) in order to facilitate the selling of many of them, Julius Bielz (1884–1958) did not copy the inscriptions on the carpets, that some of them are lost, while others cannot be easily read from still existing pictures or may be hardly reconstructed from records in the church inventory.

In both Sibiu and Brașov carpets were doubled with linen cloth (Kühlbrandt 1907, 42), and the specialists pointed that future preservation

measures should include cleaning, restoration and adequate storage conditions (Kühlbrandt 1898, 103).

The presbyteries embarked on a systematic recording of carpets in their inventories (Kühlbrandt 1911, 528), thus the Oriental carpets of the Black Church in Braşov were inventoried in summer 1897 by E. Kühlbrandt, following Alois Riegl's recommendation to Parson Franz Obert on their conservation and (as mentioned above), apparently after a stealing attempt (Kühlbrandt 1927, 46). The Brukenthal Museum's old inventory records (written in German), which mention Oriental carpets, date back to the first half of the 20<sup>th</sup> c. At the time custodians made their first attempts to date and identify the areas where carpets had been produced; these were largely based on published materials, primarily the catalogue of the 1914 Budapest exhibition corroborated with the studies of Emil Schmutzler (1889–1952). E. Schmutzler studied many of the carpets held by the Brukenthal Museum, which he included in his book on Oriental carpets in Transylvania (Schmutzler 1933), an innovative work as far as Anatolian rugs which existed here in the period 1914 to 1933 are concerned (On the activity of E. Schmutzler: Schmutzler 2007). It is also quite likely that some of the information on record (date, geographical area) was provided by one of the important museum experts, namely Julius Bielz, a collector with good knowledge of Oriental carpets who lived in Sibiu and known also for his repertory of the Oriental carpets and textiles kept in the Lutheran church in Rupea / Reps / Köhalm (Bielz s. a.). In many churches from Transylvania (either of the Transylvanian Saxons or of the Szeklers) which owned or still are owning Oriental carpets records of the donated carpets or inventory lists mentioning their carpets exists even from an earlier period, since the 17<sup>th</sup>-18<sup>th</sup> c. The presbyteries also took measures against fire and theft (Kühlbrandt 1911, 525), continuing most likely an older habitude too. In 20<sup>th</sup> c. if sending carpets to exhibitions (as to the exhibition in Budapest, in 1914), they asked to be insured at high values, corresponding to their market prices, as noted for first time concerning the carpets of the Black Church in Braşov (Ziegler, Ziegler 2020, 45) and took all the needed and possible measures to protect them, as precious property, against their seizure during the Romanian occupation in 1916 or abroad, in Budapest, after the end of World War I.

Unfortunately, at the same time awareness as to the value of carpet fragments is growing, lack of scientific restoration principles leave broad room for non-professional interventions on them, as happened in Mediaş in 1901, where parish ladies examined carpets stored in the sacristy and reused fragments still in good shape by nailing them to the stalls for decorative purposes (Ionescu 2005b, 10), but later also in Braşov, where the community did not decide to collect the money for an “artistically appropriate” (*kunstgerechte*) conservation, as deplored by E. Kühlbrandt, that the gaps in carpets were filled by the local women by stitching them with coloured pieces of recent carpets, whose colour was closer to the original ones instead to use a simple single colour patch (Kühlbrandt 1927, 50). In Braşov at E. Kühlbrandt's initiative the Ottoman carpets in the Black Church were washed, stitched and prepared for hanging by the local W. Scherg & Cie. fabric factory (Ziegler, Ziegler 2020, 44; cf. Kühlbrandt 1907, 41; Kühlbrandt 1927, 50), for a permanent display which the mentioned art historian organised in 1910, at the request of the Black Church's parish, but showing them not as previously kept and recorded, but considering their typology, their condition of conservation and the aesthetic criteria (Ziegler, Ziegler 2020, 45). Also there, but much later (during 1963–1966) Albert Eichhorn, a pharmacist who taught himself carpet restoration, used to patch missing parts using fleecy woollen fabric on which the missing pattern was reconstructed with embroidery (Ziegler 2020, 17). With the extensive refurbishment of the Lutheran church in Bistriţa, which started in 1926 and intended to display permanently its whole rugs collection are likely to have been carried out at this time the first repairs on the carpets from there, such as joining together again rugs which had been cut up (Armer *et al.* 2022, 262). In Sighişoara the conservation of Ottoman carpets was done, with many shortcomings (Kertesz-Badrus 1985, 46), in 1937, also by schoolgirls lead by Dr. Josef Bacon, the pensioned physician of the city and by Marie Wellmann, a handwork teacher, as documented by a photograph (Ziegler, Ziegler 2020, 45, fig. 45; cf. Ziegler 2020, 17, fig. 7) kept in the photographic archive of Heimatsortgemeinschaft Schässburg e. V. (inv. no. Decker K 5-15-5). The use of the more or less skilled parish women's unpaid work for “restoring” (although better said “repairing”) the carpets seems to have been a widely used method, as even Bishop Friedrich Teutsch's order published in the journal of the Evangelical Church A. C. in



Romania on 8 November 1923 (*Kirchliche Blätter*, 479-480) concerning some measures for the old carpets' conservation recommends it for certain operations. Namely, this order forbade to nail the carpets on walls and on pews, but also to keep them in chests, where they can be destroyed by dust, moths and humidity, asking to put them, if possible, in glass cases and if not, to consolidate on 3 sides the borders by a finger wide band which the church's women association will sew for free on them, and to fix rings at large distances between them on the upper band for hanging. The carpets should not be hanged on a wet wall, and best not directly on the wall but over 1-2 fingers thick wooden bars fixed on the wall by nails or better by hooks, to let the air circulate under the carpet. The carpets should be hung in such a way, that visitors cannot touch them and that the dust should be carefully and periodically cleaned. The presbytery of the communities which own carpets have to report to the Superior Consistory till to end of the year how they obeyed to this demand. This order did not forbid the selling of carpets kept in Lutheran churches, as wrongly stated during 1919–1923 by Alexandru Tzigara-Samurçaş, who quoted the mentioned church journal and deplored also the selling of certain carpets exhibited in Budapest in 1914 and returned after World War I to some Lutheran parishes which owned them (Tzigara-Samurçaş 2003, 128).

When precisely this decision was taken is still unknown, despite of certain clues, some of them being already mentioned above. According to E. Kühlbrandt, in the 1870s, when many Transylvanian Saxon families still owned inherited old Oriental carpets, which they quite hardly accepted to sell, unlike the Hungarians, the Romanians and the Greeks (Kühlbrandt 1907, 41), was sold a large number of old Oriental carpets from Braşov and from the region around this city (Kühlbrandt 1911, 526), but the Transylvanian Saxon peasants asked such high prices for the carpets in their churches, that for the foreign merchants it was cheaper to import them from the Orient (Kühlbrandt 1907, 43). Thus, only few carpets were sold following presbyterial decisions (Kühlbrandt 1907, 42), that in late 19<sup>th</sup> c. apparently no carpet was taken out from the churches in Braşov and around (Kühlbrandt 1927, 46). In 1912 the presbytery of Bistriţa decided that no carpet from the church, even those belonging to the guilds, can be sold without its approval (Armer *et al.* 2022, 257). Thus, the carpets sales, if decided by the presbytery, were made without any approval of the Superior Consistory, which is not mentioned at all. Dur-

ing 1919–1923, complaining that the carpets from Transylvanian churches were not protected against sales, Al. Tzigara-Samurçaş claimed that he advised Bishop Dr. Friedrich Teutsch to issue an interdiction in 1923 (Tzigara-Samurçaş 2003, 128), although (as mentioned above) the Bishop's order published in 1923 concerns only some measures of conservation and does not forbid the sales (*Kirchliche Blätter*, 8 November 1923, 479-480). As in 1933 Emil Schmutzler, a famous Transylvanian Saxon merchant and collector of Anatolian carpets mentions the existence of such an interdiction and as in 1927 E. Kühlbrandt stated already that the Superior Consistory has forbidden the selling of carpets without its consent, considering right that the carpets from the Lutheran cathedral of Sibiu were sold during 1853–1856 (Kühlbrandt 1927, 51), it may be assumed that such a decision was issued most likely sometime during 1923–1927. Although indirectly, the existence of such an interdiction is evidenced also by the correspondence dated during January 4, 1932 – February 20, 1934 between the District Consistory from Sibiu (acting most likely on behalf of the Superior Consistory, located also in Sibiu) and the Presbytery and the Curator of the Lutheran Parish in Slimnic / Stolzenburg / Szelindek on the selling of 6 Anatolian carpets belonging to the latter right to the carpets merchant and collector Emil Schmutzler. For comparison, it should be noted that the Governing Body of the Reformed Church in Transylvania issued such a decision already in 1903, but it also did not stop completely the carpet sales from churches, restricting them in 1906 to a dire financial situation and recommending initially the selling to the Transylvanian National Museum in Cluj / Klausenburg / Kolozsvár, but keeping the possibility to buy them back (Horváth 2020, 22). Seeking actually also to prevent the export of “church carpets”, the Governing Body acted as an intermediary, aiming usually to direct the sales to a public museum (in Budapest, Cluj or Sf. Gheorghe / Sankt Georgen / Sepsiszentgyörgy), but later especially to a private one (that of Count Domokos Teleki in Gorneşti / Gernyeszeg / Kertzing), who could offer more, or at least to various collectors from Transylvania or Hungary, always at the most advantageous price for the owning parish (Horváth 2020, 22–32).

However, as not only comparisons between the still existent carpets and those known to Emil Schmutzler in 1933, but also records from the archives of the Lutheran Church in Romania, as those concerning the carpets in Hărman / Honnigberg / Szászhermány (Figs. 11–12), kept in

Sibiu at the “Friedrich Teutsch” Cultural Convention Centre of the Evangelical Church A. C. in Romania evidence, the carpets thefts did not cease, as many carpets were missing in 1967, as resulting from the inventory supervised by Mircea Neicov, a Director in the Ministry of Culture.

## 2. The museification and conservation of Oriental carpets in Sibiu before 1948.

During the second half of the 19<sup>th</sup> c. and the first half of the 20<sup>th</sup> c., when preservation of the ethnic identity of Transylvanian Saxons and the maintenance of their Lutheran communities became hot issues (following the establishment of the dualist Austro-Hungarian regime in 1867, the unification of Transylvania with the Romanian state in 1918 and their communities' harsh destiny after 1945), the parishes had to answer very demanding circumstances, which reflect the ensuing dramatic ethno-cultural changes, especially since World War II, leading to a mass emigration, that the Ottoman carpets displayed in the churches became symbols of the Transylvanian Saxons' historical past (Armer *et al.* 2020, 262-263). The economic challenges that the rural Saxon communities faced were partly caused by a sharp population drop (the result of internal migration and ensuing demographic restructuring). Despite such challenges, the awareness about the carpets' value prompted the very same communities to place them in the safe custody of the museum rather than sell them and thus, in a certain measure, the growth of museum's collection of Oriental carpets is a result of these dramatic changes.

The museum custody meant carpets could be better preserved and looked after, particularly in view of a decision taken (as mentioned above) most likely during 1923–1927 by the Lutheran Church's Superior Consistory, which had ruled against the illegal de-accessioning of church-held carpets. Apparently, this decision was sometimes disregarded by corrupt keepers or wards of fortified village churches (Schmutzler 1933, 17). The fact that carpets were placed in the museum's custody also made them more readily accessible to researchers of Transylvanian Saxon heritage and to the public at large. Legally, they are still the property of the parishes, a status indicative of the fact that the respective communities, though largely depleted numerically and economically, did not wish to part with them for good. This is not so much due to the financial value of the carpets as to their symbolical one. Such long-held value explains why carpets

originating from the Lutheran parish in Nocrich through a decision of the Lutheran Church's Superior Consistory were transferred in 1937 to the Museum, as the Superior Consistory had taken upon itself to enforce protective measures as regards the cultural heritage of the Lutheran parishes, particularly those in difficult situations. Nowadays, most Oriental carpets in the museum's collection are still held in custody, like in early 20<sup>th</sup> c.

Besides the long-term loans, the donations and the purchases made at the time when the Brukenthal Museum was administered by the Lutheran church in Sibiu (i. e. till 1948) saved many Oriental carpets from damage and alienation. The sales of carpets from Lutheran churches of the Transylvanian Saxons, including direct or indirect sales to the museum (with the *Verein für Sienbenbürgische Landeskunde* acting as an intermediary) seem to have been an exceptional measure, forced upon by the increasingly more difficult circumstances Saxon communities had to face. This situation mirrors actually that which in late 19<sup>th</sup> c. is documented in other regions of Europe as well: thus, most of the carpets and fragments of carpets from the collection of the Museum of Applied Arts in Berlin came from German churches but also from Italian ones, where they were kept since they came from Orient, centuries ago (Trautmann-Waller 2017, 5).

The Brukenthal National Museum's collection of Oriental carpets was established in 1892 and is both the consequence of the increasing interest for such artefacts in Europe and in the United States of America, which led to a trade with old Anatolian carpets purchased from individuals and from churches at last, but not at least, all the efforts made by the Superior Consistory of the Lutheran Church, by various parishes and by the Association for Transylvanian Studies (*Verein für Siebenbürgische Landeskunde*) to protect many carpets through museification (Sonoc 2013), as the Transylvanian Saxons became more and more aware about the cultural and historical importance of these valuable artifacts of Anatolian origin and during the 20<sup>th</sup> c. about their connection with their own historical past (Armer *et al.* 2020, 262-263), considering them as one of the most conspicuous symbols of their ethnic and confessional identity. Although the concerns about these precious Oriental textiles kept in Lutheran churches of Transylvanian Saxon communities with depleted population were a major reason for their museification, this would have been more difficult if exhibitions like those in Vienna (1891), Munich (1910), Buda-

pest (1914) or even in Transylvania, at Bistrița (1913) would not have increased the awareness of the intellectuals about the importance of this cultural heritage, not only for the study of Oriental decorative arts and of European paintings, but also as witnesses of the history of Transylvania. A large batch (23 old Anatolian carpets and 3 non-Anatolian kilims dated during the 19<sup>th</sup> c.), coming from the Lutheran parish A. C. in Sibiu, entered the museum's collection in 1910 and was followed, till 1916, by some items coming from rural Lutheran parishes.

The first exhibition about which is known to have shown carpets from the collection of the Brukenthal Museum (25 items) was that at the Országos Magyar Iparművészeti Múzeum in Budapest held in 1914. Its organisation relied on the collaboration of researchers such as Károly Csányi (1873–1955), Sándor Csermelyi (1881–?) and Károly Layer (1878–1937). According to old inventory registers, the carpets left Sibiu on November 18, 1913. They were insured for very high prices (if compared to the prices for which some Anatolian carpets were purchased for the museum in Transylvania, in late 19<sup>th</sup> c. or early 20<sup>th</sup> c.): 1.000 Austro-Hungarian crowns (hereinafter abbreviated as kr) for each of various 17 carpets (Kertesz-Badrus 1978, 88, 92, 104, 106, 112, 114, 116, 118, 120, 122, 126, 128, 134, 136, 142, 146 and 148), 1.500 Austro-Hungarian kr for the large Holbein carpet (Kertesz-Badrus 1978, 62) and 800 Austro-Hungarian kr for a Gördes carpet (Kertesz-Badrus 1978, 90). Some carpet fragments were also insured, for various sums: 200 Austro-Hungarian kr (Kertesz-Badrus 1978, 84), 250 Austro-Hungarian kr (Kertesz-Badrus 1978, 82), 600 Austro-Hungarian kr (Kertesz-Badrus 1978, 70) and 800 Austro-Hungarian kr (Kertesz-Badrus 1978, 50).

Considering that the various 10 kr Austro-Hungarian gold coins issued during 1905–1912 had a weight of 3.39 g mint gold with a purity of 0.900 (Cuhaj *et al.* 2015, 140), it results that 1,000 kr in 100 coins of 10 kr had a weight of 339 g mint gold or 305.1 g pure gold. The value of the Anatolian carpets sent by the Brukenthal Museum to the exhibition in Budapest can be better ascertained if considering their total insurance value expressed in gold: 21,150 kr, i. e. 7,169.85 g of mint gold or 6,452.865 g of pure gold. Considering that the various 10 kr Austro-Hungarian gold coins issued during 1905–1912 had a weight of 3.39 g mint gold with a purity of 0.900 (Cuhaj *et al.* 2015, 140), it results that 1,000 kr in 100 coins of 10 kr had a weight of 339 g mint gold or 305.1 g pure

gold. Thus, the Anatolian carpets sent by the Brukenthal Museum to the exhibition in Budapest were very valuable, especially if considering their total insurance value: 21,150 kr, i. e. 7,169.85 g of mint gold or 6,452.865 g of pure gold. On August 1, 1914, with the outbreak of World War I, the exchange of Austro-Hungarian banknotes for gold was suspended and never resumed (Rádóczy 1984, 16). It should be noted as well that in 1914 the exchange rate between the United States of America's dollar (\$) and the Austro-Hungarian crown (kr) was 1 \$ for 5.08. kr (Rádóczy 1984, 15). More relevant to estimate the purchasing power of the Austro-Hungarian currency are perhaps the prices of a few common commodities in Austria-Hungary in 1914: 1 male suit was 48 kr, 45 eggs or 1 kg rendered pork fat or 1 kg black pepper was 2 kr, 1 kg salt was 0.28 kr.; 1 kg garlic was 0.2 kr, 1 kg onion or 1 l vinegar was 0.12 kr, 1 kg rice was 0.56 kr, 1 kg butter was 1.4 kr, 1 kg raisins was 1.6 kr, 1 kg coffee beans was 4.8 kr.

These insurance values reflect actually the market value of these carpets, as already noted about in the Black Church in Brașov (Ziegler, Ziegler 2020, 45), but more likely as expensive house decorations than as collectibles, as it may be assumed from their dependence rather on the items' condition of conservation and size than on their rarity and artistic quality. Only the insurance values of the carpet fragments seem to reflect better their rarity, especially in relation to most of the carpets sent by the same museum.

Despite security and conservation risks, at the end of World War II some of the old Anatolian carpets kept in Lutheran churches of the Transylvanian Saxons were taken abroad with the parishioners fleeing with the German army, as those from Bistrița in autumn 1944, still kept at the Germanisches Nationalmuseum in Nuremberg, as a long-term loan of the Lutheran church in Bistrița (Armer *et al.* 2020, 219–220). This happened not only at the end of World War II, but later too also with such carpets privately owned by Transylvanian Saxons. However, many of them continued to be kept “for those who might return home” in the churches to which they were donated, before being transferred to other churches or brought into museums.

The carpets in the Brukenthal Museum remained less affected by unprofessional repairs and some of them are still keeping inscriptions and markings. Items badly damaged by moths, namely the Kula carpet (old inv no. 2756) from the Lutheran church in Bungard (nowadays lost, allegedly being completely destroyed by moths) and one of the two

Caucasian rugs (inv. no. AD 404 (M 2176), old inv. no. 2684), were kept in the Brukenthal library, in the so-called “moth trunk” (*Mottenkiste*), in order to avoid the contamination of the other items (although the Bishop's order published in 1923 forbade the keeping of carpets in trunks, right to prevent their destruction by moths). As till early 21<sup>st</sup> c. the latter underwent no conservation, it was in a quite poor condition of preservation and had to be washed and strengthened.

Initially, according to the old museum inventory records, the Oriental rugs purchased, donated or deposited in the Brukenthal Museum were exhibited in various spaces on the first floor of Brukenthal palace: in the “festivities” hall, the two “red salons” adjacent to it, the “Chinese study”, and the treasure room (which occupied actually the other “Chinese study”), laying apparently on the very floor. Indeed, an old photograph (but which in the current stage of research cannot be precisely dated) shows an Anatolian prayer carpet (most likely from Kula) displayed on the “festivities” hall's floor (Fig. 1), but this textile cannot be identified among the carpets in the collection of the museum. It may be either the Kula prayer carpet from Bungard (old inv. no. 2756), bought by the Association for Transylvanian Studies and donated to the museum in 1910, which according to the later museum's inventory records was completely destroyed by moths (as mentioned above), or less probably a loan from a private collector, deposited in the museum's custody, which in the actual stage of research is not documented yet.

As evidenced by some old photographs (Fig. 4–8) in the museum's collection of documentary graphics (inv. no. 26630, inv. no. 26639, inv. no. 26640, inv. no. 26643 and inv. no. 26649. Kindly provided by Dr. Delia Voinea, the documentary graphics collection's curator), during the period between the two world wars several carpets were exhibited in the same way also in the Museum for Transylvanian Saxon Ethnography (*Museum für sächsische Volkskunde*), which functioned in some rooms of the former building of the Transylvanian Carpathian Association's Museum in Sibiu (nowadays, the Museum of Natural History within the Brukenthal National Museum), to which the local collector and ethnographer Emil Sigerus donated his ethnographic collection (Șofariu 2020, 26) and whose administration was taken by the Brukenthal Museum (Csaki 1921, 53). Comparing the Oriental carpets in these old photographs with the items kept in the Brukenthal National Museum's collec-

tion, it follows that among the latter there is no carpet known from the photographs showing exhibition rooms in the former Museum of Saxon Ethnography. It is difficult to ascertain whether any of the carpets displayed there could belong to E. Sigerus, who as it is known, did not donate or sell any carpet to the Brukenthal Museum, but on the contrary sold from his collection in 1917 nine carpets to the Országos Magyar Iparművészeti Múzeum in Budapest, that the art historian Coriolan Petranu (1893–1945), the Transylvanian museums' high commissioner and the representative of Romania's government, suggested that the Sigerus collection should be included on the list of cultural goods to be reclaimed by the Romanian state from Hungary (Petranu 1925, 138), which obviously even under the conditions of the Trianon Treaty (signed on June 4, 1920) would have been an unjustified claim and thus did not happen. About the Oriental carpets documented by these photographs it may be assumed that they could have belonged even to several collectors from Sibiu, as (besides the collectors and art historians Emil Sigerus, Julius Bielz, Victor Roth and Michael Csaki) Carl Engber (1912–1982), who actually was taught and counselled by E. Sigerus and J. Bielz or Dr. Eugen Worell (1884–1961), but maybe also others (On the biography of Carl Engber: Cozma, Daneș 2004; Ordeanu 2012. On the biography of Dr. Eugen Worrell: Luca, Sonoc 2013; Antonie 2017). Their identity, in the current stage of research, may be only supposed, considering both the information about these collectors of art and antiques from Sibiu and that about some items displayed in the same rooms, known to have entered the Brukenthal Museum's collection in a later period. Thus, the carpets occurring in these photographs were donated neither to the former Museum of Saxon Ethnography, nor to the Brukenthal Museum. However, they evidence that during ca. 1919–1941 some private collectors of Oriental carpets from Sibiu, being aware about the beauty and value of such textiles, preferred to loan to the Museum of Saxon Ethnography and to keep them in its custody, allowing to be displayed there to the visitors' pleasure and intellectual benefit in a similar way as they were normally used at that time, as simple house decorations. This conclusion is confirmed by the comparison with another old photograph (Fig. 9) in the Brukenthal National Museum's collection (inv. no. 029934), whose author is unknown, rendering Karl Czekelius, the Sibiu city's economist with his wife (1908), at their diamond wedding (Ziegler, Ziegler 2020, 11, fig. 10),

having a 19<sup>th</sup> c. Caucasian carpet on the floor and on the wall behind them a carpet in apparently very good condition (Fig. 10), which imitates very well the 16<sup>th</sup> c. prayer rugs, namely either Cairene or Ottoman court ones, with Cairene influences in their border design, as the Pollak plain field niche rug from the Museum für Islamische Kunst in Berlin (inv. no. KGM 1915, 64), a carpet fragment in the Türk ve İslam Eserleri Müzesi in Istanbul and especially a carpet fragment in the Iparművészeti Múzeum Budapest, coming actually from the collection of E. Sigerus in Sibiu (Franses 2007, 163). It may be therefore most likely a late 19<sup>th</sup> c. one, produced near Istanbul, by the Imperial Factory in Hereke established in 1843 by Sultan Abdülmecid I.

Unlike these carpets from private collections from Sibiu, shortly before the outbreak of World War II many rugs from the Brukenthal Museum's collection, which may be precisely identified, served to decorate the permanent display of religious art in the ferula of the Lutheran church in Sibiu (Ittu 2003, pl. XIV), fulfilling an earlier intention, still in project form in 1921, as many exhibits needed to undergo restoration (Csaki 1921, 54; cf. Ittu 2003, 61-62; Ittu 2008, 99), about which there is few information in the actual stage of research. Indeed, according to the condition of the carpets' preservation reported by the museum's employees since late 20<sup>th</sup> c. (Haşegan 1981, 271-272) till 2018 (when the last still unrestored items were washed), on some items were evidenced some older, but skilled conservation works, although generally of small scale, excepting some items which were doubled with sack cloth, but without to be washed previously (An example: Stănculescu *et al.* 2013).

Views from this exhibition are shown on two postcards (model no. 34 and 35), published by the museum in 1934, using negatives by Emil Fischer (Figs. 2-3). The display followed scientific rules, specific for the religious art exhibitions, but only some preventive conservation requests: excepting several carpets hanged on a bar, on a dry wall, exposed both to electric and to natural light and apparently too high to facilitate a periodical checking of infestations by insects or preventive treatments against them, others continued to be displayed traditionally, which means as a tablecloth or (also less appropriately) as a pew cover. In 1948, when the Brukenthal Museum was nationalised, this room which housed its religious art department or, as officially called, "for church antiques" (*Abteilung für kirchliche Altertümer*) and is

located inside the very church was turned into a storage room and the exhibits became inaccessible to the public. The space as such was returned to the Lutheran church on April 14, 1964 through a minute. However, the minute does not mention the content of the room as it was displayed when the postcards were printed (respectively, carpets and sculptures, which can easily be identified among the Museum's present holdings). Many of the exhibits, primarily the carpets, had previously been transferred to the Brukenthal Palace, where they are to this day.

### **3. The conservation and valorisation of the Brukenthal National Museum's collection of Oriental carpets since late 20<sup>th</sup> c. till nowadays**

Between 1948 and 1989 carpets in the Brukenthal Museum collection were subject to on-going conservation and restoration efforts undertaken by the museum specialists, the results being presented in 1979 in Sibiu on the occasion of the special exhibition "Anatolian Carpets – Research and Restoration" (Kertesz-Badrus 1985, 45). Like her colleagues from other museums, the textile conservator Zoe Haşegan learned the carpets conservation techniques from Era Nussbächer (1913-2003), an employee of the Evangelical Church in Romania, who worked in Braşov during a long period (1974-1999), at very high standards (Ziegler 2020, 17) and taught herself restoration of Oriental carpets, corresponding especially with specialists from Austria and Germany. At her turn, Z. Haşegan, who is also the author of the first study on the conservation of an Anatolian carpet from the museum's collection (Haşegan 1981), transmitted her knowledge and skills of carpets' conservation to her colleagues Rodica Dinulescu and Carmen Sotelecan and they taught to the current generation of textile conservators, namely to Camelia Dordea and Simona Stănculescu. Due to its experience in conservation of Oriental carpets and to the number of the items restored in its laboratory, the Brukenthal National Museum keeps a leading place among the museums in Romania, where there are still few researches concerning the conservation of pile carpets of Oriental origin (Haşegan 1981; Haşegan 1984; Gherghinescu 2000; Stănculescu *et al.* 2006; Stănculescu *et al.* 2013), in comparison to those on conservation of traditional Romanian folk kilims (Agache 1984; Duma 1999; Firan *et al.* 1999; Aghişoiaie 2000; Prigoreanu 2000; Vătuiu 2000; Duma 2001; Firan 2001; Gropeanu 2002; Marţineac 2002; Văculişteanu 2002; Manafu 2004; Văculişteanu 2004; Beu 2010; Duma 2010; Dumitru

trana 2011; Beu 2012; Stan 2020 etc.), including those used as comparisons (Dumitrana 2014), and the works about organization of museum stores for Romanian folk rugs (Moți 2000; Olaru 2000). Exhibiting Oriental carpets in churches, but also Romanian folk rugs in houses of open air museums are both particular challenges, which the conservators of the “ASTRA” National Museum Complex in Sibiu (which before 1990 was a part of the actual Brukenthal National Museum) faced very often (Dinulescu, Teodorescu 2001–2005).

Despite this huge difference in number of published conservation researches, the interest in conservation of Oriental carpets and of Romanian folk rugs seems to have appeared and to have increased almost simultaneously, although the Romanian researchers' interest in Romanian folk rugs is older than their interest in Oriental carpets (especially in Anatolian ones) or in folk rugs from the Balkans and from the Caucasus. Not without obvious nationalistic reasons, sometimes already since the late 1960's (Diaconescu 1969; Rotaru 1978) but especially during the 1980's (Arbore 1980; Pavel 1983; Pavel 1989) and following this trend even till very recent (Ciobanu 1995–1996; Pavel 2004–2006), the abundant Romanian research used to emphasize the similarities with local ornaments present on various surviving prehistoric, ancient and early medieval artefacts which actually belong to different peoples and whose continuity till to the modern folk textiles is not accurately evidenced or even cannot be, especially considering that the Romanian folk rugs are documented much later and that even those who tried to find similar motives on other kinds of folk textiles (usually also recent ones) had to acknowledge the Oriental origin of many motives. The obvious influence of the Oriental carpets (either Iranian and Anatolian pile carpets or Anatolian kilims) on the Romanian folk kilims, noted already since the 1920's and often mentioned in the 1960's till in late 1970's, was considered in 1969 as specific only for the mid-19<sup>th</sup> c. folk rugs produced by specialised city workshops (Diaconescu 1969), but in 1977 it was either alluded as a possibility (Armășescu, Negoită 1977; Pârâu 1977) or rather obscured than clearly contradicted (Pârâu, Topoleanu 1977). Then, due to the increasing political pressure on the ethnological research, it was mentioned almost never in the 1980's and (following the thus established intellectual trend) even in the early 1990's, till very recently, when it began to be analysed more thoroughly (Cloșcă 1996; Ivanciuc 2018; Sadat Khosroshahi 2022). Besides an early attempt (Pârâu

1977) concerning the folk rugs from northern Dobruja, a region which till 1878 was directly administrated by the Ottoman authorities, the first works reflecting an interest for a thorough research of Oriental influences on Romanian folk kilims from the region of Brăila (Cloșcă 1996), a former territory of Wallachia administrated directly by the Ottoman Empire (*raya*), but the second refers to the folk rugs from Maramureș (Ivanciuc 2018), noted as well for some similarities between their motives and those on Scandinavian ones, but also for the difficulty to find similarities between them and folk rugs from Transylvania and Banat, as well as for their compositional similarities with folk rugs from northern Moldova and from the eastern Transylvanian territory inhabited by the Szeklers (Zderciuc 1963, 9–10). The third work, due to a foreign researcher (Sadat Khosroshahi 2022), analyses the even less known and thus also less exploited similarities with Iranian carpets. Although on the Balkan folk rugs, on the Caucasian ones and on the Anatolian kilims and newer carpets was published an abundant literature (especially after 1960), the Romanian researchers tried almost never since 1942 to discuss the influence of them on the Romanian folk rugs and to compare these textiles, concerning not only the motives and the composition, but also the preference for some colours and where precisely they usually occur in the items' composition, excepting some rather shy allusions to the Balkan folk rugs (Stoica, Georgescu 1972, 381; Marinescu 1975, 75 and 86; Aghițoie 2000, 729), namely to those of Chiprovtsi, Kotel and Pirot (Focșa 1970, 15), but also to those of the Aromanians settled in Dobruja (Guduvan *et al.* 1979, 16). Especially the Balkan influences (but apparently also some influences from the Caucasus) seem to be stronger on Romanian folk rugs than those of the old or new Anatolian carpets. However, they were rarely discussed or at least mentioned (Diaconescu 1969, 182 and 185; Gumă 1977, 155), unlike the Caucasian influence, which at least after 1945 was never mentioned, due most likely to a poor knowledge of the Caucasian rugs in Romania, although Mircea Dunca published many Caucasian rugs from the collection of the National Museum of Art of Romania (Dunca 1985). Besides some motives, Anatolian, Persian, Caucasian and Balkan, even Egyptian and Indian influences may be noted often also in the structure of the composition (Stoica, Postolachi 1998, 129–132). The few existing works on the traditional rugs of some national minorities from Romania, namely the Szeklers from Eastern Transylvania

(Szentimrei 1958) and the Hutsuls from Maramureş (Oțetea 1957), were published both before 1965, under more favourable political circumstances for ethnographical researchers about the culture of the national minorities than during 1965–1989, but very few is known about the corresponding textiles produced or only used by the Serbian, Bulgarian and Turkish minority in Romania, unlike about the communities of Russian fishers from Dobruja, which used rag rugs before 1920 (whose number even increased in the 1940's) and only after 1920 colourful woollen rugs with geometric motives, which they did not produce, but used to buy from the local Romanians and Bulgarians (Fleşeru 1979–1983, 318). Good knowledge about the local folk kilims and about foreign influences on them are important for the evidence of the cultural heritage, as the information about the provenance and about certain technological and artistic details of each newly acquired item has to be correctly recorded, in order to be useful both for researchers and for conservators, facilitating thus its appropriate valorisation in scientific works and exhibitions.

For the conservators from Romania the information about traditional dyeing, gathered either by ethnographic researchers or by chemical analyses and from technological experiments based on them (Niță Ibriian 1993) is very important, both if considering the old Anatolian carpets (Gherghinescu 2000) and the native folk textiles (particularly the rugs), on which their main interest was focused (Costinaş 1997; Costinaş 1998; Diaconescu 2000; Giuşcă, Ilişiu 2000; Romaşcu 2000; Sidoriuc 2000; Pascu 2001; Horvat 2010; Duma 2014; Crețu, Petrovicu 2015; Botez 2019; Codrea, Paşca 2021). Concerning the folk textiles production, there is also some research on 20<sup>th</sup> c. industrial dyeing in Banat using indigo (Vid 1977) and on synthetic colorants used in conservation (Macri 1982). S. H. Cascanian and I. Zaharia published in 1965 some recipes with chemical dyes used at that time by the Romanian industrial and artisanal producers of pile carpets (Cascanian, Zaharia 1965, 145–155), namely imitations of Oriental ones, but which apparently were used by the producers of folk rugs too, even 24 years later (Pavel 1989, 73; cf. Cascanian, Zaharia 1965, 112). In this context should be noted also some studies on specific damages caused by the wool dyeing technology (Gărău 2001), on some substances used in the textile industry and by the conservators (Voju 1999–2000) and on the toxicity of natural colorants (Hurghişiu *et al.* 1990). In the actual stage of research on natural colorants used on old and new Anatolian car-

pets and on early 19<sup>th</sup> c. – mid-20<sup>th</sup> c. Caucasian, Balkan and Romanian folk rugs comparative studies based both on chemical analyses and on the available information recorded by ethnographers would reveal also dyeing technique similarities, due to the vegetation's regional specificity and to a more or less access to exotic colorants before late 19<sup>th</sup> c., when on Moldovan carpets the use of chemical colorants, introduced in the Vrancea region by pedlars coming from Oltenia, locally derogatively called *coropcari* (Arbore 1980, 421), was noted right after the use of vegetal colorants reached already a high refinement during the second half of the 19<sup>th</sup> c. (Pavel 1983, 564). The abundant but less systematised ethnographic literature accumulated already since late 19<sup>th</sup> c. about the natural colorants used in Romanian folk textiles (particularly in rugs) is a good prerequisite for such an endeavour.

As during the second half of the 20<sup>th</sup> c. the Brukenthal Museum had also a large collection of traditional Romanian folk kilims (which since 1990 belongs to the “ASTRA” National Museum Complex in Sibiu), its conservators are acquainted as well with specific problems of this category of rugs, although they did not produced yet studies reflecting their rich experience in this field: throughout time, the museum's conservators participated in the conservation of a number of Anatolian carpets held by the Evangelical Church A. C. in Romania, as well as of 56 Oriental carpets and 17 Romanian folk rugs from the George Oprescu collection of the Romanian Academy, but worked also on the Oriental carpets and Romanian folk rugs of some local private collectors and even of some foreign ones. They and the curators who researched the museum's collection of Oriental carpets had professional discussions with researchers of Oriental carpets and conservators from Austria, Australia, Azerbaijan, Canada, Germany, Hungary, Italy, Poland, Switzerland, Turkey and the United States of America, during visits in Sibiu or on the occasion of other events. Papers concerning the conservation and restoration of the museum's Anatolian carpets were presented at various specialist events in Romania and in international projects, including the *Multilateral Training for Museum Professionals* (MUSE-TRAIN), funded through the Civil Society Facility: EU-Turkey Intercultural Dialogue – Museums Grand Scheme (ICD-MUSE), held in Sibiu, May 21–25, 2012. On this occasion, besides seeing the carpets exhibited in the museum, the Austrian and Turkish curators and researchers visited the museum's Laboratory for Conservation of Textiles (Fig. 17) and dis-



cussed with curators and conservators, but also visited the Lutheran church in Mediaş, where several Anatolian carpets are kept. A special contribution to the study of the museum's collection of Oriental carpets, which stimulated also conservation and valorisation efforts, is that of collection curator Andrei Kertesz and of the independent carpet scholar Stefano Ionescu (from Rome). Andrei Kertesz (1948–2009) published the first catalogue of Anatolian carpets of the museum's collection (Kertesz-Badrus 1978) and collecting much historical information about how the Anatolian carpets arrived in Romania, particularly in Transylvania and about their role in the Transylvanian society (especially among the Saxons), he published later in German a book (Kertesz-Badrus 1985) which increased the scientific interest for these Oriental textiles which survived in such a large number in Transylvanian churches till in late 19<sup>th</sup> c. – early 20<sup>th</sup> c., when many of them were museified and others were sold as antiques or even stolen. Stefano Ionescu promoted the Brukenthal National Museum's collection by organising (since 2004, yearly) guided tours for carpet collectors, connoisseurs and scholars, by establishing relationships with carpets researchers and restorers abroad (Figs. 14–18), as well as by various works he published and also facilitated the organisation of exhibitions in Rome, Berlin and Istanbul and later in Gdańsk (Figs. 19–23). The conservator Rodica Dinulescu facilitated contacts between the museum's conservators and their American colleagues, as well as between Andrei Kertesz and American researchers of Oriental carpets.

Only once before 1989 carpets from the museum's collection were included in an international exhibition, namely that organised in Montreal, Canada, during the Summer Olympics of 1976, in which 3 of them took part. Although on this occasion the museum sent for first time abroad carpets from its collection (as in 1914, when in Budapest was organised a great exhibition of Anatolian carpets, Sibiu was still a city in Austria-Hungary), the information existing about is rather confusing. Referring to these 3 carpets exhibited for first time abroad, A. Kertesz, who was the museum's commissioner on this occasion, mentioned wrongly "the international exhibition of carpets in Montreux" of 1976 (Kertesz-Badrus 1978, 104, 114 and 142), stated later, also wrongly, that this exhibition would have been organised in Montreux in 1978 (Kertesz-Badrus 1985, 45) and finally even in 1979, referring paradoxically to "Montreux (Canada)" (Kertesz 1991, 148). Besides other 7 Anatoli-

an rugs from different Lutheran churches from Transylvania, 7 such carpets from the museum's collections were shown in 1991 in another important exhibition, "800 Years Church of the Germans in Transylvania", which was organized in Sibiu, but enjoyed much appreciation also abroad, as its catalogue was published in Austria (Nägler 1991. For the exhibited carpets: Kertesz 1991). In the coming years several carpets from the Brukenthal National Museum's collection participated in grand exhibition projects (Figs. 19–23) at Accademia di Romania, in Rome (April 4 – May 4, 2005; 12 rugs), at the Pergamonmuseum in Berlin (October 28, 2006 – January 7, 2007; 9 rugs), at the Sakıp Sabancı Müzesi in Istanbul (April 19 – August 19, 2007; 11 rugs) and at the Muzeum Narodowe in Gdańsk (November 16, 2013 – February 16, 2014; 26 rugs), being curated by Stefano Ionescu, in co-operation with various specialists employed at the Brukenthal National Museum (Andrei Kertesz, Rodica Dinulescu, Iulia Mesea, Alexandru Gh. Sonoc and Adrian Luca). To the exhibition in Gdańsk the museum sent the largest number of carpets from its collection, surpassing even its participation to the great exhibition organised in Budapest, in 1914, where (as mentioned above) 25 rugs were sent. Some of the international exhibitions mentioned above were organised as well in co-operation with the Superior Consistory of the Evangelical Church A. C. in Romania and besides carpets from the museum's collection included also some brought from Lutheran churches in Transylvania. Together with the Superior Consistory were organised as well two exhibitions of Anatolian carpets in Sibiu, at first in 2005 and then in 2007, when the city was European Capital of Culture, but also in order to celebrate Romania's membership in the European Union. The latter, "Old Turkish Carpets in Transylvanian Collections", started in March and was partially simultaneous with the aforementioned exhibition in Istanbul. In the Brukenthal Palace a room devoted only and permanently to an exhibition of Anatolian carpets was opened on April 2, 2009 and it kept its function till nowadays. At the same time, close to this exhibition room (Fig. 13) and communicating with it, was organised a new storage room for the museum's collection of Oriental carpets (Luca 2021, 495), facilitating thus the periodical change of the 8 items which can be simultaneously exhibited, their transportation and handling for preventive conservation purposes, but also their study by specialists in appropriate conditions, right in the storage room.



The participation of such valuable Oriental textiles from the oldest Transylvanian public museum in exhibitions (and particularly in international ones) brought them to the attention of wider audiences and foreign researchers. Following this, the exchange of information allowed to date more accurately the carpets, leading to new hypotheses on the production centres where they originate and to a new typological classification of them. The research undertaken over several decades by Stefano Ionescu contributed to a revision of the dates proposed in late 19<sup>th</sup> c. and in the first half of the 20<sup>th</sup> c., when the database of Oriental carpets depicted in paintings was much smaller, when depictions of carpets in Oriental miniatures and the evolution of the carpets' ornaments were very little known, and when there were few comparisons between the motifs on the carpets and those on other pieces of Oriental and European decorative art and when many of these visual sources of information were themselves rather loosely dated and there had not yet been made sufficient attempts to correlate the dates of the carpets with the chronological information derived from the study of inscriptions on carpets donated to churches and from archival documents from Europe and from the Ottoman Empire. One finding that emerges from analysis of these new dates is that they are closer to those in the catalogue of the exhibition organised in 1914 in Budapest exhibition (Csányi *et al.* 1914), which unfortunately was little used by American, British and even later German researchers, who did not know the Hungarian language. Extremely important are also his efforts to preserve the most significant Anatolian carpets which are permanently exhibited in the Evangelical churches in Transylvania by their museification and by replacing them with accurate replicas, executed in Anatolia, a project initiated by himself and supported by researchers, collectors and lovers of Oriental carpets from various countries (Figs. 24–25). Another

project of him is to support the return of Oriental carpets from private collectors to public museums, either from countries wherefrom these artifacts originate or which keep significant collections of them, as the Brukenthal National Museum in Sibiu, which got in 2013 a Mucur rug (inv. no. AD 605) from the former collection of Grover Schiltz, a solo English horn / oboe player in the Chicago symphony orchestra for almost 30 years and member and officer of the Chicago Oriental Rug and Textile Society, which was donated through Stefano Ionescu by Beverly Ruth Schiltz, the latter's widow. In his research on Anatolian carpets, Stefano Ionescu relied a lot, in addition to a rigorous individual study and a critical examination of his results, confronted with those of other researchers, on a dialogue conducted not only with specialized researchers, but also with other connoisseurs (as collectors and traders), from whom this method was actually taken in late 18<sup>th</sup> c., when it began to be widely used in the research of various categories of artifacts. More recently, as a result of the technological development, the use of more diversified sources of information (oral, written and visual ones), coming from a wider geographical area, the interdisciplinary approach, the criticism of research methods, the modern means of investigation, processing and management of information, communication and verification of research results, stimulated a different kind of research than the traditional ones, related to the typology, chronology, provenance and ethnocultural attribution of some carpets or to the elucidation of some technological aspects: those which are focusing on the question of certain categories of Oriental carpets' cultural significance in Oriental and European societies, as they are resulting from the study of their depictions in Oriental miniatures and in European easel and even mural paintings (Sonoc 2021; Sonoc 2022; Sonoc 2023).

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1. Oriental carpet exhibited on the floor of the “festivities hall” in the Brukenthal Palace. Private collection.
2. Aspect from the ecclesiastical art exhibition in the ferula of the Evangelical Church in Sibiu. Photograph by Emil Fischer (1934). Brukenthal National Museum, Sibiu.



3.



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3. Aspect from the ecclesiastical art exhibition in the ferula of the Evangelical Church in Sibiu. Photograph by Emil Fischer (1934). Brukenthal National Museum, Sibiu.
4. Exhibition aspect in the former Museum of Transylvanian Saxon Ethnography (c. 1919-1941) in Sibiu. Unknown photographer. Brukenthal National Museum, Sibiu.



5. Exhibition aspect in the former Museum of Transylvanian Saxon Ethnography (c. 1919-1941) in Sibiu. Unknown photographer. Brukenthal National Museum, Sibiu.



Some Remarks on the Conservation and Valorisation of oriental carpets in Transylvania since late 19<sup>th</sup> c., with Special Regards on the Brukenthal National Museum's Contribution



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6. Exhibition aspect in the former Museum of Transylvanian Saxon Ethnography (c. 1919-1941) in Sibiu. Unknown photographer. Brukenthal National Museum, Sibiu.
7. Exhibition aspect in the former Museum of Transylvanian Saxon Ethnography (c. 1919-1941) in Sibiu. Unknown photographer. Brukenthal National Museum, Sibiu.



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8. Exhibition aspect in the former Museum of Transylvanian Saxon Ethnography (c. 1919-1941) in Sibiu. Unknown photographer. Brukenthal National Museum, Sibiu.
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12. Judicial reconstruction with the authors of the 1930 carpets theft from the Lutheran church in Hărman. Photograph by Adler Oscar, Braşov. Parish archives in the “Friedrich Teutsch” Cultural Convention Centre of the Evangelical Church A. C. in Romania, Sibiu.
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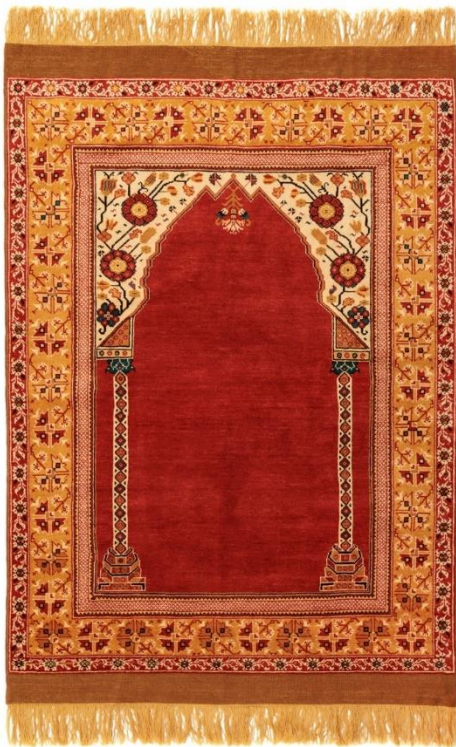


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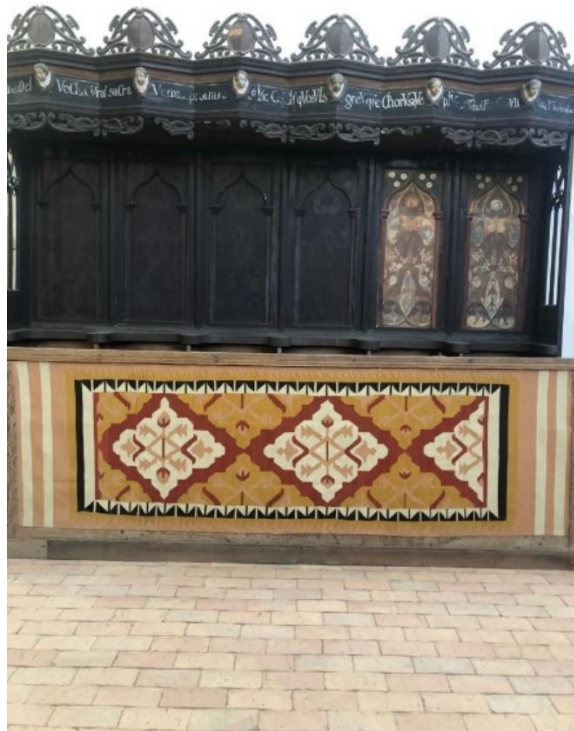


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## SOME PROBLEMS OF ORIENTAL CARPET'S CONSERVATION FACED BY THE BRUKENTHAL NATIONAL MUSEUM'S SPECIALISTS AND SOLUTIONS USED BY THEM

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**Abstract:** Restoring many Oriental carpets of various origins and provenances since the Brukenthal National Museum's Laboratory for Conservation was established as a regional laboratory in 1975, the textile conservators working there faced various degradations, including those caused by old non-professional interventions, which may be considered rather repairs. They acquired a vast experience, both in wet cleaning and in proper restoration, from doubling till to remake of knots. Besides the wet cleaning nowadays made in an improvised pool (instead of the previous fixed metallic tubes which needed so much space), as important innovations applied during the last two decades should be mentioned the use of Regnal (Mowital B) dissolved in ethyl (which allows to preserve the inscriptions, as sources of very important historical information, formerly often lost during the wash of carpets), respectively of soapberries (*Sapindus mukorossi*) as a natural detergent, less aggressive as the chemical ones, not only for the textiles, but also for the employees and the environment.

**Keywords:** restoration of carpets, degradations, improvised pool, Regnal (Mowital B), *Sapindus mukorossi*

**Rezumat:** Restaurând numeroase covoare orientale de diferite origini și proveniențe de când Laboratorul de Conservare-Restaurare al Muzeului Național Brukenthal a fost înființat ca laborator regional în 1975, restauratorii de textile care lucrează aici s-au confruntat cu diferite degradări, inclusive cele pricinuite de intervențiile neprofesioniste, care pot fi considerate mai curând reparații. Ei au dobândit o vastă experiență, atât în curățarea umedă, cât și în restaurarea propriu-zisă, de la dublare până la refacerea nodurilor. Pe lângă curățarea umedă, care în prezent se desfășoară într-un bazin improvizat (în locul căzilor metalice fixe folosite anterior, ce necesitau atât de mult spațiu), ca inovații importante aplicate în decursul ultimelor două decenii ar trebui menționate folosirea de Regnal (Mowital B) dizolvat în etil (care permite păstrarea inscripțiilor, ca surse foarte importante de informații istorice, în trecut adeseori pierdute în cursul spălării covoarelor), respectiv a nucilor de săpun (*Sapindus mukorossi*) ca detergent natural, mai puțin agresiv decât cei chimici, nu numai față de textile, ci și față de angajați și de mediul înconjurător.

**Cuvinte-cheie:** restaurarea covoarelor, degradări, bazin improvizat, Regnal (Mowital B), *Sapindus mukorossi*

Restoring many Oriental carpets of various origins and provenances (from the Brukenthal National Museum's collection or belonging to other cultural institutions, to churches or to private persons) since the Brukenthal National Museum's Laboratory for Conservation was established as a regional laboratory in 1975, the textile conservators working there faced various degradations documented both by their photographic archive and by their work records. These degradations may be classified in 3 large categories: physical-mechanical

degradations, physical-chemical degradations and biological degradations. Based on a careful ascertainment of the degradations, the conservation works proposed by them had to consider also that the used materials and treatments should not furtherly damage the cultural item, by increasing the already existent degradations.

The most frequent **types of degradations** occurring on the restored Oriental carpets were:

– deposits of dust and dirt (Fig. 1): they have to be removed with brushes and using the vacuum

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cleaner, its suction power being adjusted according to the degree of the items' embrittlement

– stains of various origin (Fig. 1): the wax stains have to be cleaned at first mechanically, removing thus the adherent layer, then under filter paper all wax residues are removed by ironing (Petrariu 2000, 123); dirt stains, soot and other stains which exist on the surface of the threads are dissolved in most cases through wet cleaning

– degradations caused by a biological attack (Figs. 2, 6, 9, 12 and 16): the attack of cloth moths (*Tineola biseliella*) or fur moths (*Tinea pellionella*) causes loss of pile (sometimes looking as deep abrasions) and even losses of warp and weft threads (Figs. 2 and 6); the rodents' attack, which can be recognised due to the specific nibbles (Figs. 11 and 16), leads to larger losses of material (Figs. 6, 9, 12 and 16)

– deformations caused by the knotting or weaving technique, by the display of the carpet or by repairs made over time (Fig. 3)

– ravelling and cuts (Figs. 4 and 5), the cuts occurring mostly in relation with the reuse of the carpet fragments for various purposes, including to be sewn together, in order to make a "patches rug" or, less often, a tablecloth

– total or partial loss of pile due to cloth or fur moths' attacks (Fig. 6) and to functional wear and tear (Fig. 8)

– discolorations caused by an inappropriate display, but also well-defined discolorations of the areas which undergone restorative interventions (Fig. 7)

– various degradations due to old repairs (Figs. 9 and 10), especially the doubling with very thick cloths or patches (generally of hemp sack cloth), which are more hydrophilic than the carpets to which they were added and which often were dyed with instable colours (leading to folds, abrasions and aureole-shaped water stains, sometimes also to fungi attacks in the contact areas), respectively due to the use of improper threads for sewing on the carpets the doubling cloths or patches (which led to further ravelling and tears, even to the loss of more fragile parts), that the cloths and patches used in old repairs had to be removed before the wash (Haşegan 1981, 371)

### 1. The wash of carpets

Very often, a crucial phase in the restoration process is **the wash of the carpets**, which has to be carried out safely and professionally, with appro-

priate tools and substances, in order to avoid to harm the carpets, the conservators themselves and the environment. If possible, dirty carpets should not be stored together with washed and restored ones. Especially the newly purchased items should be washed, right after their examination and after the biological attacks were removed. As a measure of preventive conservation, the wash of Oriental carpets coming from Lutheran churches is documented already during the first half of the 20<sup>th</sup> c. Thus, already in early 20<sup>th</sup> c., at Ernst Kühlbrandt's initiative, the Ottoman carpets in the Black Church in Braşov were washed, stitched and prepared for hanging by the local W. Scherg & Cie. fabric factory (Ziegler, Ziegler 2020, 44; cf. Kühlbrandt 1907, 41; Kühlbrandt 1927, 50), for a permanent display which the mentioned Transylvanian Saxon art historian organised in 1910, at the request of the Black Church's parish. Although later the most opinions were against the wash of carpets, because it was believed that this could damage the fibres, already in 1981 the Brukenthal National Museum's specialists recommended and practiced the wash of carpets, not only for aesthetic reasons (to make more visible the carpets' designs and colours, but also because hard crusts of dirt on the backside of the carpet stiffen it and will cause tears, while the hard grains of dust destroy the threads, and this damage gets worse if the carpets are rolled during the transport (Haşegan 1981, 372). Nowadays, all carpets in the museum's collection are washed, the last ones (which are older collection items, but of less importance or new purchases) being washed during 2018, only after a preventive cryogenic treatment against biological attacks kindly done at the laboratory of the "ASTRA" National Museum Complex in Sibiu. Although relatively recently some specialists from the Germanisches National Museum in Nuremberg (Armer *et al.* 2022, 220–222) deplored the wash of carpets from the Lutheran church in Bistriţa / Bistritz / Beszterce (currently kept at the mentioned museum in Nuremberg), as according to their opinion the wet cleaning is "an irreversible operation that involves risks, especially for badly aged fibers" (Armer *et al.* 2022, 220–221, n. 5), the wash of carpets, done in a professional way, as less invasive as possible, is necessary and remains an important measure of preventive conservation right for the reasons mentioned above and, at least but not last, because dirty wool textiles are known to attract biological attacks, especially of moths, particularly if the carpets were not preserved in museums, where they could be professionally cared for, but in churches.

If they exist, the various inscriptions, as the donor inscriptions, which are important not only to know how a carpet arrived in a church as donation, but especially to ascertain the date of such an item (Kühlbrandt 1911, 527), need a particular attention, to avoid their loss during the wash, so much deplored by the art historians already during the first half of the 20<sup>th</sup> c. (Kühlbrandt 1927, 51). As those written in ink are the most sensitive and perishable ones (if compared with those in paint), before washing the carpet they had to be photographed or at least copied, as faithful as possible from a palaeographic point of view.

Before the wash, if there are gaps, on the backside of such areas should be sewn patches of cotton cloth (gauze) and the borders of the gaps should be sewn by overcasting (Fig. 12), i. e. with long slanting widely spaced stitches, to prevent ravelling (Haşegan 1981, 374). To avoid the ravelling of the fringes, the carpets border has also to be sewn on a piece of gauze (Fig. 16), in the same way (Haşegan 1981, 374). If the carpet (and especially the carpet fragment) is very fragile, to avoid mechanical stress, the item has to be fixed between two terylene nets (Haşegan 1981, 375). Before the wash, if a carpet consists of several fragments sewn together (Fig. 5), in order to document their shape and relative position a sketch has to be made (Haşegan 1981, 374), or better a photograph.

**To preserve the inscriptions during the wet clean** of a carpet (Fig. 13), the museum's laboratory uses a 2.8 % solution of Regnal (in ethyl), applied by brushing both on the frontside and on the backside of the carpet. This solution creates a film which does not allow water to penetrate inside the fibre. Regnal is a vinyl polybutyrate produced in the Czech Republic, which due to its adhesive properties is used in various concentrations to fix dyes and water-soluble inks or as an adhesive on paper support. The same product of the German company Hoechst is called Mowital B.

The Regnal looks as white grains or as white powder, insoluble in water, but soluble in alcohols, in ethyl, butyl or amyl acetate, in chloroform or in toluene. Most often it is used in ethyl solutions of various concentrations. In conservation of cultural items this product was used initially for paper supports, dissolved in ethyl solutions, as proposed by the Hungarian conservator Beatrix Kastaly. Thus, the 1–2% Regnal solutions applied by brushing or spraying are used to impregnate weakened mouldy paper, before the wet cleaning. On the paper's surface it is fixed only pointwise, allowing the

penetration of cleaning and bleaching agents, but parallel to the consolidation, it is recommended to disinfect the support, adding thymol. The 5 % Regnal solutions are used to fix dyes or water-soluble inks and the 8–10 % Regnal solutions as adhesive. In ethyl solutions with a concentration of 5 % Regnal or more, this substance tends to form a glossy film, which has a good mechanical resistance, remarkable elasticity (which can be improved with plasticizers), a good resistance to light, acids, bases and peroxides and does not allow the penetration of oils and fats. This dry film melts at 90–100 °C and adheres well also on smooth surfaces. It can be ironed too. In rooms where the relative humidity is more than 50 %, the Regnal should not be applied, because due to the air humidity it will produce a white precipitate.

**The detergent used for wet cleaning** since almost one decade by the museum's textile conservators, both for Oriental carpets and for many other textile materials, is a relatively recent entry on the Romanian market, which even currently can be purchased only from herbalists' and healthy food shops or from Indian shops. Maybe for this reason still few Romanian textile conservators are using it, despite its convenient costs and its other many advantages. It is got from soapberries (Fig. 14), namely the fruits of the soapberry tree (*Sapindus mukorossi*) or ritha, which grows in an unpolluted area of the state of Himachal Pradesh in India, located at the foot of the Himalayas, at altitudes of up to 1,200 m, but occurs at well in other regions of India (as Karnataka, Maharashtra and Goa), as well as in southern mainland and insular China. The inhabitants of India and Nepal have been using these fruits since ancient times, both for personal hygiene (as cleanser of hair, skin and clothing) and as a natural remedy, due to their hepatoprotective, emetic, anti-inflammatory, anti-protozoal, spermicidal and contraceptive properties (Upadhyay, Singh 2012). The shell of this nut contains triterpenoidal saponin of oleanane, dammarane and tirucullane type, which besides its various traditional insecticide uses, like for removing the head lice off the scalp, is also a natural detergent, 100% vegetable and chemically non-contaminating. Using it, the negative consequences caused by the use of chemical detergents on both old and fragile textiles and the environment are avoided. Due to these qualities, the soapberries can be used as a decoction having a pH between 5–6 to wash delicate wool and silk fabrics. For the wet cleaning of Oriental carpets is used a soapberries decoction with a concentration of 4% (On the use

of soapberry in wet cleaning of various kinds of historical textiles by Romanian conservators, see Stănculescu, Dordea 2014; Marangic, Huică 2021). This natural detergent replaced the previously used 5 % solution of Romopal O. F. 10, a neutral non-ionic detergent produced by a Romanian detergent factory from Timișoara (which ceased its production already in the 1990's) and was used at a lower temperature, of 20–25° C in a bath having a pH of less than 10 (Hașegan 1981, 375). Thus, another advantage of using the soapberries is a lower pH, even lower than that of 6.7 measured on the wet cleaned item after the end of its wash with Romopal O. F. 10 (Hașegan 1981, 375). It does not alter the colours, does not destroy the textiles and does not cause skin allergies. Therefore, the saponin from the soapberries is surely less aggressive both for the textile fibres and for the humans coming in contact with them than many of the chemical detergents. More than that, it can also help to protect the environment in a world that has become dependent on fossil fuels while facing soil and groundwater pollution, as foreign researches discovered that extracts from the fruit may be used in an enhanced oil recovery technique, as an organic surfactant to increase the mobility of oil from the fields (Chhetri *et al.* 2009) and the potential for the soapberry to be used as a natural surfactant for washing arsenic from low and high-contaminated soils which are rich in iron (Mukhopadhyay *et al.* 2013). Both by using the soapberries since so long time, already on 2011 (also in a 4 % concentration, to clean an Aubusson type furniture tapestry) and by publishing their results in 2014, thus already 7 years before other conservators from Romania shared their own good results in using a 10 % *Sapindus mukorossi* extract diluted with demineralized water in a proportion of 1/5 on a liturgical textile (namely, an antimiss from the Orthodox church in Vadu Oii, Constanța county) as an alternative to the soapweed (*Saponaria officinalis*), the textile conservators working in the Brukenthal National Museum were pioneers in promoting this innovative natural detergent in Romania.

Nowadays, **the wet cleaning** of carpets is carried out **in an improvised pool** built to the size of the carpet, so that the latter lays in it without to be bent or to form wrinkles. Considering both this need, as well as the lack of space in the museum's Laboratory for Conservation of Textiles, a permanent walled pool or even the previously used fixed metallic tube are less useful, more appropriate being to construct a temporary one, only when needed.

This pool can be built with low costs, from 4 fir tree boards, of different sizes, which can be joined so that different pool sizes may result. For this, the boards are placed on a wider and longer wooden plate or, if it is thicker, even leaning on it. The wooden plate may rest either on a work table (Fig. 16), if washing carpet fragments or even carpets of small and medium size or even directly on the laboratory's floor (Figs. 14, 15 and 29), if the carpet is larger than the work tables. Both the wooden plate and the boards are covered with a plastic sheet (Figs. 14–16). In a corner, the pool may have a drain system (the simplest consisting of a funnel and a hose connected to the latter, respectively discharging in a bucket or directly into the sewer at the other end. Depending on their degree of soiling, the wash of Oriental carpets requires 2–3 baths with tap water from the municipal pipes heated at a temperature of 25–27° C and 1–2 rinsing baths with distilled water at the same temperature, to avoid deformations of the wool threads. In the rinsing bath may be added a 1 % acetic acid, to revive the colours and for disinfection, and if a fungi attack was noted also a 0.01 % solution of thymol (Hașegan 1981, 375). After the final rinse, in order to release water as much as possible before draining, the carpet is pressed with a rubber roller (Fig. 15).

After c. 30 minutes of draining in the improvised pool, on inclined plane (a wooden plate leaning on the edges of the boards of which the pool was built) with the pile up, drying is done for several days, at constant temperature (to avoid sudden shrinks), the carpet laying horizontally on a work table, under sheets of filter paper, pressed with marble plates, the pile being brushed in the direction which it got since the carpet was produced. During the final phases of drying, the marble plates may be put directly on the carpets (Fig. 17).

**The tools used for washing carpets** were for long time only the common ones: soft bristles brushes made of animal hair. During the exchange of experience on wet cleaning of Oriental carpets held in early 2012 in the museum's Laboratory for Conservation of Textiles (Fig. 29), Eva and Peter Hoffmeister, two specialists from Germany, shared their method of cleaning with a tool created by Mr. Hoffmeister, who, after a several decades long practice came to the conclusion that even from old Oriental carpets the dirt can be easily removed by pressing with the roller, without to affect the textile fibre. The tool consists of a wooden handle attached to a rubber roller used for industrial conveyor belts (Figs. 8 and 16), which is longer than

the usual roller used by wall painters or in printing workshops, but not much heavier than them, that its use for the purpose of wet carpet cleaning is both efficient and ergonomic (For more details, see Stănculescu *et al.* 2013).

## 2. The proper restoration of the carpets

The proper restoration of the carpets (Fig. 18) is carried out using various methods, depending on the degree of degradation and also considering the whole item's aesthetic appearance after restoration.

The main method and the most often used one (Haşegan 1984, 68 and 71, figs. 4–5) is to double the lacunar areas with a thicker material made of linen or mixed with cotton which is dyed with direct dyes of the Gallus type, in order to restore its integrity and original shape (Figs. 18–20). Sometimes, if the carpet is very fragile and there are many gaps, it is necessary to double the carpet on the whole surface of its backside (Fig. 19). However, if the entire surface needs to be doubled, the doubling cloth is sewn only on three less degraded sides of the carpets, that one of the edges usually it remains free for contraction and to allow to check periodically the carpet's backside (Haşegan 1984, 68 and 71). The doubling cloth is dyed in the carpet's predominant colour (Figs. 19–20 and 24–25) or in the colour corresponding to that of the area to be doubled (Fig. 21). The fastening of the warp and weft threads to the support is done with thin cotton thread, the fastening being carried out by bridging thread-by-thread (Fig. 22).

As Zoe Haşegan, a former textile conservator at the Brukenthal National Museum, noted almost 40 years ago (Haşegan 1984, 71), to restore Oriental carpets by remaking the knots is a painstaking operation that requires a lot of skill, sense of colour and, especially, time. In terms of quality and thickness, the used fibres must be as close as possible to the original ones, in order to avoid unsightly differences and mechanical stress (if remaking the warp and the weft), although to keep a not disturbing difference between the original work and that of the restorer. Dyeing the threads is more difficult than dyeing the doubling cloth, because between the thread's length (as it may be seen in skein) and its section (which after cutting the knots is, in fact, the apparent one) there are differences of shade. Antiquing the new thread to fit the original area is also a difficult operation, because the yarns in the old carpets were dyed mostly with vegetable dyes which give them shine through their still kept freshness. Nowadays to dye the fibres necessary to restore the carpets are used

mainly synthetic dyes of superior quality, the possibility to use vegetable dyes for the wool used to restore textiles being still very limited, primarily because the most plant extracts cannot be preserved over longer time and used right when they are needed. The Brukenthal National Museum does not have the investigation facilities which are necessary to determine the nature of the used dye (respectively from which species of plant it was extracted) and the fixative used for dyeing. As a result, some shades have to be experimented using easily available dyes, made mostly from local plants (which may be from other species than those commonly used in Orient), and even over time the wool dyed in this way will discolour a little, there will certainly not be too much difference. As even its author mentioned, a list of dyes generally used for textile fibres, but supposed to be used as well for those in Oriental carpets (Gherghinescu 2000, 275–276) is actually extracted from literature mentions, not the result of chemical analyses on samples of fibres taken from old Oriental carpets. In the current stage of research in Romania such investigations as the investigations on an Anatolian carpet coming from the Lutheran church in Bistrița, kept nowadays at the Germanisches Nationalmuseum in Nuremberg (Armer *et al.* 2022, 234–244) are still few. Currently, in the Brukenthal National Museum's laboratory are possible only some investigations on the animal or plant species from which a textile fibre comes. Worldwide, according to rather optimistic remarks (Armer *et al.* 2022, 266), researches aiming to reveal mobility dynamics resulting from the trade in wool and dyes, as well as exchange between individual workshops, based on physical and chemical analyses, are still in infancy. It is hard to believe that this could be a reason not to wash and not to restore old Oriental carpets.

Not only due to the difficulties to dye the needed quantity of fibers in the right shades, but also to the uncertainty about the details of a largely lost motif and to the difficulty of such a time-consuming and highly skilled work, the remaking of the knots is done only when there are relatively small areas of material losses and most frequently on needle-inserted new warp and weft threads, sometimes even on the original warp threads, if they still exist (Haşegan 1984, 68, figs. 1–3). Before restoring the knots, the degraded original knots must be removed all around the gap, either on the same line or in "stairs" consisting of at least two knots (because "stairs" consisting of only one knot have no stability), till an area with healthy knots is reached

(Haşegan 1984, 71, fig. 8). The drawing of the motifs, which has to be reconstructed on graph paper according to a similar motif preserved on the surface of the same carpet (Haşegan 1984, 74; Stănculescu *et al.* 2006, 173), will be used as a reference model in the reconstruction of the carpet's corresponding degraded area. To restore the Gördes type knot, which is a double knot, the original working technique is observed, after the two weft threads, the thread which has to form the knot is inserted with the needle, being wrapped over two warp threads, and the ends of the inserted thread are pulled out between the two warp threads (Figs. 22–23). The knots are made with a special L-shaped needle or a straight needle with a round tip, and with a straight pointed needle, which is used at the place of connection with the pile of the carpet (Haşegan 1984, 74, fig. 10). The remaking of the knots is started in the same way as the carpet's weaving began, that the pile keeps its direction (Haşegan 1984, 74, fig. 11). Then the threads are cut to achieve the desired thickness of the pile (Haşegan 1984, 74). If the pile is strongly abraded, the knots are only suggested by sewing with the needle, making a step over the two warp threads (Haşegan 1984, 74, figs. 12–13). Commonly, the new warp threads which are drawn on the backside of the carpet are cut, but in the case of the carpet's frontside (Fig. 24) it is necessary to keep them, that the areas where the restoration was done is more visible. The carpet's kilim area is restored (Figs.

26–27) in the same way, with new warp threads if they are missing (Haşegan 1984, 68, 71 and 73, fig. 9), or only with weft threads, which is the most common case.

The mixed method, consisting in doubling and remake of knots (Figs. 24–25), is used when there are large areas with gaps and multiple areas with small losses of knots (Stănculescu *et al.* 2006).

Finally, in order to facilitate the carpet's future proper display by hanging, on the backside has to be sewn a sleeve of doubling cloth (Fig. 28). Through it will pass a metallic tube or rod, which will be hung by its both ends. Also on the backside, the edges of the carpets will be reinforced by side strips, to reduce the tension on the item (Haşegan 1984, 73, fig. 14). Additionally, the inventory number of the carpet may be inscribed on a patch of cotton, which will be sewn on the carpet's backside, and a sack of linen or cotton has to be made on the rolled carpet's size, to protect it against dust and against moths' attack during its transportation (Stănculescu *et al.* 2006, 167). In the museum's store the carpets are kept on a rack made of dry wood, being rolled around a metallic or wooden rod and wrapped in two sheets of nonwoven fabric (Netex), with the both ends of the wrapping materials tied with narrow cotton ribbons on the mentioned rod, on which is hanging a label with the inventory number.



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### LIST OF ILLUSTRATIONS

1. Different types of degradation: wax stains, dust and dirt deposits, material losses.
2. Types of degradation: gaps and loss of pile due to moths' attacks, ravelling, dusting.
3. Deformation of the carpet as a result of mechanical stress.
4. Carpet fragment, cut probably in order to be reused.
5. Older carpet fragments reused by sewing them together, in order to make a "patches rug" (backside).
6. Types of degradation: rodent nibbles which caused large material losses, loss of pile due to cloth or fur moths' attacks, ravelling, dirt and soot deposits.
7. Discoloration of a previously restored area, where the motif has been reconstructed with new wool threads.
8. Abrasion of pile due to functional wear and tear.
9. Old doubling with an improper cloth, dyed with instable colours, showing traces of fungi attack.
10. Old repair: improper doubling with hemp sack cloth.
11. Old doubling hemp sack cloth with specific nibbles of rodent mammals.
12. Gaps' border strengthened by overcasting before the wash.
13. Donor inscription impregnated with Regnal solution during the wet cleaning. The area where the water did not penetrate through the textile fibre is visible.
14. Soapberries (*Sapindus mukorossi*) and the decoction made of them used in wet carpet cleaning.
15. Fringes and kilim area protected by a piece of gauze during the wet cleaning.
16. Wet cleaning using a washing roller in an improvised pool.
17. The carpets' rinse after wash and drying.
18. The proper restoration of carpets.
19. Whole surface doubling with cloth dyed in the rug's predominant colour, in order to restore its shape.
20. Consolidation on support by securing the warp and weft threads preserved by thread-by-thread bridging.
21. Doubling of the gaps areas with material dyed in the border's and in the ground's colour.
22. Remake of knots by inserting of new warp and weft threads (detail before restoration).
23. Details before and after restoration: Remake of knots by inserting of new warp and weft threads (detail after restoration).
24. General view of the backside after restoration: mixed method of restoration, by lining and remake of knots.
25. General view of the frontside after restoration.
26. The kilim area's remaking with new threads (detail before restoration).
27. The kilim area's remaking with new threads (detail after restoration).
28. Cloth sleeve sewn on a carpet's backside, in order to facilitate its proper display by hanging.
29. Exchange of experience in Oriental carpets' wet cleaning with Peter and Eva Hofmeister, Stefano Ionescu and Frank Thomas Ziegler (2012).



## LISTA ILUSTRĂȚILOR

1. Diferite tipuri de degradări: pete de ceară, depuneri de praf și murdărie, pierderi de material.
2. Tipuri de degradări: lacune și pierderea plușului ca urmare a atacului de molii, deșirări, depuneri de praf.
3. Deformarea covorului ca urmare a unor solicitări mecanice.
4. Fragment de covor tăiat probabil pentru a fi refolosit.
5. Fragmente de covor vechi reutilizate prin coasere laolaltă, în scopul confecționării unui “preș din petice” (verso).
6. Tipuri de degradări: rosături de rozătoare care au cauzat pierderi mari de material, pierderea plușului ca urmare a unor atacuri de molii, deșirări, depuneri de murdărie și funingine.
7. Decolorarea unei zone restaurate anterior, unde modelul fusese refăcut cu fire noi de lână.
8. Tocirea plușului ca urmare a uzurii funcționale.
9. Dublare veche cu pânză inadecvată, vopsită cu culori instabile, prezentând urme de atac fungic.
10. Reparație veche: dublare inadecvată cu pânză de sac din cânepă.
11. Pânză veche de dublare din cânepă cu rosături specifice pentru mamiferele rozătoare.
12. Marginile lacunelor consolidate înainte de spălare prin surfilare.
13. Inscripție de donator impregnată cu soluție de Regnal în timpul curățării umede. Se poate observa zona în care apa nu a pătruns prin fibra textilă.
14. Nuci de săpun (*Sapindus mukorossi*) și decoctul din acestea folosit la curățarea umedă a covoarelor.
15. Franjurii și zona chilimului protejate printr-o bucată de tifon pe parcursul curățării umede.
16. Curățarea umedă cu ajutorul rolei de spălare într-un bazin improvizat.
17. Clătirea și uscarea covoarelor după spălare.
18. Restaurarea propriu-zisă a covoarelor.
19. Dublare pe întreaga suprafață cu pânză de in vopsită în culoarea predominantă a covorului pentru a-i reda forma.
20. Consolidare pe suport prin prinderea firelor de urzeală și băteală păstrate prin pontare fir cu fir.
21. Dublarea zonele lacunare cu material vopsit în culoarea chenarului și a fondului.
22. Refacere de noduri prin introducerea de fire noi de urzeală și băteală (detaliu înainte de restaurare).
23. Refacere de noduri prin introducerea de fire noi de urzeală și băteală (detaliu după restaurare).
24. Ansamblu dos după restaurare: metoda mixtă de restaurare, prin dublare și refacere de noduri.
25. Ansamblu față după restaurare.
26. Restaurarea zonei chilimului cu fire noi de băteală (detaliu înainte de restaurare).
27. Restaurarea zonei chilimului cu fire noi de băteală (detaliu după restaurare).
28. Manșon din pânză de dublare cusut pe dosul unei covor, spre a facilita expunerea sa adecvată prin suspendare.
29. Schimb de experiență în curățarea umedă a covoarelor orientale cu Peter și Eva Hofmeister. Stefano Ionescu și Frank Thomas Ziegler (2012).



1.



2.

1. Different types of degradation: wax stains, dust and dirt deposits, material losses.
2. Types of degradation: gaps and loss of pile due to moths' attacks, ravelling, dusting.



3.



4.



5.

3. Deformation of the carpet as a result of mechanical stress.
4. Carpet fragment, cut probably in order to be reused.
5. Older carpet fragments reused by sewing them together, in order to make a "patches rug" (backside).



6.



7.

6. Types of degradation: rodent nibbles which caused large material losses, loss of pile due to cloth or fur moths' attacks, ravelling, dirt and soot deposits.
7. Discoloration of a previously restored area, where the motif has been reconstructed with new wool threads.





8.

8. Abrasion of pile due to functional wear and tear.



9.

9. Old doubling with an improper cloth, dyed with instable colours, showing traces of fungi attack.



10.

10. Old repair: improper doubling with hemp sack cloth.



11.

11. Old doubling hemp sack cloth with specific nibbles of rodent mammals.



12.

12. Gaps' border strengthened by overcasting before the wash.



13.

13. Donor inscription impregnated with Regnal solution during the wet cleaning. The area where the water did not penetrate through the textile fibre is visible.





14



15.

14. Soapberries (*Sapindus mukorossi*) and the decoction made of them used in wet carpet cleaning.  
15. Fringes and kilim area protected by a piece of gauze during the wet cleaning.



16. Wet cleaning using a washing roller in an improvised pool.



17.



18.

17. Whole surface doubling with cloth dyed in the rug's predominant colour, in order to restore its shape.  
18. Consolidation on support by securing the warp and weft threads preserved by thread-by-thread bridging.





19.



20.

19. Doubling of the gaps areas with material dyed in the border's and in the ground's colour.  
20. Remake of knots by inserting of new warp and weft threads (detail before restoration).



21. Details before and after restoration: Remake of knots by inserting of new warp and weft threads (detail after restoration).



22.



23.

22. General view of the backside after restoration: mixed method of restoration, by lining and remake of knots.  
23. General view of the frontside after restoration.





24.

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24. The kilim area's remaking with new threads (detail before restoration).  
25. The kilim area's remaking with new threads (detail after restoration).

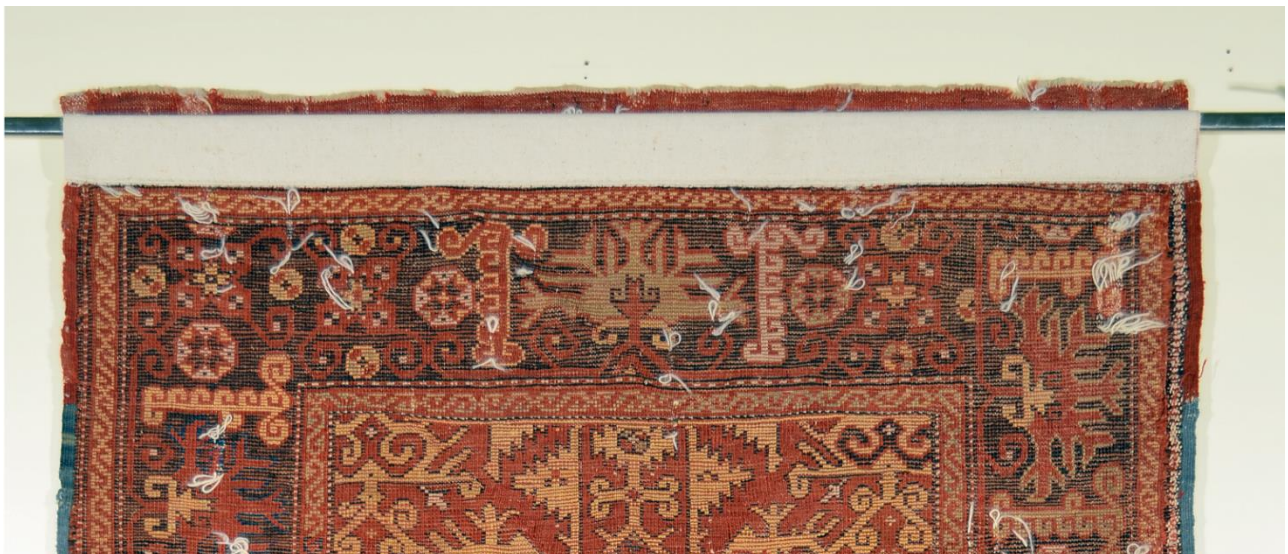


26.



27.

26. The kilim area's remaking with new threads (detail before restoration).  
27. The kilim area's remaking with new threads (detail after restoration).



28. Cloth sleeve sewn on a carpet's backside, in order to facilitate its proper display by hanging.





29. Exchange of experience in Oriental carpets' wet cleaning with Peter and Eva Hofmeister, Stefano Ionescu and Frank Thomas Ziegler (2012).

## MANUSCRIPT DE VICTORIA VERBI DEI CONSERVATION, INVESTIGATION, RESTORATION

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**Abstract:** *The manuscript De victoria verbi Dei, 1417, is from the medieval manuscripts collection of the Brukenthal National Museum - Brukenthal Library.*

*In the article are presented the manuscript description, the state of conservation, production details and the optical microscopy study of the components: paper, parchment and leather. The conservation and restoration interventions applied on the manuscript are described.*

**Keywords:** *manuscript on paper and parchment, conservation, restoration, optical microscopy.*

**Rezumat:** *Manuscrisul De victoria verbi Dei, 1417, face parte din colecția de manuscrise medievale ale Muzeul Național Brukenthal – Biblioteca Brukenthal.*

*În articol este prezentată descrierea cărții manuscris, starea de conservare, detaliile de realizare și studiul prin microscopie optică a suporturilor din hârtie, pergament și piele. Sunt descrise intervențiile efectuate pentru conservarea și restaurarea manuscrisului.*

**Cuvinte-cheie:** *manuscris pe hârtie și pergament, conservare, restaurare, microscopie optică.*

### A. Manuscript Description

In the Restoration Laboratory came 3 manuscripts whose author is Rupertus Tuitiensis, each presenting different structures. The first restored manuscript was presented in this article.

The manuscript *De victoria verbi Dei*, author Rupertus Tuitiensis, copyist Christiannus Medicus, 1417, owned by the Brukenthal Library has inventory no. MS. 681 and the old identification number IX, Q.a.10. (Fig. 1) (Fig. 2)

It presents the following physical characteristics: dimensions L= 310 mm, l= 230 mm and variable thickness from 85 mm (spine) to 105 mm (outer edge).

The manuscript text block contains 314 leaves. Of these, 46 are made from parchment and 268 are made from paper.

Each one has the approximately dimensions of L=300 mm, l= 215 mm and the thickness varies from 1.2-1.8 mm.

Paper leaves randomly alternate with parchment sheets. (Fig. 3)

The pages are numbered by the curator with Arabic

numerals from 1 to 313, in pencil, in the upper right corner. After page 313, an unknown number of pages are missing, detached by cutting with a sharp body. The last page is not numbered.

The text box has the dimensions of L=215, l=140 mm. The writing is done on two columns, with a width of 6-6.5 mm and the writing is executed on 40-43 lines. (Fig. 4)

Pages 289-300 have a modified text box with dimensions l=175mm, L=225mm, the two columns are 8-8.5mm wide and a no. of 38-40 rows. (Fig. 5)

Drawing the lines of the text box was done before writing, with black ink.

The text is written in Latin, with black and red letters.

Each chapter title is written with a red capital letter, ornamented with vegetable motifs and continues with black letters larger than the writing of the text, across the entire width of the column. (Fig. 6)

Each paragraph in the chapter begins with a large, red capital letter decorated or not inside the body of the letter with plant motifs. They occupy 2 to 5 lines and are positioned inside the text box.

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On the edge of the text there are different numberings, corrections and signs that draw attention to certain passages in the text (Fig. 7).

The covers have the following physical characteristics: dimensions L= 310 mm, L= 220 mm and thickness of 10 mm.

The boards are made of wood, covered in red leather. The thickness of the leather covering the board is 0.8-1.1 mm.

2 metal buttons are fixed on the front cover, three, 2 corners and 2 locks are missing. The front cover is detached from the body of the book (Fig. 8).

3 metal buttons are fixed on the back cover, two are missing, 1 corner on the upper part, the one on the lower part is missing and 2 locks. (Fig. 9)

The leather ties from the locks are missing. The front edge is irregular.

The binding of the manuscript is original, made with hemp rope and strips of cowhide, l=1.6cm, g=3-4 mm.

It has 4 double raised bands and two capital bands. (Fig. 10) Capital band is made of braided leather on a hemp thread support. (Fig. 11)

The anterior and posterior end papers, past down and free, are missing. (Fig. 12) (Fig. 13)

## B. State of preservation

The *De victoria verbi Dei* manuscript is made of the following component materials: paper, parchment, leather, metal.

The state of conservation evaluation of the *De victoria verbi Dei* manuscript shows that there are physical-mechanical, chemical, biological degradations and inadequate interventions on the manuscript.

The paper leaves in the book block are made of handmade paper, with watermark (Fig. 14).

Degradations: deposits of dust and residues of an organic nature, adhering and encrusted dirt, melted wax, ink and other stains of unknown origin, moisture halos, marginal fringes, cracks, perforations, folds, lack of material from the support, photochemical degradation - general yellowing of the tabs (Fig. 15) (Fig. 16).

Parchment leaves were obtained from sheepskin, according to the arrangement of the hair follicles observed with the magnifying glass and the microscope (Chiriță 1983, 62), (Fig. 17).

Degradations: dust deposits, sticky and encrusted dirt, melted wax, ink and other stains of unknown origin, wrinkled, distorted, cut, torn areas, with and without loss of material from the support.

Defects of the parchment from its processing phases are observed: traces of hair, deposits of calcium carbonate, holes or holes repaired with small original seams made with hemp threads (Fig. 18).

The book block has not lost its flatness, in the lower part the capital band is slightly detached.

The human factor is also the cause of some damage to the book block: several leaves of parchment were cut with a sharp instrument (Fig. 19).

The hemp rope and leather strips used to make the binding show adhering dirt, dust and deposits of crystallized and aged glue.

The leather cover is made of sheepskin (Miu 2005, 23) and was glued to the board with a starch-based adhesive (Fig. 20).

Degradations: dust deposits, sticky and ingrained dirt, stains of various nature, cracks, discolorations, lack of material, exfoliation. It is stiff, fragile, dehydrated. The inside of the leather covers has the original red colour.

The board made of wood shows deposits of adherent dirt, unknown origin stains and deposits of crystallized and aged glue.

The metal ornaments, locks and corners are made of brass, and show specific corrosion products and adhering dirt.

Locally, the traces of an inactive biological attack, caused by xylophagous insects, morphophysiological deposits and inactive moulds are visible.

## C. Study by optical microscopy of leather, parchment and paper surfaces. Photomicrographs.

The surface of the book was subjected to the study by optical microscopy (cover and pages of the book) to highlight the state of conservation. The images captured with the help of the optical microscope (photomicrographs) at different magnifications illustrate details of the analysed surfaces in which their characteristics are visible.

Photomicrographs of the object surface to highlight the state of preservation of the previous red leather cover: detail of the cover surface where the hair follicles are visible that allow the identification of the skin type (Fig. 21), detail of the cover surface where a ridge is visible (Fig. 22), a puncture (Fig. 23), an exfoliation with loss of material from the support

(Fig. 24), a hole (Fig. 25). The appearance of the cover surface is also visible in the photomicrographs (Fig. 26) (Fig 27) (Fig 28).

The pages of the book, parchment and paper were subjected to the study by optical microscopy:

- parchment leaf page 28, surface detail written in red (Fig. 29), surface detail written in black (Fig. 30), surface detail right edge (Fig. 31), surface detail middle right edge (Fig. 32), surface detail right edge (Fig 33), surface detail in the middle of the page (Fig 34).

- paper leaf page 29, details of the surface (Fig. 35) (Fig 36) (Fig 37), detail of the surface with writing, right edge (Fig. 38).

- parchment leaf page 40, surface detail with loss of flatness, middle right edge (Fig 39), surface detail middle right edge (Fig 40), written surface detail right edge (Fig 41), surface detail with writing, tear (Fig 42).

- parchment leaf, page 66, surface detail, writing (Fig. 43), right edge surface detail (Fig. 44), middle right edge surface detail (Fig. 45).

- paper leaf, page 68, written surface detail (Fig. 46), right edge surface detail (Fig. 47).

- parchment leaf, page 73, surface detail, right edge (Fig 48), written surface detail (Fig 49).

- paper leaf, page 75, written surface detail (Fig. 50), right edge surface detail (Fig. 51).

- parchment leaf, page 99, written surface detail (Fig. 52), right edge surface detail (Fig. 53).

- paper leaf, page 100, written surface detail (Fig. 54), right edge surface detail (Fig. 55).

- parchment leaf, page 117, written surface detail (Fig. 56), right edge surface detail (Fig. 57).

#### D. Restoration interventions

The restoration was done on the unopened volume, the conservation-restoration interventions respected the principle of minimal intervention. The stages of

the restoration intervention were photographically documented, showing the images of the object before and after the interventions, as well as details. (Fig. 58-61)

Prior to the interventions, cleaning tests were performed.

The following were done: dry cleaning, wet cleaning, humidification, gluing, refixing, spot consolidation and consolidation of areas with tears and losses, colour integrations.

Utensils, materials and substances used: special erasers of different abrasive proprieties, brushes, scalpel, mini vacuum cleaner, sandbags, rigid weights, filter paper, wave of Japanese paper of different thickness, sticks with cotton wool, non-woven textile material, Goretex membrane, wet cotton pads and chemical sponges, distilled water ethyl and isopropyl alcohol, natural and synthetic adhesives, rice starch adhesive and polyvinyl acetate 1:1 and/or Klucel G (Hydroxy-propyl cellulose), skin cleaning solvent, anionic detergent,

A special cardboard box was made for storing the manuscript book.

Recommendations for storage: a stable atmosphere, with a temperature between 16-18 ° C, a relative humidity of 40-50%, combined with a light intensity below 50 lux and an air filtration system. (Kite 2006, 209).

It is also important to periodically check the state of preservation of the object every 3 months.

#### E. Conclusion

The interventions carried out were correlated with the listed degradations, for the restoration of the book, materials compatible with the original ones of the piece were used.

By restoring the book of Rupertus Tuitiensis, *De victoria verbi Dei*, it was returned to the study circuit of the Brukenthal National Museum - Brukenthal Library

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## LIST OF ILLUSTRATIONS

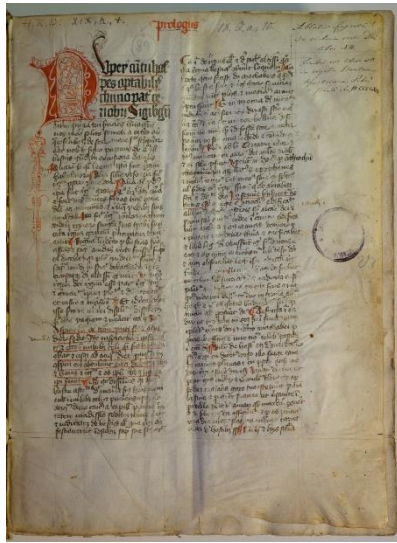
1. Title page
2. Detail of the book title and the author's name
3. Sheets of paper and parchment
4. Text box
5. Text box
6. Detail of the chapter title ornament
7. Text detail with red paragraph start letters, corrections and warning signs
8. Front cover before restoration
9. Back cover before restoration
10. Spine before restoration
11. Lower band capital
12. Inside front cover before restoration
13. Inside back cover before restoration
14. Filigree detail, moisture halo
15. Detail of ink stains
16. Detail of marginal fringes, cracks, folds
17. Parchment detail, hair follicles
18. Parchment degradations: dirt, stains, wrinkled, distorted, cut, torn areas, with and without loss of material from the support.
19. Cut pages
20. Cover detail, hair follicles
21. Detail of the cover surface, photomicrograph 40x
22. Detail of the cover surface (redness), photomicrograph 40x
23. Detail of the cover surface (puncture), photomicrograph 40x
24. Detail of the cover surface (exfoliation with loss of material from the support), photomicrograph 20x
25. Detail of the cover surface (hole), photomicrograph 20x
26. Detail of the cover surface, photomicrograph 40x
27. Detail of the cover surface, photomicrograph 40x
28. Detail of the cover surface, photomicrograph 40x
29. Page 28 surface detail (written in red), photomicrograph 40x
30. Page 28 surface detail (written in black), photomicrograph 40x
31. Page 28 surface detail, right edge, photomicrograph 80x
32. Page 28 surface detail, middle right edge, photomicrograph 80x
33. Page 28 surface detail, right edge, photomicrograph 80x
34. Page 28 surface detail, middle of page, photomicrograph 80x
35. Page 29 surface detail, photomicrograph 40x
36. Page 29 surface detail, photomicrograph 80x
37. Page 29 surface detail, photomicrograph 80x
38. Page 29 surface detail, writing right edge, photomicrograph 80x
39. Page 40 surface detail, loss of flatness middle right edge, photomicrograph 20x
40. Page 40 surface detail, middle right edge, photomicrograph 40x
41. Page 40 surface detail, writing right margin, photomicrograph 40x
42. Page 40 surface detail, writing tear, photomicrograph 40x
43. Page 66 surface detail, writing, photomicrograph 40x
44. Page 66 surface detail, right edge, photomicrograph 40x
45. Page 66 surface detail, middle right edge, photomicrograph 40x
46. Page 68 surface detail, writing, photomicrograph 40x
47. Page 68 surface detail, right edge, photomicrograph 40x
48. Page 73 surface detail, right margin, photomicrograph 40x
49. Page 73 surface detail, writing, photomicrograph 40x

50. Page 75 surface detail, writing, photomicrograph 40x
51. Page 75 surface detail, right margin, photomicrograph 80x
52. Page 99 surface detail, writing, photomicrograph 40x
53. Page 99 surface detail, right margin, photomicrograph 40x
54. Page 100 surface detail, writing, photomicrograph 40x
55. Page 100 surface detail, right edge, photomicrograph 80x
56. Page 117 surface detail, writing, photomicrograph 40x
57. Page 117 surface detail, right margin, photomicrograph 80x
58. Front cover after restoration
59. Back cover after restoration
60. Inside front cover after restoration
61. Inside back cover after restoration
62. Spine after restoration

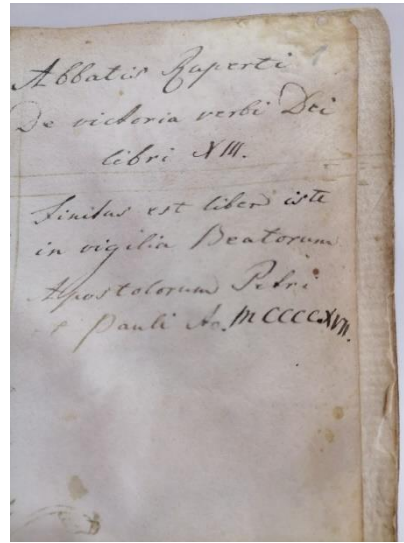
### LISTA ILUSTRĂȚILOR

1. Pagina de titlu
2. Detaliu titlul operei și numele autorului
3. File de hârtie și pergament
4. Caseta de text
5. Caseta de text
6. Detaliu al ornamentului titlului de capitol
7. Detaliu text cu litere roșii de început de paragraf, corecturi și semne de atenționare
8. Coperta anterioară înainte de restaurare
9. Coperta posterioară înainte de restaurare
10. Cotor înainte de restaurare
11. Capital band inferior
12. Interior coperta anterioară înainte de restaurare
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14. Detaliu filigran, halo de umiditate
15. Detaliu pete de cerneală
16. Detaliu franjurări marginale, fisuri, plieri
17. Detaliu pergament, foliculii piloși
18. Degradări pergament: murdărie, pete, zone încrețite, distorsionate, tăiate, rupte, cu și fără pierderi de material din suport.
19. Pagini tăiate
20. Detaliu copertă, foliculii piloși
21. Detaliu suprafață copertă, microfotografie 40x
22. Detaliu suprafață copertă (rosătura), microfotografie 40x
23. Detaliu suprafață copertă (înțepătură), microfotografie 40x
24. Detaliu suprafață copertă (exfoliere cu pierdere de material din suport), microfotografie 20x
25. Detaliu suprafață copertă (orificiu), microfotografie 20x
26. Detaliu suprafață copertă, microfotografie 40x
27. Detaliu suprafață copertă, microfotografie 40x
28. Detaliu suprafață copertă, microfotografie 40x
29. Detaliu suprafață pag. 28 (scris cu roșu), microfotografie 40x
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31. Detaliu suprafață pag.28, margine dreapta, microfotografie 80x
32. Detaliu suprafață pag. 28, margine dreapta mijloc, microfotografie 80x
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34. Detaliu suprafață pagina 28, mijloc pagină, microfotografie 80x
35. Detaliu suprafață pagina 29, microfotografie 40x
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39. Fig. 39 Detaliu suprafață pagina 40, pierderea planeității margine dreapta mijloc, microfotografie 20x
40. Detaliu suprafață pagina 40, margine dreapta mijloc, microfotografie 40x
41. Detaliu suprafață pagina 40, scris margine dreapta, microfotografie 40x
42. Detaliu suprafață pagina 40, scris ruptură, microfotografie 40x
43. Detaliu suprafață pagina 66, scris, microfotografie 40x
44. Detaliu suprafață pagina 66, margine dreapta, microfotografie 40x
45. Detaliu suprafață pagina 66, margine dreapta mijloc, microfotografie 40x
46. Detaliu suprafață pagina 68, scris, microfotografie 40x
47. Detaliu suprafață pagina 68, margine dreapta, microfotografie 40x
48. Detaliu suprafață pagina 73, margine dreapta, microfotografie 40x
49. Detaliu suprafață pagina 73, scris, microfotografie 40x
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54. Detaliu suprafață pagina 100, scris, microfotografie 40x
55. Detaliu suprafață pagina 100, margine dreapta, microfotografie 80x
56. Detaliu suprafață pagina 117, scris, microfotografie 40x
57. Detaliu suprafață pagina 117, margine dreapta, microfotografie 80x
58. Coperta anterioară după restaurare
59. Coperta posterioară după restaurare
60. Interior coperta anterioară după restaurare
61. Interior coperta posterioară după restaurare
62. Cotor după restaurare



1.



2.

1. Title page
2. Detail of the book title and the author's name



3. Sheets of paper and parchment



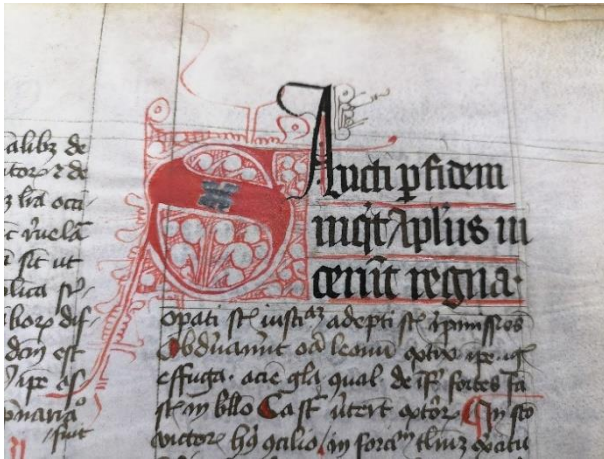
4.



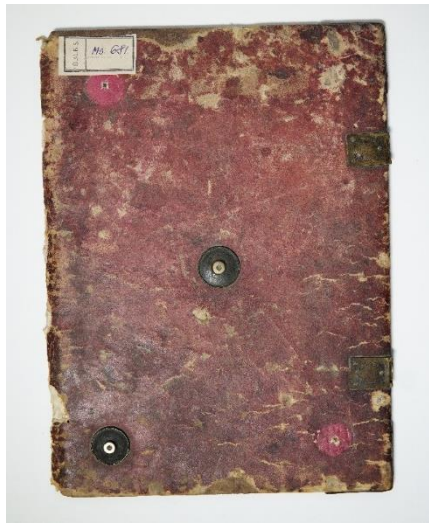
5.

4. Text box
5. Text box





- 6. Detail of the chapter title ornament
- 7. Text detail with red paragraph start letters, corrections and warning signs



- 8. Front cover before restoration
- 9. Back cover before restoration



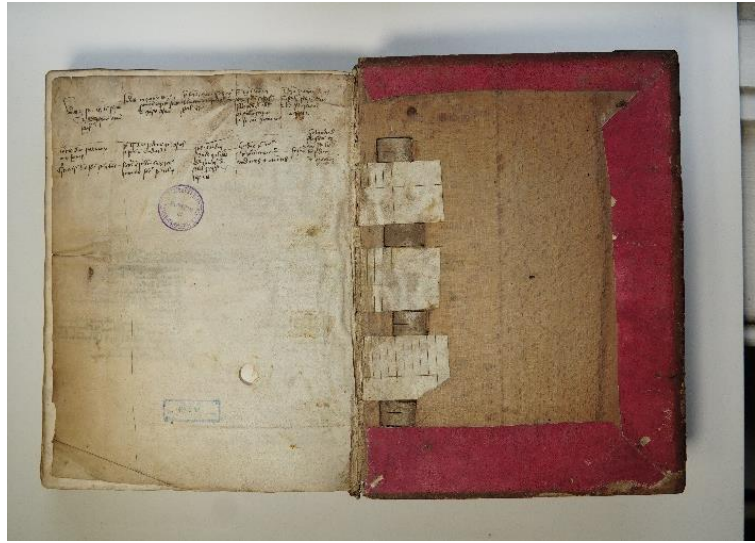
- 10. Spine before restoration
- 11. Lower band capital





12.

12. Inside front cover before restoration



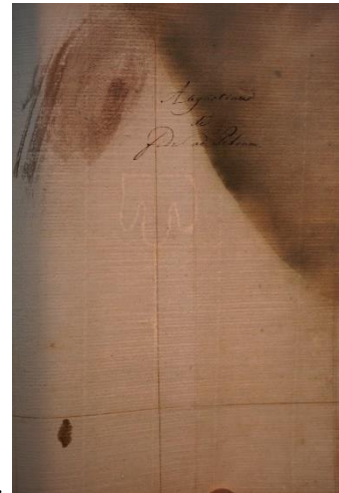
13.

13. Inside back cover before restoration



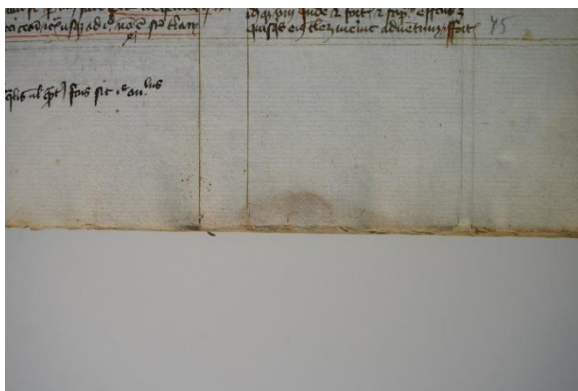
14.

14. Filigree detail, moisture halo



15.

15. Detail of ink stains



16.

16. Detail of marginal fringes, cracks, folds



17.

17. Parchment detail, hair follicles





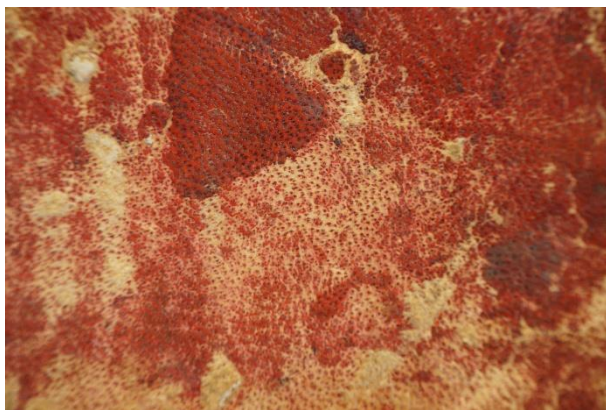
18.



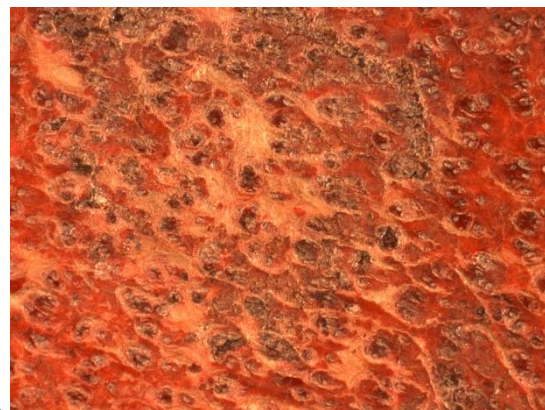
19.

18. Parchment degradations: dirt, stains, wrinkled, distorted, cut, torn areas, with and without loss of material from the support.

19. Cut pages



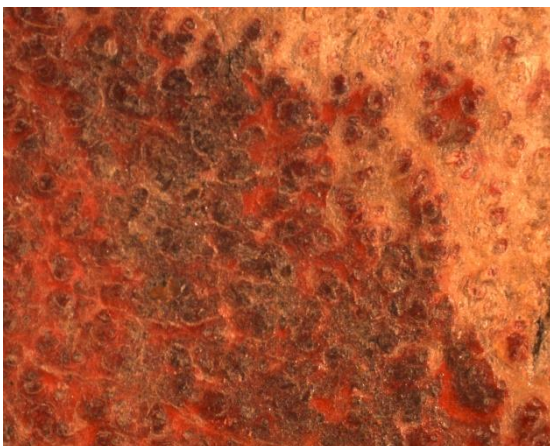
20.



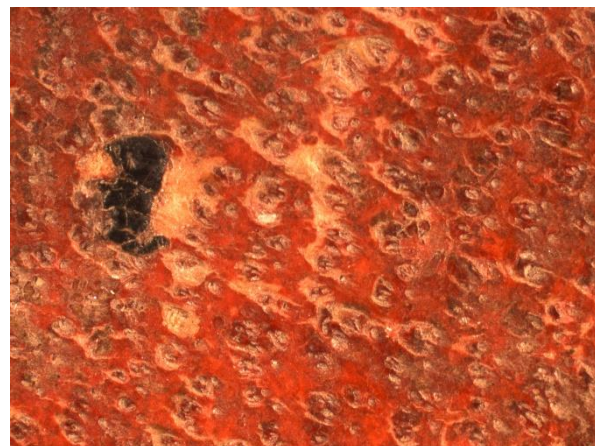
21.

20. Cover detail, hair follicles

21. Detail of the cover surface, photomicrograph 40x



22.

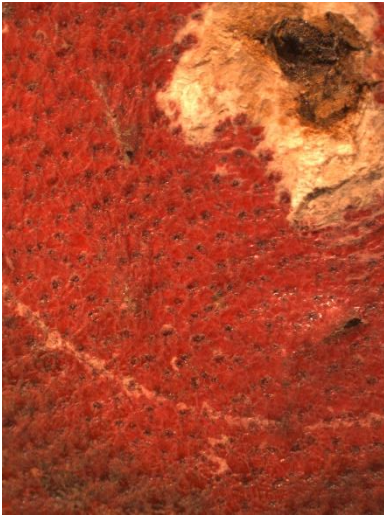


23.

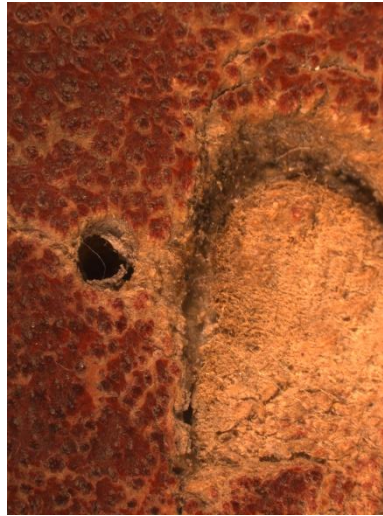
22. Detail of the cover surface (redness), photomicrograph 40x

23. Detail of the cover surface (puncture), photomicrograph 40x





24.



25.

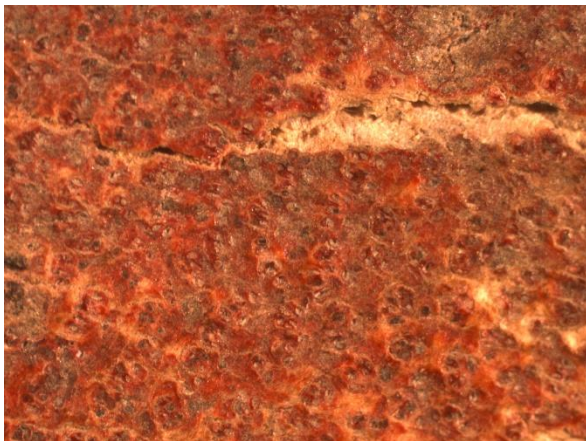


26.

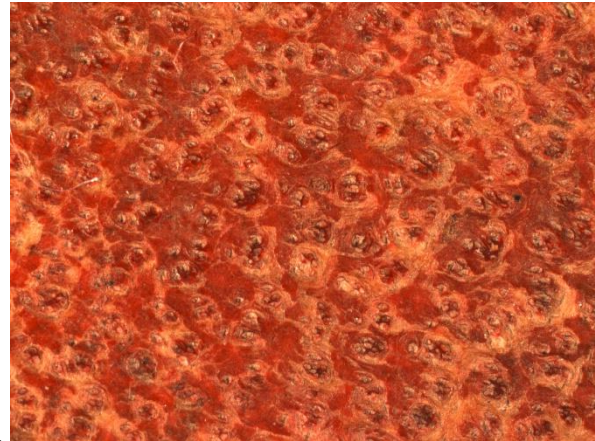
24. Detail of the cover surface (exfoliation with loss of material from the support), photomicrograph 20x

25. Detail of the cover surface (hole), photomicrograph 20x

26. Detail of the cover surface, photomicrograph 40x



27.



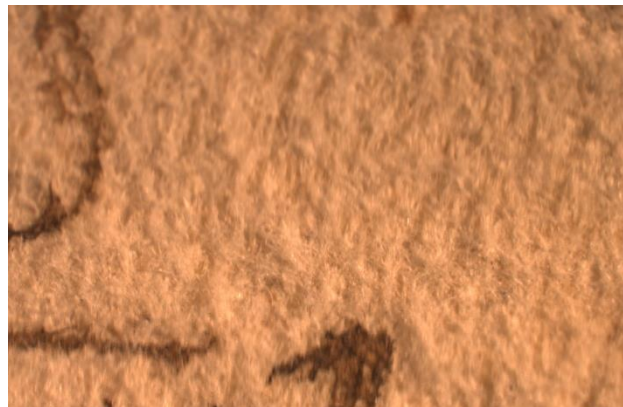
28.

27. Detail of the cover surface, photomicrograph 40x

28. Detail of the cover surface, photomicrograph 40x



29.

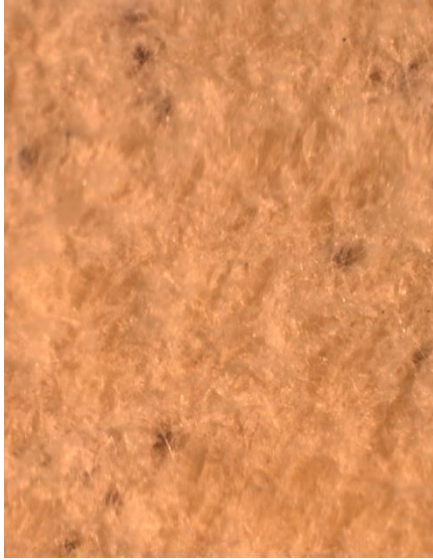


30.

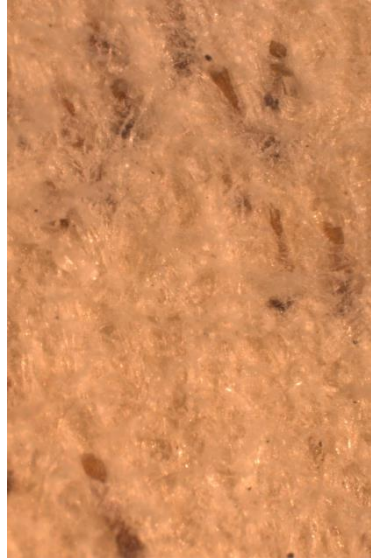
29. Page 28 surface detail (written in red), photomicrograph 40x

30. Page 28 surface detail (written in black), photomicrograph 40x





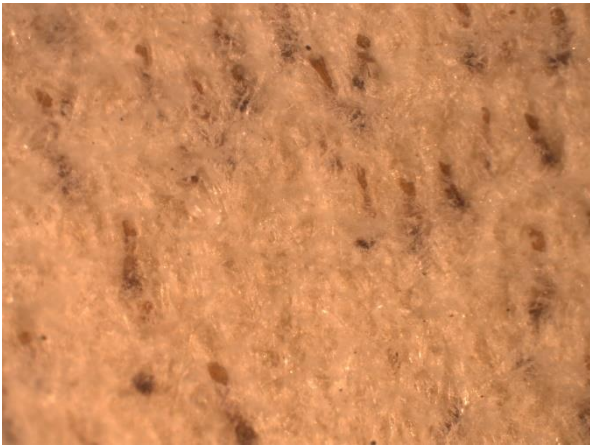
31.



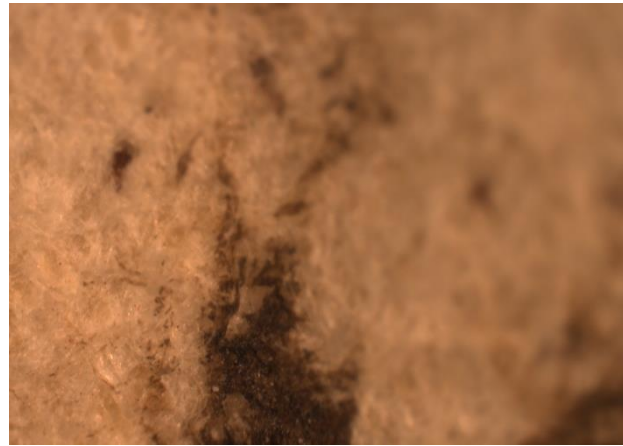
32.

31. Page 28 surface detail, right edge, photomicrograph 80x

32. Page 28 surface detail, middle right edge, photomicrograph 80x



33.



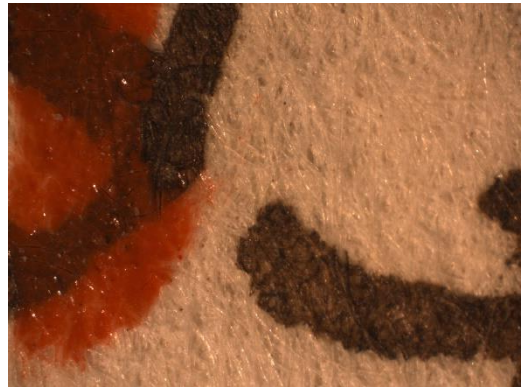
34.

33. Page 28 surface detail, right edge, photomicrograph 80x

34. Page 28 surface detail, middle of page, photomicrograph 80x



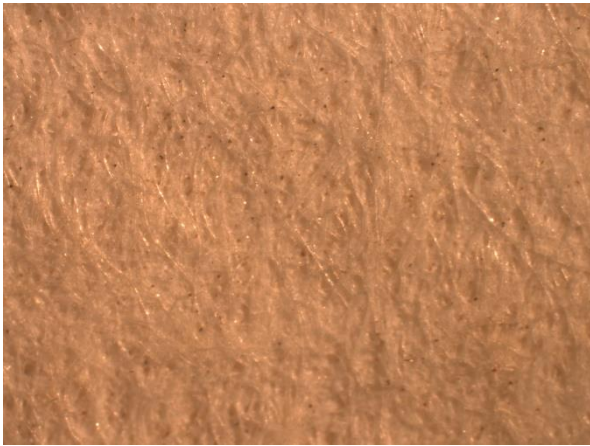
35.



36.

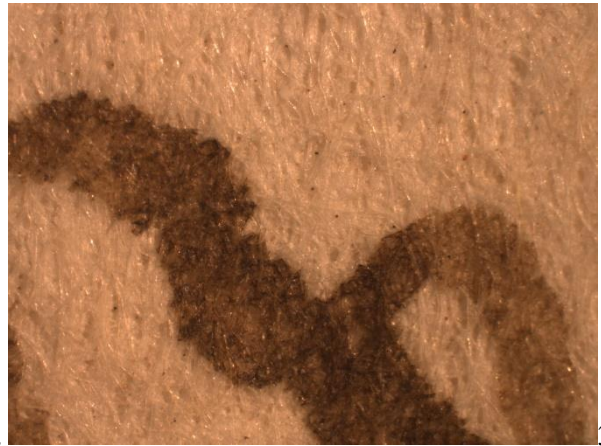
35. Page 29 surface detail, photomicrograph 40x

36. Page 29 surface detail, photomicrograph 80x



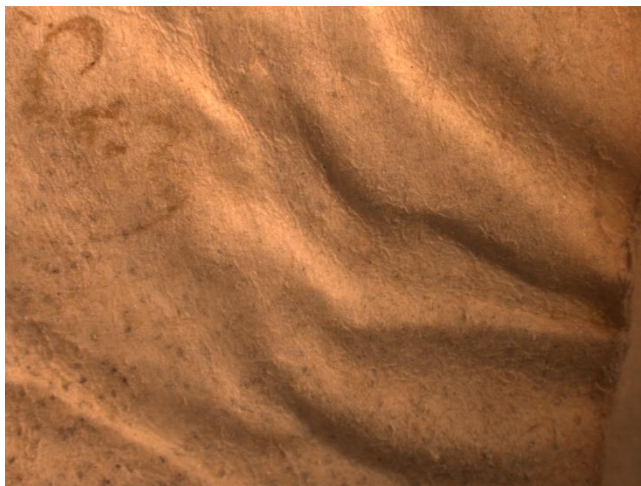
37.

37. Page 29 surface detail, photomicrograph 80x



38.

38. Page 29 surface detail, writing right edge, photomicrograph 80x



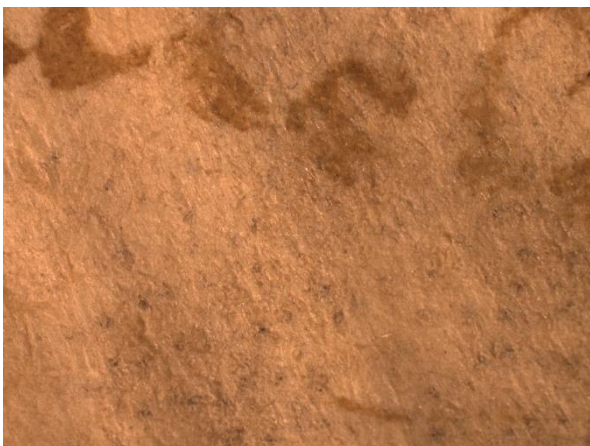
39.

39. Page 40 surface detail, loss of flatness middle right edge, photomicrograph 20x



40.

40. Page 40 surface detail, middle right edge, photomicrograph 40x



41.

41. Page 40 surface detail, writing right margin, photomicrograph 40x



42.

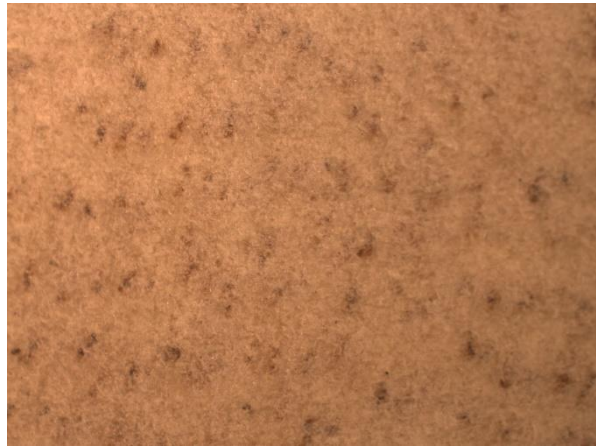
42. Page 40 surface detail, writing tear, photomicrograph 40x





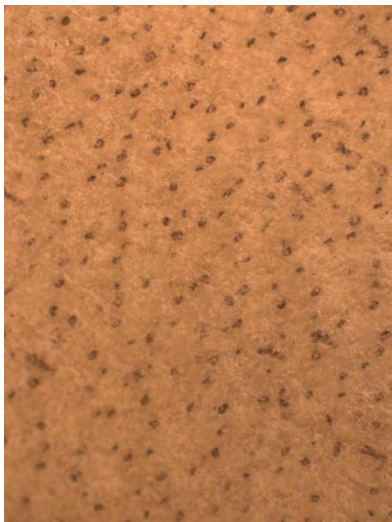
43.

43. Page 66 surface detail, writing, photomicrograph 40x



44.

44. Page 66 surface detail, right edge, photomicrograph 40x



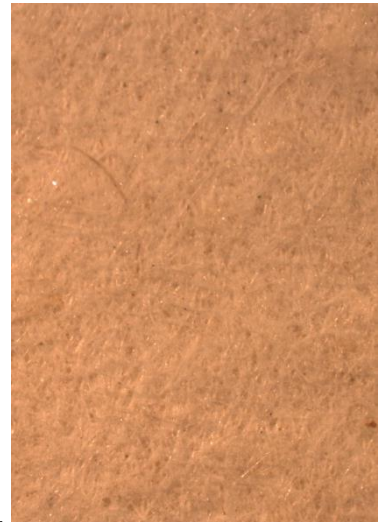
45.

45. Page 66 surface detail, middle right edge, photomicrograph 40x



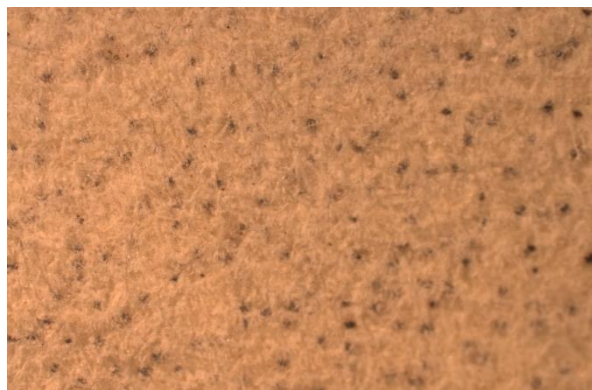
46.

46. Page 68 surface detail, writing, photomicrograph 40x



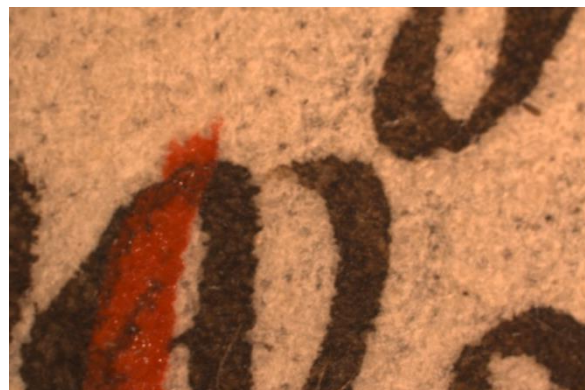
47.

47. Page 68 surface detail, right edge, photomicrograph 40x



48.

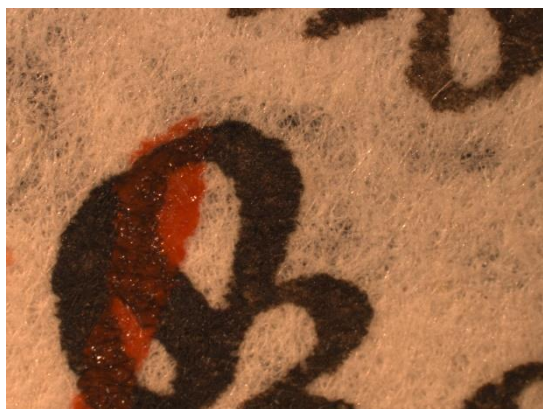
48. Page 73 surface detail, right margin, photomicrograph 40x



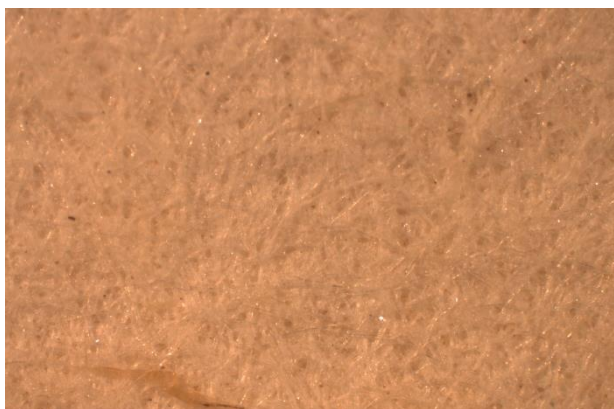
49.

49. Page 73 surface detail, writing, photomicrograph 40x





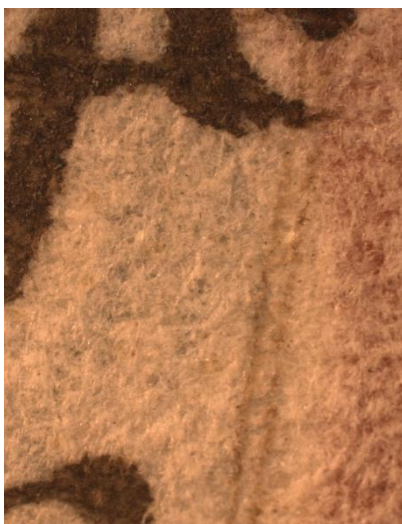
50.



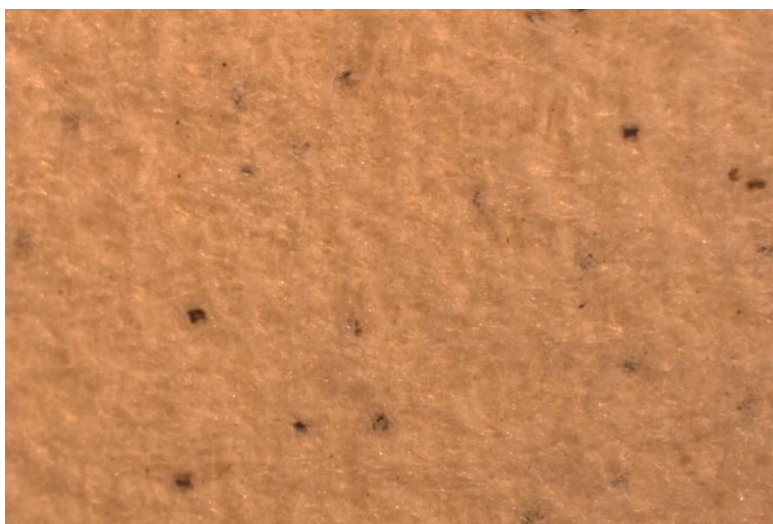
51.

50. Page 75 surface detail, writing, photomicrograph 40x

51. Page 75 surface detail, right margin, photomicrograph 80x



52.



53.

52. Page 99 surface detail, writing, photomicrograph 40x

53. Page 99 surface detail, right margin, photomicrograph 40x



54.

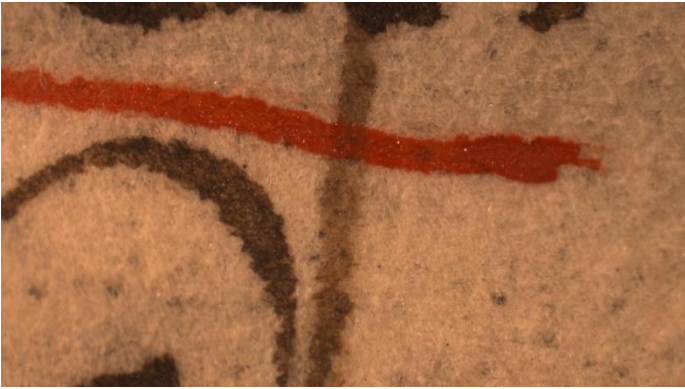


55.

54. Page 100 surface detail, writing, photomicrograph 40x

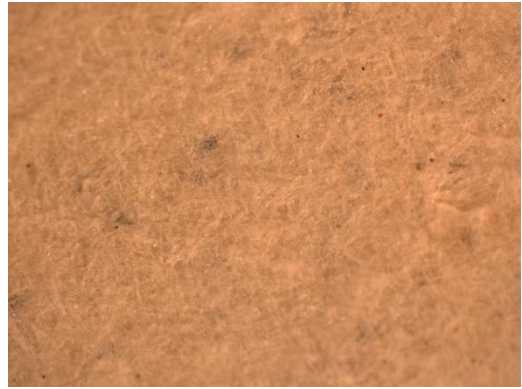
55. Page 100 surface detail, right edge, photomicrograph 80x





56.

56. Page 117 surface detail, writing, photomicrograph 40x



57.

57. Page 117 surface detail, right margin, photomicrograph 80x



58.

58. Front cover after restoration



59.

59. Back cover after restoration



60.

60. Inside front cover after restoration



61.

61. Inside back cover after restoration



62. Spine after restoration

## WOLF FUR COAT: CONSERVATION AND RESTORATION

Raluca BUGNERIU\*  
Ruxandra-Ioana STROIA\*\*  
Polixenia-Georgeta POPESCU\*\*\*

**Abstract:** *The piece belonged to Emil Witting, a well-known publicist and hunter, and entered the collection of the "August von Spiess" Hunting Museum within the Brukenthal National Museum in 2022.*

*The article presents the description of the piece, the state of conservation, the optical microscopy visualization of the wolf fur, the conservation-restoration interventions.*

**Keywords:** *Wolf fur coat, Emil Witting, conservation, restoration, optical microscopy.*

**Rezumat:** *Piesa a aparținut lui Emil Witting, cunoscut publicist și vânător și a intrat în anul 2022 în colecția Muzeului Cinegetic "August von Spiess" din cadrul Muzeului Național Brukenthal.*

*În articol este prezentată descrierea piesei, starea de conservare, vizualizarea prin microscopie optică a blănii de lup, intervențiile efectuate de conservare- restaurare.*

**Cuvinte-cheie:** *Haină din blană de lup, Emil Witting, conservare, restaurare, microscopie optică.*

### a. Introduction

The wolf fur coat donated to the Brukenthal Museum by Hans-Joachim, belonged to his great-grandfather, Emil Witting and was dated 1930.

Emil Witting (1880-1952) was a forestry engineer by profession. In 1908 he settled in Sibiu. His publishing and literary activity (hunting literature) is complex, making his writing debut in 1928. He was a lover of nature and a passionate hunter. Under the name of the Witting Collection (Doltu, 1998, 254), 230 of his trophies acquired during hunting forays have been exhibited at the 'August von Spiess' Hunting Museum in Sibiu, opened to the public in 1966, the first museum with this profile in national level (Witting, 2021, XXVII).

### b. Description of the piece

It has the following physical characteristics: dimensions L= 920 mm, W= 700 mm and height 370 mm

It is hand-sewn and machine-made. its realization involved a complex work in several stages, namely: the selection and matching of pieces of wolf skin according to quality and colour, individual cutting of the wolf skin to the appropriate size and shape, sewing the wolf skins together on the special

machine sewing the fur, moistening the wolf skins to flatten the seams, bringing the pieces to the shape of the patterns, assembling the landmarks, assembling the lining of the coat and finally finishing.

The piece is represented by a man's coat, made of wolf fur. It has a classic cut, it is of medium length with a vertical closure in the front. The back is straight. It has two side pockets, with an opening of 17cm. and a simple collar, cut from two pieces. (Fig.1)

The closure is done in 3 points with buckle fasteners, namely: 3 pairs of buttons, oval, 4 cm., with double thread, black, 16 cm. and fixing ornament, 4x3cm., from the same thread.

The coat is lined with khaki coloured fabric. It features a leather hanger (in the form of a braided cord) attached to the middle of the back neck cut. It has 2 chest pockets with lids positioned on the left and right side.

The fur has a variety of colours from light (yellowish) to dark brown (Chiriță, 1985, 169). The hair is well fixed. The two layers of hair can be seen: a dense lower layer with thin and dense short hairs and the upper layer with long hairs.

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The coat has a collar made of wolf fur on the front and fabric on the back, identical to the lining, greenish grey - khaki. On the back, left side, the collar, has a 12.5 cm long and 2.5-3.5 cm wide textile strap, fixed by buttonholes with 2 round, brown buttons, sewn to the collar. On the back, right side, an identical button is sewn.

The sleeve is long, measuring 62 x 24 cm.

### **c. State of conservation**

State of conservation: the piece shows physico-mechanical and physico-chemical degradation:

- light deposits of dust and fatty substances
- stiffening and dehydration of the skin with fur in the assembly areas
- fragile and aged assembly thread!
- discoloration of the textile material of the lining (Fig. 2)
- small areas with total loss of hair from the collar, on the edge, at the end of the sleeves or in the pocket area due to functional wear (Fig. 3, 4)
- assembly thread losses: the head area of the right sleeve on a portion of approx. 5-6 cm, the assembly area of the side seam under the arm of the left sleeve of approx. 3-4 cm, the bottom left pocket of approx. 5-6 cm, left side edge approx. 2-3 cm (Fig.5), two closing buttons with detached fixing ornament (Fig.6)
- inadequate interventions in the assembly area of the fur collar and lining (Fig.7)
- there is no smell of naphthalene or other substances against biological pests
- does not have moving parts, holes or traces of biological attack
- loss of shape of the piece

The study by optical microscopy of the surface of the wolf fur coat. Photomicrographs.

Areas on the wolf fur coat surface were subjected to the study by optical microscopy, at different magnifications to evaluate the state of preservation. Details of the examined areas appear in the photomicrographs.

Detail of the edge of the coat (Fig. 8) in which the appearance of the skin surface and details of the hairs in the respective area are visible (Fig. 9) and (Fig. 10)

Detail of the seam on the edge (Fig. 11) in which the way in which the seam is worked and the thread with which it is made is visible. Details of the hairs (Fig. 12).

Details of the surface of the leather edge (Fig. 13) and (Fig. 14) in which the appearance of the characteristic hair follicles of the skin type is visible.

### **d. Restoration interventions**

The principle of minimum intervention was respected. Work was done on the entire piece, without detaching the fur from the lining.

For this reason, the access to the back of the fur is blocked for accurately assess the state of preservation of the thread and the skin of each cut and assembled piece.

The hair from the fur and the lining were examined visually, with a magnifying glass and microscopically. The interventions took into account the meaning and properties of hair (Kite, 2006, 141-169)

Some of the owner's interventions have been preserved, being considered as part of the piece's history (e.g. left pocket).

The restoration interventions applied were: cleaning tests, dry cleaning, wet cleaning, refixing areas with tears respecting the sewing holes, refixing the closing buttons (where applicable). (Fig. 15-21)

Materials and substances needed: distilled water, neutral pH detergent, brushes and brushes, mini vacuum cleaner and vacuum wave, straight and curved needles, cotton thread, carboxymethylcellulose, textile material, filter paper

The stages of the restoration intervention were photographically documented, showing the images of the object before and after the interventions, as well as details.

### **e. Display and storage**

The display will be done under the supervision of the conservator, without tensioning the piece. The exposure will be made on a suitable support.

Storage is done in a horizontal position. Microclimate conditions - must be clean, stable, without major fluctuations < 5%/h, RH 45-55%, T 15 – 18 C, Artificial lighting (with cold light) 50-80 lux, UV <75 $\mu$ W/lumen.

The piece will be monitored against pests. (Conservation Institute Canada).



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### LIST OF ILLUSTRATIONS

1. Before restoration
2. Detail of the discoloration of the textile material from the lining and the change in the shape of the pocket cover
3. Detail of hair loss in the pocket area
4. Detail of hair loss at the end of the sleeve
5. Detail of assembly thread losses on the left side
6. Detail of the closing button with the fastening ornament detached
7. Detail of inadequate interventions in the area of assembling the fur collar and lining
8. Detail of the edge of the coat, photomicrograph 20x
9. Detail of hairs, photomicrograph 20x
10. Detail of hairs, photomicrograph 80x
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1.

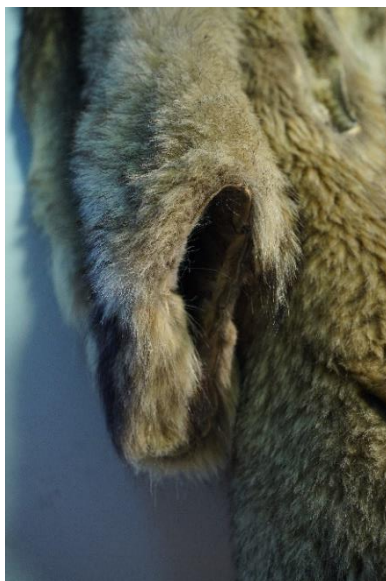


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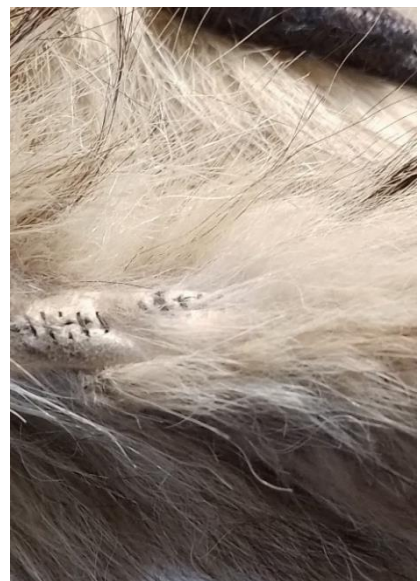
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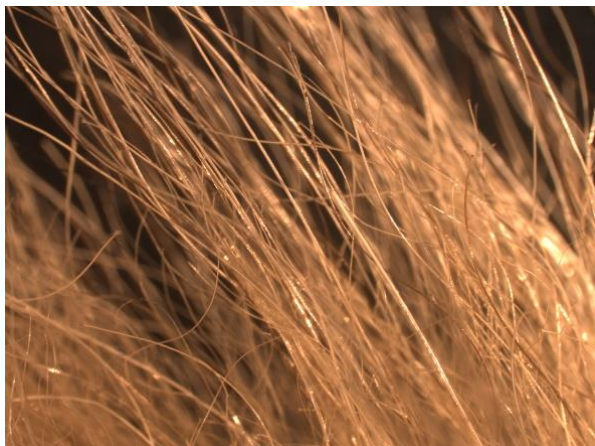
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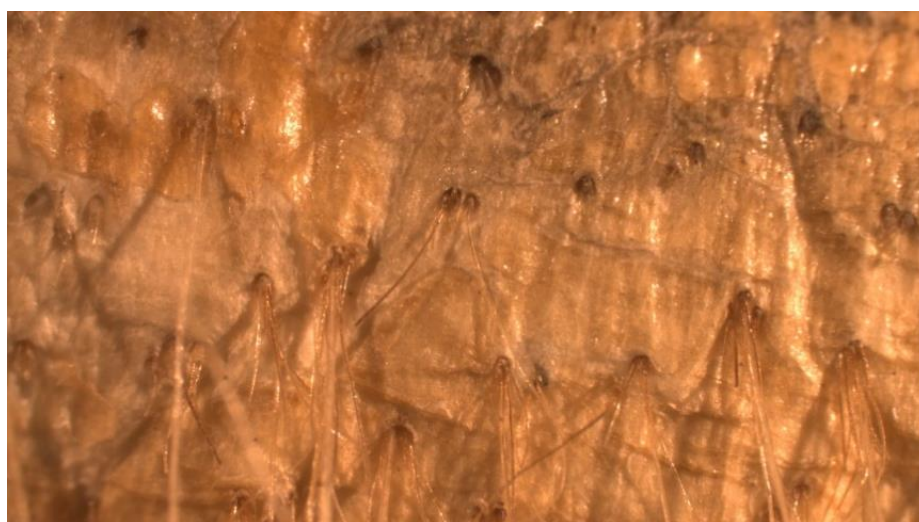
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15. Pocket detail before restoration



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17. Detail, before restoration, thread loss under the left sleeve arm



18. Detail, after restoration, thread loss under the left sleeve arm





19. Detail of intervention during the restoration



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20. Jens Kröger in the Anatolian carpets exhibition in Berlin (2006).



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## Restoration of the Painting "Portrait of a Woman"

Alexandra Maria GOȘNESCU\*

**Abstract:** *The presented work is a Portrait of a Pregnant Woman, made by the painter Franz Neuhauser jr. On the neutral background of the painting, a remarkable image of a pregnant woman stands out clearly, a work of reference for the first stage of the painter's creation, it still preserves, significant for his artistic formation, the echoes of the late, provincial Transylvanian Baroque, which carries a certain local specificity. Although Franz was a lover of landscapes this time, he chose to leave a neutral background to focus on the beauty of the character. This portrait belongs to Anna Schreiber, wife of Simon Schreiber, and is more lightly executed than other portraits of the artist.*

**Keywords:** *Portrait of a woman, Neuhauser, Brukenthal, Painting.*

**Rezumat:** *Lucrarea prezentată este un Portret de femeie însărcinată, realizată de pictorul Franz Neuhauser jr. Pe fondul neutru al tabloului se profilează net o imagine remarcabilă a unei femei însărcinate, lucrare de referință pentru prima etapă a creației pictorului, păstrează încă, semnificative pentru formarea sa artistică, ecourile Barocului Transilvănean tardiv, provincial, care comportă o anumită specificitate locală. Deși Franz era un iubitor de peisaje, a ales de această dată să lase un fond neutru, pentru a se concentra pe frumusețea personajului. Acest portret îi aparține Annei Schreiber, soția lui Simon Schreiber și este executat, mai lejer, comparativ cu alte portrete ale artistului.*

**Cuvinte-cheie:** *Portret de femeie, Neuhauser, Brukenthal, Tablou.*

### Introduction

Franz Neuhauser was born in Vienna in 1763, being the eldest of the four sons of the Viennese painter Franz Adam Neuhauser (1734-1785) (Julius Bielz, no. 1-2, 1956, p. 325-329). He started in drawing and painting, then followed a year, together with his brothers, at the Academy of Art in Vienna, where he studied according to the rules of ideal proportions and learned classical landscape composition. In 1783, the Neuhauser family settled in Sibiu, they made a very important contribution to the evolution of local painting both through the work of the elderly Franz Adam Neuhauser and his sons Joseph, Gottfried and Johann, but especially through the work of the eldest, Franz Neuhauser (Julius Bielz, no. 1-2, 1956, p. 325-329).

In the creation of the artist Franz Neuhauser, all types of landscapes are present, from which the Transylvanian landscape will evolve: from barely sketched landscapes and portraits, to well-individualized landscapes and from the city landscape, of the veduta type, the documentary landscape, to the landscape itself standing, in a plastic vision based on the direct observation of nature. Keeping the proportions, Neuhauser can

be considered the founder of Transylvanian landscape painting, his ideas and style marking all the Transylvanian landscape painters of the 19th century, for a long time constituting a starting point for the work of his followers (Iulia Mesea, 2011, p. 60). In this way, Neuhauser made the transition from the imaginary landscape in the background of the portraits to the realistic and autonomous landscape.

The influences that Neuhauser received in his landscape creation are very diverse. At the Vienna Academy, where he studied for a year, a model that became almost a template was practiced, originating from the classicist landscape of the descendants of Nicolas Poussin and Claude Lorrain and taken over by the Viennese painter and teacher Johann Christian Brand (Michael Krapf, Johann Christian Brand. 1983, pp. 1-19.). Under his influence, Neuhauser's landscape conception will be formed, although he does not reach the practice of the Austrian painter's last landscape visions, which approach a landscape much closer to nature.

In the collection of European paintings in Sibiu, Neuhauser encountered the creations of Dutch landscape painters from the 17th and 18th

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centuries, whose imprint is easily recognizable in many of his works, especially through the compositional scheme of the plans successive horizontals seen through a frame of trees and animating the landscape by combining genre scenes.

### **Description of the work**

Now let's return to the Portrait of a Woman, the year of which is unknown, but a note with the year of purchase, 1921, was found on the back of the work.

The woman portrayed is Anna Schreiber, wife of Simon Schreiber, and is three-quarter length, seated on a chair by a small table, and dressed in Empire fashion. The gloved left hand, rests on the table on which the other glove is placed, and with the right hand he discreetly marks the belly holding a rose in his lap. The rose here symbolizes beauty and elegance. The pink rose symbolizes femininity, refinement and elegance. On her head she wears a sophisticated hat according to the fashion of the time. Around her neck she wears a pearl necklace. At the waist she has a black and gold belt that is fastened above the load in order to give shape to the waist.

The character is presented in semi-profile, and her finesse and beauty is rendered by the shape of her face, which is elongated, and the color scheme is dominated by pale pinks and beiges. Another element that stands out are the eyes, a brown that gives the feeling of depth. The facial execution is cleanly done, the character's expression being soft and gentle with a slightly cheeky smile on her lips and gaze. The centers of interest of the image are emphasized by a lighting and pictorial treatment of great finesse, the painter using a limited color range. Earths, red, white, green, black and yellow.

### **Conservation status**

The state of conservation of the work before the restoration was poor. The work was previously restored, but the year is unknown. The chassis was made of resinous wood, the type of joint is called mitered bridle joint. The sides of the chassis had holes due to the nails. There are tensioning wedges, but their size is too small to properly tension the canvas on the chassis. The chassis was poorly executed, as it did not have a withdrawal slope. Because of this, its outline was printed slightly in relief on the surface of the pictorial layer. Due to aging, the original cloth has lost its flexibility and acquired a rigid

appearance. The doubling cloth had a dense grain, having 13 warp threads and 13 weft threads per cm<sup>2</sup>, being mechanically made. The surface of the canvas has lost its flatness showing a deformation in the upper right side as a result of pressure applied from front to back. Due to the lack of a retreat slope at the chassis level, the surface of the canvas had perimeter deformations that reproduced its shape. The primer layer showed gaps on the surface of the painting, on all edges, especially on the upper and lower sides, where we encounter large gaps. Aging cracks could be observed on the entire surface of the painting (fig. 1). A grid of crackles specific to oil painting on canvas. Their magnitude is greater in the area where the canvas did not come into direct contact with the chassis. The varnish was browned and yellowed with age. (Fig. 2)

### **Photographic study**

Observing and researching the work, before any intervention, is a particularly important moment in the restoration process. At this stage, the work is studied and "turned on all sides" with great care, starting with observation with the naked eye or with a magnifying glass, continuing with examination in direct light, raking light, transmitted light, I.R. and U.V., until its exposure to X-rays or gamma. In the frontal light, with the naked eye and with a magnifying glass it was possible to observe dust, superficial and adherent dirt, punctures and cracks. In the radiant light, the manner of brushwork, the thickness of the pictorial layers, the loss of flatness of the canvas and the network of cracks were observed.

#### **Restoration methodology**

The mechanical cleaning of the painting was carried out with the help of soft brushes of different sizes and with the help of a vacuum cleaner.

Due to degradations at the level of the pictorial layer (cracks, cleavages, detachments) it was necessary to take some measures to protect the surface of the painting. This operation consists in gluing a sheet of special, fine, natural or synthetic paper to the surface of the painting, intended to provide a temporary protection of the pictorial layers. This facing intervention can be total or partial. The entire surface of the work was reinforced prophylactically because the stratigraphy, especially in the peripheral, marginal area, was at risk of being lost.

Due to the fact that the chassis was not made properly it was removed after securing the painting layers with Japanese leaf.

Old textile supports are generally doubled, reinforced on the back with another cloth intended to ensure the stability of the support over time. This cloth must be removed when the dubbing is poorly executed, other accidents occur, or it no longer fulfills its function.

The removal of the duplicating cloth was carried out starting from the four corners and from the edges, always keeping the cloth in contact with the table over its entire surface. The peeling was carried out from close to close, with one hand pulling on the doubling cloth and with the other hand pressing on the painted cloth (fig. 3).

After removing the duplicating canvas, I moved on to cleaning the back of the original canvas. This operation was carried out mechanically, with the help of scalpel, brush and vacuum cleaner.

After removing the duplicating cloth, the operation of duplicating the cloth followed. The duplicating cloths are intended to stabilize the original textile support and help to strengthen the painting. They have a grain similar to the original cloth or finer and are made from a fabric of natural fibers (linen, cotton, hemp) as close as possible to the material of the original fabric.

After removing the work from the doubling table, it was moved to its anchoring on the new chassis. The new chassis was made with drawbar, cross members and tension springs. The anchoring of the painting on the chassis was done with the help of metal staples.

The removal of the Japanese leaf was done with the help of cotton pads placed on a wooden stick and moistened in lukewarm water.

To strengthen the primer layer, I used an 8% rabbit glue solution. The glue was impregnated on the gaps with the help of a small brush that had previously been impregnated with an alcohol solution. The role of the alcohol is to prepare and permeabilize the area to be brushed with glue. Over the areas impregnated with glue I returned with a thermal spatula by pressing at a temperature of approximately 65-70°C. Between the thermal spatula and the painting layer I inserted a film of Polyester Film (Melinex) with the role of protection and so that the primer does not stick to the spatula. After the thermal treatment, sandbags were placed on the respective area, acting as compresses. It should be noted that under the painting, in order not to create tension and not to imprint the shape of the chassis on the painted surface, I inserted marble slabs of a thickness equal to that of the chassis.

To clean the painting, I performed seven tests, on different areas using solvents in different concentrations (fig. 4, 5). I started the cleaning from the lower area to the upper one. After a more insistent cleaning, in the knee area I noticed a layer of old, coarse putty that needed to be removed. After removing it I noticed that the original canvas was torn in that area (fig. 6).

After cleaning the painting, the grouting operations followed. In each gap I put rabbit glue with the help of a brush, to fix the putty for as long as possible.

After the applied putty was completely dry, I proceeded to sanding it. Excess putty was removed using the scalpel, cotton swabs dipped in warm water and the cork stopper. With circular movements I tried to bring the putty additions back to the level of the original pictorial layers.

The chromatic integration in watercolor colors of the painting was carried out on the gap areas in the pictorial layer, already grouted and sanded, using a thin brush with a sharp tip. The imitative technique was used (fig. 7).

After integration, the painting was left to dry for 24 hours.

The general varnishing was done with a touch-up varnish (Damar) of 20% concentration, dissolved in turpentine solution. The varnish was applied by brushing, using a wide and flat brush made of artificial hair, over the entire surface of the painting (fig. 8).

Chromatic touch-up involved the integration of varnish colors dissolved in ethyl alcohol and soaked in the varnish before application. The reintegration must be visible, but give unity and balance to the restored work, reconstitute, but by methods as close as possible to the artist's, so as not to become a fake. Retouching must be strictly limited to the edges of the gap and not overlap with the artist's touches.

Aerosol varnishing is the last step in the painting restoration process. This is the final varnish and is done with Damar aerosol varnish containing a 16% ketone resin distilled in 49% petroleum. This last layer has a particularly important role in protecting the pictorial layers from microclimatic factors and preventing any harmful elements from the atmosphere from acting on the stratigraphy of the work (fig. 9).

## Conclusion

For the restoration of the painting, a series of Physico-chemical investigations were made, based on which the state of conservation before



the restoration was established, as well as the previous restoration interventions. The restoration of the oil on canvas painting "Portrait of a Woman" by Franz Neuhauser, from the Brukenthal National Museum collection, gave me the opportunity to research and apply a diverse range of techniques and working strategies. I can say that it was a challenge from multiple points

of view, but with a spectacular result. Although the work does not present degradations that would have endangered its artistic integrity, its appearance has been improved following the restoration interventions.

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1.



2.

1. Old age cracks before restoration, photo by Alexandra Goşnescu
2. Aged and browned varnish, photo by Alexandra Goşnescu



3.



4.

3. Peeling off the folded canvas, photo by Alexandra Goşnescu
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5. Assembly of cleaning tests, photo by Alexandra Goşnescu





6. Detail of torn canvas, photo by Alexandra Goşnescu
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9. The work after restoration, photo by Alexandra Goşnescu

## RESTORATION OF THE ICON ON GLASS *BURIAL OF JESUS*

Alina Geanina IONESCU \*

**Abstract:** *The icon on glass Burial of Jesus, icon from Valea Sebeşului, dating from the second half of the 19th century was analysed from the point of view of its state of conservation, chemical and biological investigations were carried out and the documentation for the restoration was prepared. The existing degradations were caused by the passage of time, storage conditions plus inappropriate handling and mechanical shocks. The restoration interventions respected the principle of the minimum intervention. In the process of restoration were involved students from the Conservation and Restoration Specialization within the History, Heritage and Protestant Theology Department, Faculty of Social and Human Sciences, „Lucian Blaga” University of Sibiu.*  
**Keywords:** *Burial of Jesus, icon on glass, consolidation, restoration, recovery.*

**Rezumat:** *Icoana pe sticlă Îngroparea lui Iisus, icoană din Valea Sebeşului, încadrată în a doua jumătate a secolului al XIX-lea, a fost analizată din punct de vedere al stării de conservare, s-au efectuat investigații chimice și investigații biologice și s-a întocmit documentația în vederea restaurării. Degradările existente se datorează trecerii prin timp a icoanei, condițiilor de depozitare și manipulărilor inadecvate, șocurilor mecanice. Intervențiile de restaurare au respectat principiul minimei intervenții. În procesul de restaurare au fost implicați studenți de la Specializarea Conservare și Restaurare din cadrul Departamentului de Istorie, Patrimoniu și Teologie Protestantă, Facultatea de Științe Socio-Umane, Universitatea „Lucian Blaga” din Sibiu.*  
**Cuvinte-cheie:** *Îngroparea lui Iisus, icoană pe sticlă, consolidare, restaurare, valorificare.*

### Introduction

The icon on glass *Burial of Jesus* (Fig. 1), inv. no. AL 8107 (Fig. 2) is part of the ASTRA Museum Collection. The size of the icon, including the frame, following the measurements is between 41.2-41.8x47.2-47.3 cm and the size of the icon without the frame is 32x37.5 cm.

As previous interventions identified on the icon on glass *Burial of Jesus*, we mention the cardboard lid, non-constitutive metallic nails, cord hanger, the existing glue on the two fragments that make up the ensemble of the icon, the existing glue on the constitutive silver paper, torn in two fragments.

We can see the chromatic sophistication and the harmony of colours. The chromatics used on the glass: black, grey, green, red, ochre, pink, white, red brown. The frame of the icon is rendered in hues of dark brown and red brown.

**The state of conservation** of the icon before restoration was conditioned by the ageing of the materials<sup>1</sup> and the faulty conservation (Fig. 3-4). The degradation factors have led to the apparition of cracks in the structure of the frame, to small losses of wood

material, functional wear, superficial and adherent depositions. We mention the existence of a mobile gnarl in the structure of the frame (right wand – vue from front) and presence of inactive attack of boring insects *Anobium punctatum* inside the frame. Considering the inactive attack of boring insects, the frame of the icon does not require insecticide treatment.

The icon has a cord hanger, added at a later time. The cardboard lid, added subsequently, was mounted with non-constitutive metallic nails. The frame is unstable and the glass is broken into two fragments.

The most frequently encountered degradations were the ones that affected the silver paper which makes up the background of the icon and which presents superficial adherent deposits, halos of humidity, significant tears and losses.

At the level of the colour film we note marginal superficial and adherent depositions, pulverulence of the colour film, colour lacunae, marginal wear due to the contact of the glass with the cavity of the frame.

**The chemical investigations**<sup>2</sup> consisted in microscopic exams, microchemical (Fig. 5) and burning

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<sup>1</sup> Bucur Mirel-Vasile, 2020, p. 779.

<sup>2</sup> According to Anaysis Bulletin No. 815/2022 – expert chemist investigator Daniela Văcariu, C.N.M. ASTRA.

tests, digital microphotographs. The microchemical analysis was performed for the pigments with similar microchemical behavior to lead red, lead white; the copper based green pigment behaving similarly to verdigris. Microchemical analysis was also carried out in order to identify the  $Fe^{+3}$  ion present in the solution (on the green pigment), through the formation of the blue coloration given by the Iron (III) Hexacyanoferrate (II) (Prussian blue). We note the existence of  $CaCO_3$  present in the sample with red pigment and the presence of the protein binder.<sup>3</sup>

### Biological investigations

Following the results of the biological analyses<sup>4</sup> in order to identify the wood essence we noted the frame was made out of fir wood *Abies alba* (Fig. 6).

### Description of the restoration operations

After having carefully examined the piece, we carried out analyses that supplied essential data for the restoration operations<sup>5</sup> that were to be made (Fig. 7-23).

The first stage consisted in removing the non-constitutive cardboard lid by taking out the metallic nails as well as the cord used as a hanger. After having taken out the lid and the non-constitutive metallic nails, the glass was removed from the frame by avoiding any and all tension.

The mechanical cleaning followed with the use of brushes, lancet, steel wool on the frame, as well as cleaning with a weak mixture of solvents, ammonia water (3 drops of  $NH_4$  in 100 ml distilled  $H_2O$ ). Enforcement of the joints in the frame was made with glue 10% fish glue.

The grouting of the frame was carried out with sawdust, 6% fish glue and pigment in the chromatic of the wood. The chromatic integration on the frame, on the areas with functional wear, was made with water-based stain.

On the margins of the glass we carried out a mechanical cleaning of the color film through light brushing, consolidation of the color film with 1:1 egg yolk emulsion<sup>6</sup> with distilled water with added preservative (acetyl-salicylic acid) and securing the color film which had lost adhesion from the support

by pressing with the help of monosiliconated polyester film.

On the margins again, the consolidation was followed by the cleaning of adherent depositions present on the surface of the color film with 1:3 egg yolk emulsion with distilled water, using cotton swabs and mechanically with the lancet. Next the unpainted area of the glass was cleaned, by removing adherent depositions with 1:3 egg yolk emulsion with distilled water and ethyl alcohol.

After cleaning and degreasing the joint area between the two fragments forming the ensemble of the icon, both fragments were consolidated with two-component epoxy resin (HXTAL NYL - 1). Upon joining the fragments, for protection, we used mono silicone polyester film and cold press (glass plates). The surplus glue was cleaned mechanically (lancet) and with solvent (acetone). Followed the cleaning of the front of the glass with swabs dipped in 1:4 egg yolk emulsion with distilled water, lancet and ethyl alcohol.

Next we doubled the front of the icon with industrial glass and secured it inside the frame with small bits of felt fixed on the groove of the frame with glue. The increased height of the frame was made with strips of felt fixed with glue on its entire width, so that the constitutive silver paper does not make contact with the lid made out of the same essence as the original frame.

On the margins, chromatic integration was made with water based colors (watercolors), for the intervention to be reversible and the materials used as close to the original ones as possible. As final operations, we mention mounting the lid made out of two boards and mounting the metallic hangers with wood screws.

### Storage recommendations

We recommend the icon on glass *Burial of Jesus* (Fig. 24-25) be stored or exhibited in an environment with relative humidity between 55-65%, temperatures between 18-20°C, without any ample or sudden fluctuations of these values and for the lighting to not exceed 120-150 lux. The piece is to be stored only after it was previously packed in two types of packages, an inner soft and chemically-

<sup>3</sup> Vlad Ana Maria, Niculescu Gheorghe, 2013, p. 52.

<sup>4</sup> According to Analysis Bulletin No. 111/2022 – expert biologist investigator Ileana Chirtea, C.N.M. ASTRA.

<sup>5</sup> Coordinating professor - expert painting restorer, Assoc. Prof. Alina Geanina Ionescu, PhD - ULBS, director of ASTRA Centre for Heritage, ASTRA Museum Sibiu; Specialised practice Year III, Sem. I, 2022-2023, Specialization Conservation and Restoration, Department of History, Heritage and Protestant Theology, Faculty of Social and Human Sciences,

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<sup>6</sup> Dancu Iuliana, 1966, p. 81.

neutral one (Japanese leaf) and an outer one (low acid cardboard).

**Conclusions:**

The internship training for the students from the Conservation and Restoration Specialization within the History, Heritage and Protestant Theology Department, Faculty of Social and Human Sciences, „Lucian Blaga” University Sibiu, an internship

training that took place within the ASTRA Centre for Heritage, entailed a thorough case study - the restoration of the icon on glass *Burial of Jesus*, collaborative learning and specialized practical activity. All of these have led to the development of the theoretical and practical knowledge accumulated in the field of conservation and restoration of the icons on glass, as well as the development of the professional potential of the practitioners.



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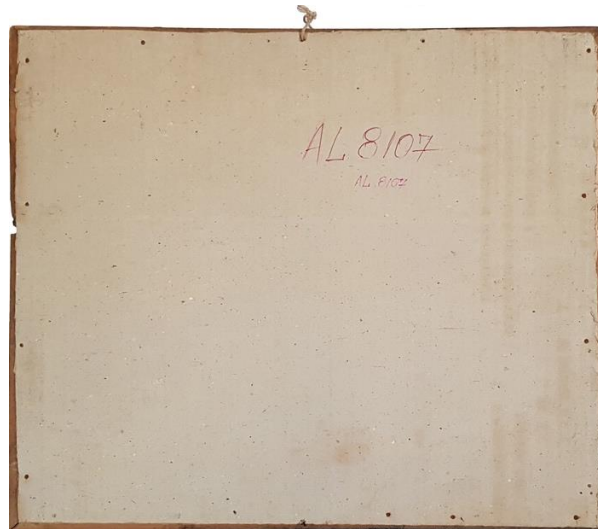
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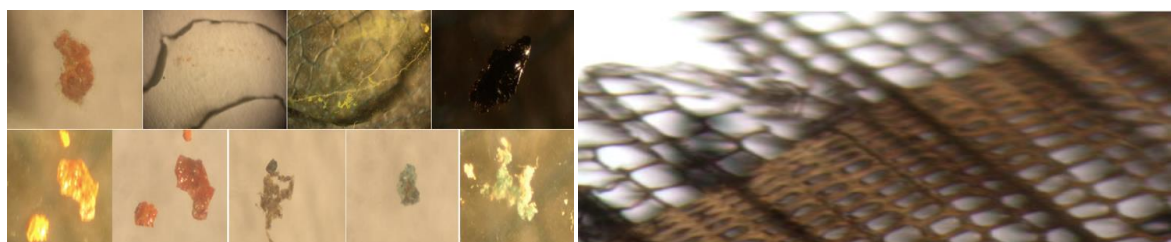
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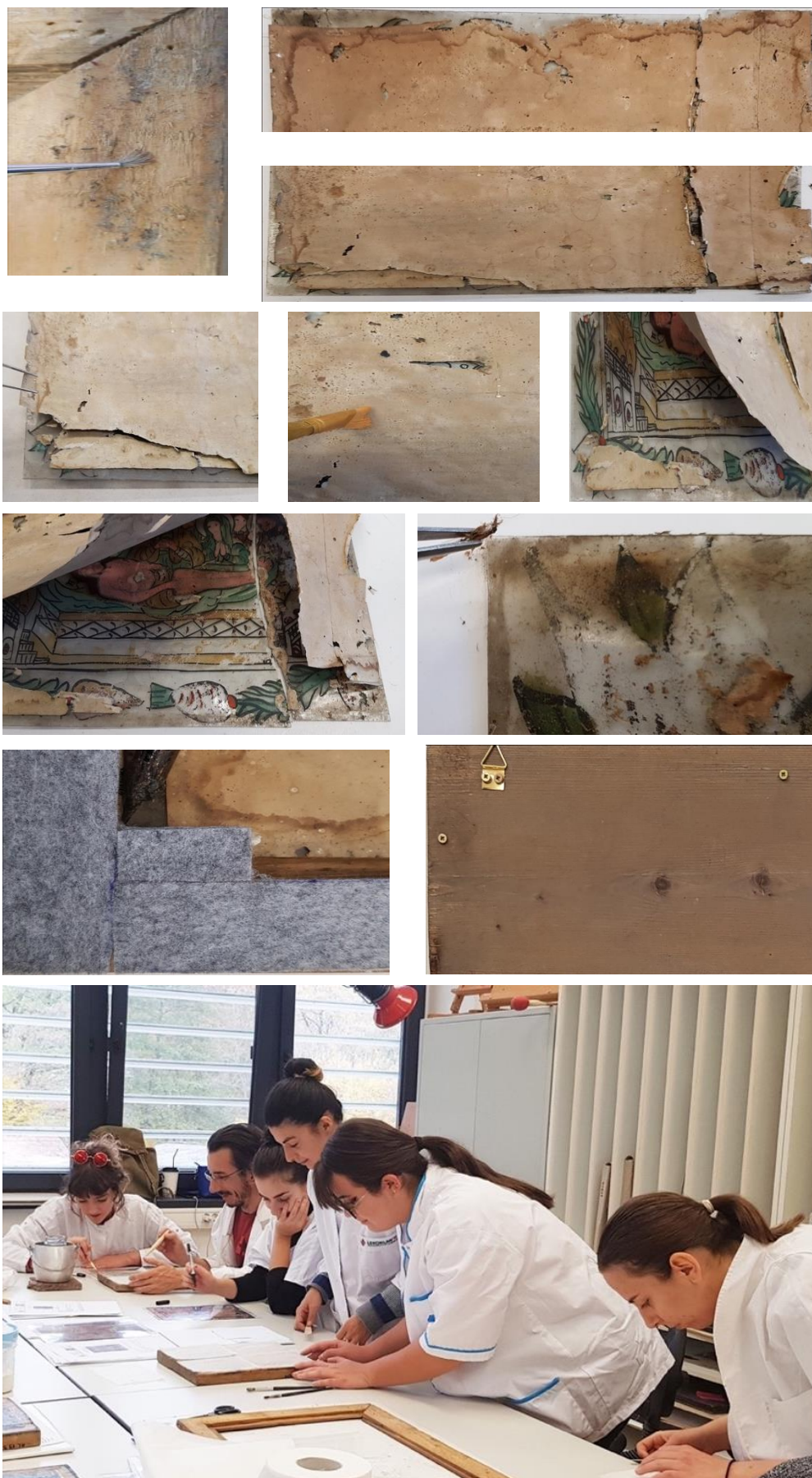


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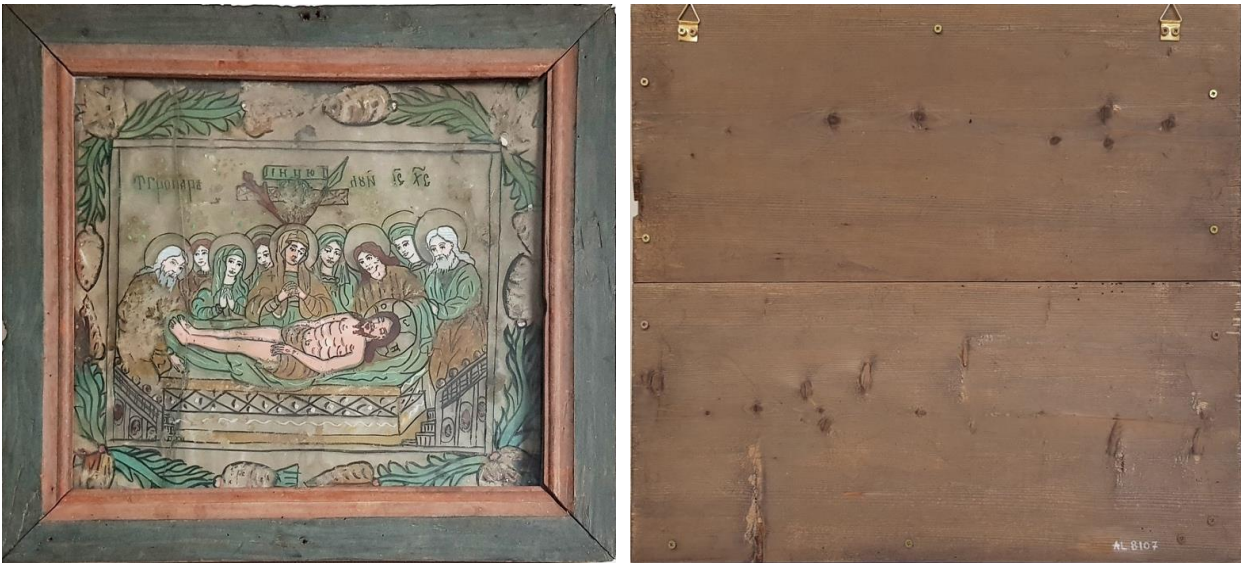
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## RESTORATION OF THE ICON „OUR LADY OF SORROWS” PAINTED BY THE TĂMAȘ FAMILY FROM THE FĂGĂRAȘ COUNTY

Paul Victor LANGA\*

**Abstract:** *The icon is a means of communication between the material and the spiritual world, being surrounded by a series of beliefs and practices, especially in the complex world of the village. Considering that the Virgin Mary was a person who made the connection between the two worlds, besides the fact that she has adoration right after the Jesus Christ, the icons that represent her as the Mother of God are very widespread. This article presents the restoration process of one of the glass icons with the theme „Sorrowful Mother of God”. The icon has reached a state of advanced degradation caused by improper storage but also by certain technical defects from its creation.*

**Keywords:** *icon on glass, Sorrowful Mother of God, Virgin Mary, Tămaș family, Făgăraș County, restoration, degradation, technical defects, painting techniques, environment, human factor.*

**Rezumat:** *Icoana este un mijloc de comunicare între lumea materială și cea spirituală fiind înconjurată de o serie de credințe și practici, îndeosebi în lumea complexă a satului. Având în vedere că Fecioara Maria a fost o persoană care a făcut legătura între cele două lumi, pe lângă faptul că are parte de o adorare imediat după Iisus Hristos, icoanele care o reprezintă Maica Domnului au o răspândire foarte mare. Acest articol prezintă procesul de restaurare a uneia dintre icoanele pe sticlă cu tema „Maica Domnului Îndurerată”. Icoana a ajuns într-o stare de degradare avansată cauzată de o depozitare inadecvată dar și de anumite vicii de tehnică din timpul realizării acesteia.*

**Cuvinte-cheie:** *icoană pe sticlă, Maica Domnului Îndurerată, Fecioara Maria, familia Tămaș, Țara Făgărașului, restaurare, degradare, vicii de tehnică, tehnici de pictură, mediu ambiental, factor uman.*

The fact that the Virgin Mary is the mediator between the heavenly and the earthly world, the choice among people as the Mother of the Son of God<sup>1</sup>, the birth above nature and her purity (the Immaculate Virgin), make her, after Jesus Christ, the most revered of all saints (Morehouse 2012, 73). Thus, next to the icon of the Savior, representations of the Mother of God are the most widespread in iconography. Moreover, the miracles and signs shown over time leave their mark on the iconography of the Virgin, with some works becoming iconologically true legends or obvious emotional acts.

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<sup>1</sup> „For this my Lord will give you a sign: Behold, the Virgin will conceive and give birth to a son, and they will call his name Immanuel.” (Isaiah 7, 14)

„And the angel said to her: Fear not, Mary, for you have found favor with God. And behold, you will conceive and give birth to a son, and you will call his name Jesus. He will be great and the Son. The Most High will be called, and the Lord God will give the throne to David his father.” (Luke 1, 30-32)

### 1. Representations of the Virgin Mary in painting

Byzantine painters, whose art was restrictive in some ways because of the ermine tradition, left models in which emotion exceeds the canons. If in icons with themes such as the Hodigitria or the Holy Mother of God, a hieratic style of representation dominates, rendered mainly through hand gestures or the solemn posture of the characters, in representations such as Eleusis or details of the Virgin Mary in the scenes of the Passion, antithetical to the tragedy of the sorrowful face of the mother who spends her Son in the most difficult moments witnessing the torments to which he is subjected, we observe the gentleness of the mother with a bright face who tenderly holds her child to her breast or cheek. The rendering of these themes is much deeper, a fact that can also be observed in medieval painting (especially in the representation of the Passion).

If we talk about the representation of the Virgin Mary, we cannot limit ourselves in the case of the Middle Ages to episodic appearances in the Passion cycle. It is important to remember her figure as the Queen of Heaven or as a symbol of purity,



the Catholic rite having her in the foreground from the perspective of her worship.

The Renaissance will come with a significant input through representations of the Virgin under various sumptuous and divinized guises. Sometimes her garments depict her like ordinary women (as in the case of *Our Lady seated on a Chair* by Raphael Sanzio). In this regard, a reflexive aspect should be remembered (which of course does not necessarily make the subject of this article but in the context we consider it important to remember), if this representation in clothes similar to ordinary women was to show the human nature of the Virgin or to raise the woman to a higher rank out of respect for her as a being and the contribution made day by day to those around her.

## 2. To transmit and transcend. Image and icon

We cannot discuss an image without at least making some assumptions about the idea behind its creation. The idea is perhaps an understatement, considering that a creation is often not driven by a thought alone, but the thought itself is determined by a number of factors that cause it to mediate towards a purpose.

In general, the role of the image is to convey a message. From here, depending on the connotations we want this message to have, a series of emotions manifested through the different elements of plastic language are involved. In a deeper sense we will look for what generates these emotions, how they develop, if they are perpetuated and in what way. Thus, we reach a conclusion that places us on a two-way road: on the one hand, the image is a finality because through the very representation of the image the emotion is concretized, and on the other hand, it is a bridge in time because the image is a record of a more or less current moment and acquires documentary value.

More or less vibrant touches, spots, brush marks, lines, dots that are or become like a whole character of a story meant to convey a message. Not infrequently I have admired a genre scene, a portrait, a view, or a still life, and felt a thrill of emotion conveyed by the technical mastery of the artist behind each work, and by those who have preserved their character intact. At that moment, we were always aware that we were in front of a memory, a history, a legend or a love story, wars, decisive moments or even intrinsic struggle, breath, sadness, melancholy or of the joy conveyed indirectly through those technical details we were discussing earlier and which, perhaps, today, stylistically and technically, are no longer used in the

same way? This is where the documentary value of an image comes into play.

If the outward manifestation of the inner intangible part of emotions has been clarified, the path will continue, as promised, through the search for what generates these emotions.

We can say that in fact at this stage creation reaches its immaterial peak because something material does not necessarily intervene anymore, but the essence. Another world, the soul, with all its desires, upheavals and fulfilments. We notice that all these are not the object of something material, they only use the material things. The influence on these elements takes place on a spiritual level, involving affection and reason. From here everything materializes in a process of reflection on a fact or an object, which leads to the formation of the idea. In the end, this immaterial idea, loaded with emotions, materializes through materiality in the image that conveys certain messages to us.

I thought this brief introduction about the birth of an image to further outline, along with what follows, the image<sup>2</sup> of the icon on the glass in relation to the beliefs and lives of those for whom they were painted.

When we talk about an icon, the spiritual part contributes the most to its realization. Compared to a portrait<sup>3</sup> or a genre scene, if we have icons depicting a celebration for example, the difference appears the moment we stand in front of the creation<sup>4</sup>.

In our opinion, if we consider the whole theology and dogmatics of icons, we can see those icons, in relation to another work of art, not only transmit, but also receive messages. The most obvious argument is the one brought in 784 at the Council of Nicaea when the cult of icons was restored: „*For the honour shown to the image goes up to its prototype, and he who venerates the icon actually venerates the person represented by It. This is, indeed, the teaching of our Holy Fathers, this is the Tradition of the Holy Synod Church which spread the Gospel to the ends of the world.*” (Uspensky 2006, 62). The Holy Tradition is also mentioned in the same Synod. Leonid Uspensky

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<sup>2</sup> Figuratively speaking.

<sup>3</sup> Without considering it inferior because this too, any person would render, illustrates a model (literally and figuratively).

<sup>4</sup> We chose this term because every work of art, but especially the icon, is a product born under several auspices that not infrequently exceed the measurable limits of human knowledge and consciousness.

says of this that it is „*the life of the Church in the Holy Spirit, Who shares with each member of the Body of Christ the faculty to hear, perceive and recognize the truth in its own light, and not in that of human understanding*” (Uspensky 2006, 63) and „*the faculty of knowing the truth in the Holy Spirit, is the sharing of man with the «Spirit of truth» that fulfils the fundamental calling of the Church: the awareness of the revealed truth, its capacity to distinguish what is false from what is true, in the light of the Holy Spirit*” (Uspensky 2006, 63). The same Synod also mentions the fact that the existence of icons is based on this Holy Tradition<sup>5</sup> (Uspensky 2006, 63). Thus, we observe that the dialogue held by the viewer does not take place in the sphere of „*human understanding*”, („*the honour shown to the image rises to its prototype*”), but in the „*light of the Spirit of truth*” shared with man.

### 3. Mother of God in rural traditions and beliefs

The large number of icons on glass, especially from Transylvania, compels us to admit or at least to reflect on the fact that this call that is spoken of by „*sharing with man the «Spirit of truth»*” was very present in the house of the Romanian peasant, the Christian tradition of the Church collaborating with the popular traditions of the village and the heritage of the ancestors.

In addition to the fact that each saint represented in the icons had a certain power over the owners' family or their house<sup>6</sup>, the icon itself was connected to household objects. For example, it is said that the table was given to man so that he could eat at it and not in another place (Niculiță-Voronca 1998, 205), there are also certain norms for its arrangement in space and the behaviour approached while eating: the table should be „*under the icons, at sunrise*”, the man should wash his hands when he sits down at the table, make the sign of the cross when he sits down and when he gets up from the table, and „*you must not stand up at the table, but to sit down and eat, because Christ sat at the table and we must do the same*” (Niculiță-Voronca 1998, 206). In the conception of the simple man from the village, God is a model of wisdom and good behaviour (Antonescu 2016, 232). The religious-secular cooperation of these traditions has in par-

ticular the role of ensuring balance in the daily life of the peasant who tends to be in communion with God who helps him in the various occupations he undertakes. Thus, for each saint or holiday we encounter numerous traditions and popular beliefs.

Wednesday, day who is said to be a woman, is dedicated to the Mother of God (Niculiță-Voronca 1998, 226). Also in popular beliefs, the protective maternal side of people is not only reflected in the status of a woman and her purity<sup>7</sup>, for which God gives harvest and bread, but also in the possession of the earth where they come from (Niculiță-Voronca 1998, 133). It is also remembered that the icons with the Mother of God were also used in some rituals in the house or outside the church. Processions were made for rain, in case of drought, icons of the Mother of God were thrown into the water, or washed with basil by boys and girls for luck in love, and from the flax that was offered to the priest at the Epiphany, it is said that the Mother of God makes a net in Heaven with which she saves the souls of sinners from Hell at the Last Judgment (Marian 2015, 223; Pamfile 2018, 162).

From an iconographic point of view, in Transylvanian glass painting, Byzantine canons harmoniously intertwine with international stylistic influences but also with popular beliefs and motifs. Through the honest hand of the painters, the icons on the glass become true guides for them and equally for their families or people from their village or country, but also important documentary testimonies that have remained for us regarding the style and technique of painting.

Except for feast scenes, the Mother of God appears in Transylvanian glass icons as Empress, Guide, Merciful, crowned by the Holy Trinity, and Sorrowful. If the first three themes are of Byzantine origin, the last two reach Transylvania through the Catholic way (Rustoiu *et al.* 2008, 7). The naive drawing and the restricted chromatics adapted to the rendered theme often give the image simplicity and solemnity involving the viewer in the action and state of the illustrated characters, the painted glass becoming a transition space between the material and the spiritual world.

### 4. Restoration of the icon „Our Lady of Sorrows”

The restored icon has as its theme the Sorrowful Mother of God also known as the Mournful Mother of God (Fig. 1). The style in which the drawing is made, the chromatic approach and the way in

<sup>5</sup> It is important to mention that it is the Tradition of the Church.

<sup>6</sup> Christ, the Mother of God, Saint Nicholas, the Archangels – protectors of the family and household; Saints George, Demetrius, Theodore – protectors of soldiers; Saint Elijah – protector of sowing; along with other patron saints of the seasons, etc.

<sup>7</sup> Model for girls and women to keep their purity.

which the frame and the cover are made lead us to attribute it to the painting centre Făgăraș County, and as the author, to the last painters from the Tămaș family<sup>8</sup> (Langa, 2022a, 647).

The Mother of God is depicted on the right side of the composition, facing the centre of the image. She is dressed in a black maphorion with a green lining (decorated with white accents and red lines or dots), embroidered on the edges with a yellow border on which various stylized motifs (haulm and other phytomorphic elements) are found. On the head and in the shoulder area you can see three yellow floral elements framed in orange circles, the symbol of the Virgin's purity<sup>9</sup>. An interesting element<sup>10</sup>, rarely found in glass painting on the Virgin's garments, is the anthropomorphic figure present on the left shoulder. The tunic below the maphorion is red, as is the halo with white accents, which frames the head in the form of a strip. The face painted in white colour slightly altered with a warm shade with cherry shadows is framed by two curly locks of brown hair. The small mouth rendered only the upper lip in bright red, together with the black eyes and remembered complexion give the sad face an air of sadness, resignation and reflection. In the lower part of the figure of Mary, the hands are joined in prayer, with the little finger of the left hand extended as if to support the maphorion.

In front of the Mother of God, more precisely in the lower half on the left side of the composition, is Jesus Christ crucified on the cross. On the tall red cross the figure of the Saviour seems rather stiff in representation. The element that gives a slight dynamic to the body is the flexion of the legs fixed on the lower rail. Christ is depicted below the historical face, with a crown of thorns on his head, his face framed by a halo, and a red cloth around his waist. In the upper end of the axis of the cross is marked the inscription *INRI*. The figure of Christ crucified on the cross is arranged on a background consisting of alternating green and reddish orange colours in a light shade, at the base of the cross being a blue area. Broadly speaking, we can asso-

ciate these colours with holiness (blue), sacrifice (reddish orange) and resurrection (green).

In the upper half of the image, on a blue background on which are painted white and red stars framing the inscriptions of the Mother of God, are painted from left to right, in the first quarter the Ancient of Days and the Holy Spirit, and in the last quarter two angels.

The Ancient of Days, recognized by the triangular halo framed by the circular nimbus, is painted three-quarter length, with long black hair and beard, in a long red tunic. The right hand oriented towards the Virgin Mary overlaps with the left which seems to be directed towards the Saviour. His face is painted towards the Virgin but his eyes are directed towards the viewer. Above the two figures, blowing tongues of fire, the Holy Spirit descends in a white triangular halo with a yellow border.

On the opposite side, on a cloud, are painted angels dressed in red tunics, displayed as busts, with young faces framed by long brown hair and yellow wings. Their gazes are directed upward in an imploring attitude, as if leaving the scene.

The entire composition is framed by a border formed by a succession of semi-circular elements alternating green and red (with white accents on their form) and yellow (with crossed orange accents).

Following the preliminary research for the restoration interventions, a series of degradations of the piece were identified, caused either by the microclimate in which the icon was kept, or even by certain defects in its execution technique.

Dust deposits, cobwebs and other types of surface dirt were identified on the cover because of improper storage. Also, the metal nails intended for fixing the frame cover led to fissuring and even cracking of the planks in certain areas where tensions appeared because of the swelling or contraction of the wood (processes that also contributed to the spacing of the planks) (Fig. 2).

The frame was also fixed at the joints with the help of metal nails, an aspect that gave us a hint for a dating of the icon in a late period of the practice of this craft. Microclimatic factors and inadequate storage led to the development of a xylophagous attack that structurally weakened the frame slats. Exfoliation in the form of chips was observed in some areas on the face of the wands. Also, the

<sup>8</sup> For a stylistic comparison see also Paul Langa, *The restoration of an "Saint Nicholas" icon painted by the Tămaș Family from the Făgăraș County*. In: *Brukenthal Acta Musei XVIII.4*, Sibiu (2022), p. 645-652.

The painting style of the icon is similar. Similarities also exist in the degradations encountered in some of the colours used such as the yellow colour in the area of ornaments or halos.

<sup>9</sup> Virgo before birth, during birth and after birth.

<sup>10</sup> Which will be the subject of another study.

traditional empiric aesthetification<sup>11</sup> led to the formation of encrusted deposits on the entire surface of the frame and implicitly a very thin dark film.

The glass had a break on the lower right side and on its surface, especially in the vicinity of the frame, deposits of embedded dirt because of the aesthetification process and improper storage.

In the case of the colour layer, several degradations were identified in which the main factors that led to them are environmental and human. The environmental ones (temperature, humidity) led directly to the exfoliation of the layer in certain areas because of the physical actions produced by their fluctuations and indirectly, through the action on the frame and cover, to the penetration of various substances inside on the surface of the painting. The human factor contributed to the process of painting degradation through technical defects, the most substantial stiffening, exfoliation and lacks in the colour layer being observed on the black maphorion of the Mother of God (Fig. 3) (Langa, 2022b, 247, 250). The hypothesis, which materialized in the stage of consolidation of the layer, was that, in addition to the nature of the pigment, possibly a carbon black, the binder used was of an insufficient concentration compared to the nature of the pigment to make the colour layer in the respective areas resistant over time to the action of microclimatic factors.

The first interventions on the icon were to remove the outer dust and some fragments of cobwebs from the frame and the cover with the help of soft brushes. After these brushings, the covering plates were removed by taking out the metal nails with the help of pliers and metal spatulas (Fig. 5).

After opening the lid, on the inside, coarse fragments of paper were found on the edges of the glass in the vicinity of the frame and at the corners, in a rigid, compacted state, at intervals of about 10 cm from each other. This was a method<sup>12</sup> used to avoid glass move in the frame and its contact with the cap for prevent the colour layer from eroding. Larger and more flexible fragments of purple paper were also found on the surface of the painting.<sup>13</sup> Also, the entire colour layer had large deposits of dust, cobwebs and sawdust from the brittle wood (Fig. 4).

In this situation, the prophylactic consolidation of detached painting fragments and the stabilization of the colour layer in the area of the Virgin's garment became a priority. Paper fragments were removed by extraction with tweezers. If they adhered in a small degree to layer, small dabs were applied with cotton wool soaked in a little water to completely remove the paper. Then a cleaning of the deposits was carried out by brushing with the help of soft brushes in order to protect the sensitive areas without dislocating them (Fig. 7). After that followed, as far as possible, the removal of the deposits that entered under the detached fragments and finally the consolidation of the exfoliated colour areas and the feeding of the black colour layer which showed a very high sensitivity (in some areas even powder) (Fig. 8). Following the stabilization of the fragile areas, the entire layer could be cleaned and the final consolidation, as well as the levelling of the detached areas, possible (Fig. 9). Prophylactic consolidation was done with egg yolk emulsion (water-yolk ratio 3:1 with a little vinegar) and final cleaning and consolidation with egg emulsion (2:1) and Polyester Film (Melinex).

The next step was to structurally strengthen the frame and lid by injecting a 15% solution of Paraloid B72 resin dissolved in ethyl acetate.

After the structure was consolidated, the cover plates were dry-cleaned one by one with a rough brush and on the inside with steel wool. A wet cleaning was then performed with a solution of water and ethyl alcohol (90:10) with a few drops of ammonia. The same treatment was applied to the cleaning of the frame slats that were not detached because they were found to be stable in joint strength (Fig. 6).

After gluing the glass fragment, the final stage of the restoration process consisted of chromatic integration of lacks (imitative, with watercolours) and putting the icon back in the frame and fitting the cover (Fig. 10). The fixing of the glass in the frame was done with the help of pieces of felt glued to the fold of the frame with Covidez L150 to avoid its movement and the cover was mounted by fixing screws for easy removal in the event of future interventions to the interior.

### Conclusions

We think that the preservation and restoration of these icons on glass is a very important step in the research of these images which, in many cases, in addition to representing holy persons, also reveal certain aspects related to the traditions and beliefs of those who paint them.

<sup>11</sup> The habit that before the big feasts all wooden objects to be polished with lamp oil.

<sup>12</sup> The arrangement of paper fragments packed and moistened to form a compact and coarse piece.

<sup>13</sup> Probably still with the same purpose.



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1. Front and back icon before restoration.

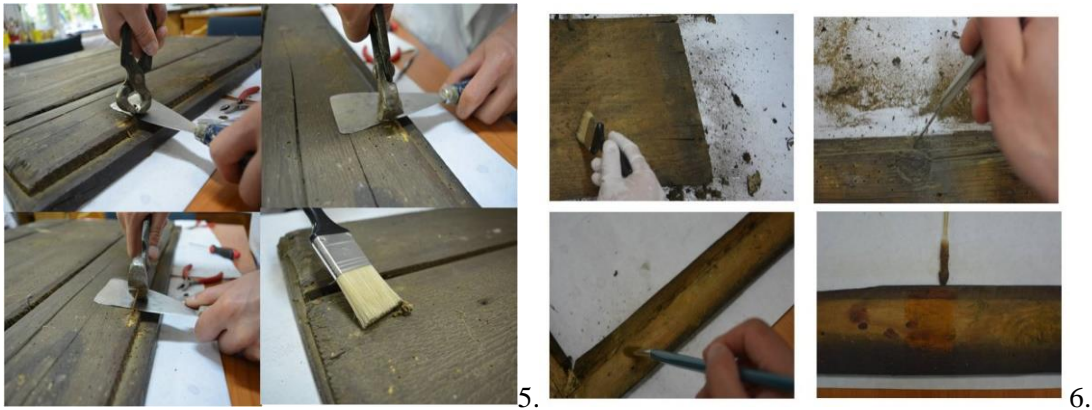


2. Cover details before restoration  
3. Details of the icon before restoration.

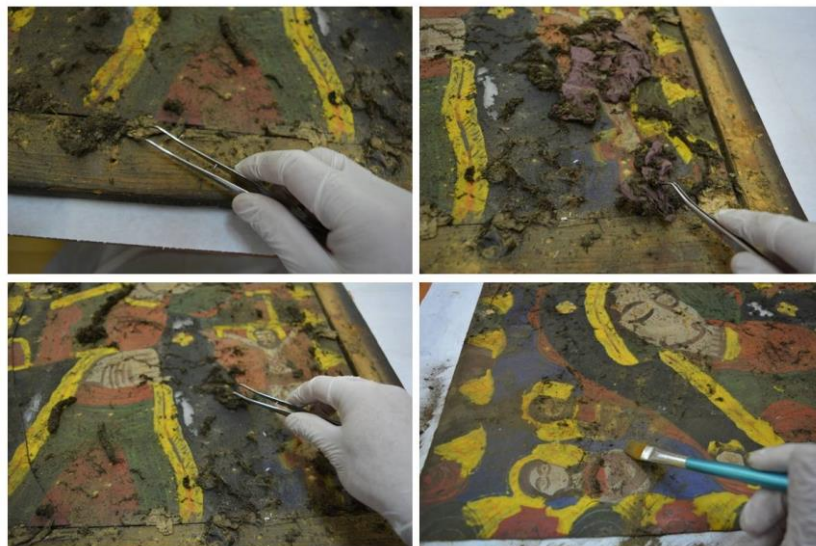


4. Overview of the opened icon.

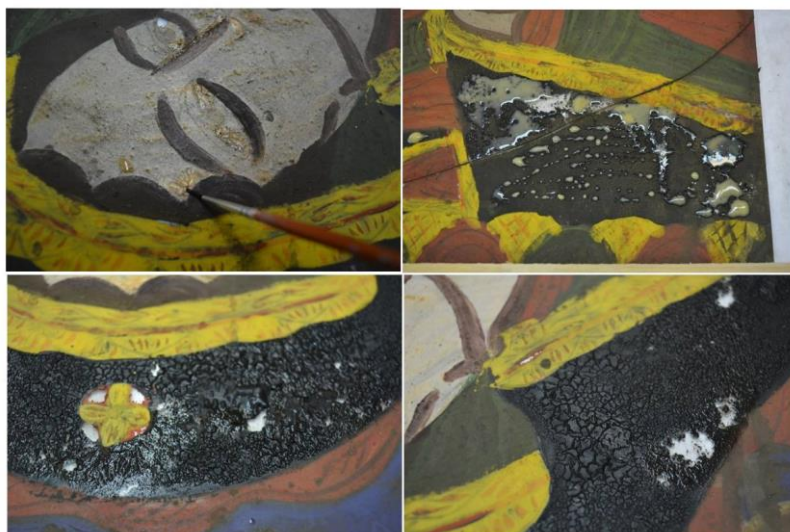




5. Opening the frame and the cover.  
6. Frame and cover cleaning interventions.



7. Dry cleaning interventions on the painting.



8. Prophylactic consolidation of the painting.





9. Overview of the icon after cleaning and final consolidation of the painting.



10. Overview of the icon before and after restoration.

**HEAT-SEAL LINING OF A PAINTING WITH BEVA 371.  
A CASE STUDY: "PORTRAIT OF A MAN", BY MIȘU POPP  
(THE PORTRAIT OF ION VLAD, A MINE OWNER FROM ROȘIA MONTANĂ)**

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**Abstract:** *The topic of the article is the use of the heat/vacuum low-pressure table, which is an important asset of the technical equipment from the institution's laboratory, and BEVA 371, a thermoplastic adhesive, in the process of lining a work from the museum's collection. The aim is to use the restoration documentation in order to scientifically exploit the information related to the type and sequence of the methodological steps, with the aim of adopting modern standards to the activities of restoration, within the laboratory of the Brașov Art Museum. The work it was acted upon is an acquisition that has the potential to be included in the museum's Permanent Exhibition.*

**Keywords:** *restoration, oil painting, textile support, lining, heat/ vacuum low-pressure table, the hot-seal method, BEVA 371.*

**Rezumat:** *Tema articolului este utilizarea mesei termice cu presiune joasă, aflată în dotarea laboratorului instituției, și a adezivului termoplastic BEVA 371, în procesul de dublare a unei lucrări aflată în colecția muzeului. Se urmărește utilizarea documentației de restaurare în vederea valorificării științifice a informațiilor ce țin de tipul și succesiunea etapelor metodologice, în scopul adoptării unor standarde moderne de restaurare în cadrul activității laboratorului de restaurare al Muzeului de Artă Brașov. Lucrarea asupra căreia s-a intervenit este o achiziție, cu potențial de includere în cadrul Expoziției de Bază a Muzeului de Artă Brașov.*

**Cuvinte-cheie:** *restaurare, pictură în ulei, suport pictural textil, dublarea pânzei, masă de dublare cu presiune joasă, dublare prin sigilare termică, BEVA 371.*

## 1. Introduction

The Brașov Art Museum is home to a wide range of artworks by the painter Mișu (Mihail) Popp (1827-1892), born in Brașov, a leading representative of Romanian academism. The artist distinguished himself both through his portraits and his extensive works of church paintings. His place in the Romanian painting has been reconsidered after several art history studies, and one could assert that he is one of the most talented and prolific Transylvanian Romanian painters of the 19th century.

The Mișu Popp Collection of the Brașov Art Museum brings together 64 easel paintings and 32 drawings. The collection is representative of the artist's entire creation, his preferred genre being portraiture, with the portrait of the ruler Michael the Brave, famous for having been reproduced in history textbooks, as the centrepiece.

Numerous historical figures from Romania's past, as well as modern figures like Avram Iancu, Mihail Kogălniceanu, C.A. Rosetti, Cuza Vodă, Ion Brătianu, and Ștefan Golescu, are depicted by Mișu Popp

in portraits that strictly adhere to the academism conventions. However, because these figures are people, or heroes, the influence of Romanticism can also be noticed, the characteristics of the two trends overlapping in the same work. The theme is the prerogative of Romanticism, but the production remains essentially academic (Pocol 2022).

## 2. Some biographic information about Mișu Popp

Mișu (Mihail) Popp (19.03.1827-6.03.1892) was one of the first Romanian artists to receive a Western plastic art education.

He came from a family of nine children, all of whom were engaged in the craft of painting. He wanted to study painting, but his father insisted that he attend the School of the Grenadiers instead. This decision ultimately paid off when the boy, who later studied in Vienna, participated in the 1848 Revolution to defend the city of Brașov. The artist, however, was driven to pursue his dream and began studying at

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the Imperial-Royal Academy of Fine Arts in Vienna, in 1845, under the tutelage of some of the most well-known artists of the day, including Ferdinand Georg Waldmüller, Joseph von Führich, and Friedrich von Amerling. He was taught the fundamentals of academism under close supervision and later added elements of Romanticism and Biedermeier, filtering them through his own sensibility. In terms of chiaroscuro, as well as in terms of style, he was influenced by Rubens and Rembrandt. He made friends with Constantin Lecca, a well-known artist who was older than himself, during the Revolution of 1848, and learned from him more about secular and religious painting. Between 1850 and 1864, they made the decision to collaborate on painting churches in Wallachia. Numerous commissions for religious paintings and mountaintop portraits of the bourgeoisie helped Mișu Popp gain recognition and admiration (Pocol 2022).

Mișu Popp will no longer contribute to the growth of art in the Principality after permanently relocating to Brașov in 1864; instead, he will work locally and establish a workshop in Șchei, Brașov's traditional Romanian district. He worked on his soul project, the creation of a so-called pantheon of Romanian figures, while also commissioning religious and portrait paintings for churches in the Brașov area. He started teaching drawing at the Romanian High School in 1890, nowadays The Andrei Șaguna National College, for just two years, before passing away (Pocol, 2022).

Mișu Popp owed his vast culture and multilateral knowledge, which astounded and inspired respect, to his newness of reading and cultivation (according to Constantin Popp, the great-grandson of the artist's brother) (Pocol, 2022).

According to art historian Virgil Vătășianu, since Mișu Popp, Romanian art has been an integral part of Western culture, and in Transilvania, there is even a call for national emancipation through the message of the sold-out portraits, which include historical figures significant to Romanian culture as well as messages of hope and victory (Pocol 2022).

### 3. The provenance of the work

Between 1955 and 1996, 18 paintings with Popp's signature were bought. and in 2010, Mrs. Elena Antonovici-Gottlieb from Bucharest offered to donate 6 additional works. Later, in 2019, two portraits were purchased from Eng. Mircea Dobocan, in Brașov.

Our case study work was purchased along with a pendant portrait (the portrait of Maria Veturia Vlad, the daughter-in-law of Ion Vlad) in order to add two noteworthy pieces of art, with enduring historical and stylistic significance, to the museum's collection.

In the excerpt from the interview with Eng. Mircea Dobocan, by museographer Andreea Pocol, on 13.05.2021, following the purchase of the two paintings by The Brașov Art Museum, it appears that Mr. Mircea Dobocan uncovered, after the 1989 Romanian Revolution, his inheritance from his grandmother of some paintings by Mișu Popp (kept in the attic of a house in Orăștie), which depict some of his forefathers. Among these were the two paintings acquired by the Brașov Art Museum: the portrait of a woman - Maria Veturia (born) Dăian, married Vlad, quite well preserved, and the portrait of a man, Ion Vlad, mine owner at Roșia Montană, which, although it had been in the attic of the same house as the other portrait for several decades, was in a much poorer state of preservation, requiring more substantial restoration work. When asked about such strikingly different states of preservation, Mr. Dobocan mentioned his observation: the states of preservation would be different because the male portrait was on the floor of the attic and would probably have suffered from rodent damage, whereas the portrait of the woman was not in the same position, but leaning vertically (Pocol 2022).

### 4. Remarks on the work's state of preservation

The original support, a linen canvas, was impacted by unsuitable storing conditions, exposure to elements and pest activity. It has aged and become oxidized, a fact that also lead to lacunae and losses of paint layer (Fig. 5, 6). The industrial crafted linen canvas, with fine-grained fibres, exhibited slight tensional deformations in its structure, perforations as well as unravelled strings, superficial and adherent dirt, and oil/ varnish halos (Fig. 1, 2, 4). The stamped mark of the Vienna-based company that made the textile support is visible on the reverse: "W. KOLLER & CO IN WIEN Mariahilferstrasse 33 Silberne Medaille" (Fig. 3).

Due to slackness, the inner profile of the chassis was imprinted on the front of the painting manifesting the so called "ghosting" effect (Fig. 7). Ghosting happens when the stretcher bars are visible through the canvas because the canvas is too close to the bars. The canvas may even press against the bars or sit on them. This becomes like a ghost of the frame that is visible on the canvas surface.

Due to its state, it was considered that the original canvas had to be lined because it was no longer capable of supporting the tensions of re-stretching.

## 5. The case study. Techniques. Methodology

### *THE LINING TECHNIQUE*

The practice of lining dates to the seventeenth century. It consists, in principle, in gluing a piece of fabric to the back of the textile support of a painting. Paintings were lined for a variety of reasons, including when the textile support was unable to stabilize the picture layer, when the stretcher needed to be replaced, when the painting had become baggy, when advanced cleavage resulted from tensions in the picture layer, when the picture layer's surface was unsightly, when the support was partially destroyed, when the stretching edges were missing, or when someone wanted to take precautions against damage (Nicolaus 1999).

A normal lining must be heated to at least 65°C before it can start to reach its maximum strength. The restorer can manipulate distorted paint films back into the original form at this temperature because that is also the typical temperature at which resinous paint becomes soft and malleable (Berger, Russel, 2000).

### *THE HEAT/VACUUM LOW-PRESSURE TABLE*

In theory, heat/vacuum tables and low-pressure tables, are just big irons turned upside down, with extraction ducts. A vacuum pump creates low pressure between the full cover and the heating plate, which is then monitored by a manometer, while the heating plate, with the extraction ducts, has an electric heating element controlled by a thermostat. The concept of creating a table on which pressure and heat could be controlled was first proposed in 1930 at the International Museums Conference in Rome, but it wasn't until 1948 that the heat table and, later, around 1953, the first heat vacuum table were developed. The iron was replaced by heating plates controlled by thermostats and uneven mechanical pressure by atmospheric pressure in vacuum-heated tables (Nicolaus 1999).

The first technically advanced hot table manufactured, on an industrial scale, and in a variety of sizes was created by Koch, a Hanover-based company, in the late 1950s. Up until the 1970s, restorers created and constructed a wide range of hot tables for their own use and sale, either on their own or in partnership with businesses in the industry. Vacuum hot-

tables can be used as pure vacuum tables for the hot-seal method and various types of cold lining. Additionally, they can be used to treat blistered canvas paintings and, under certain circumstances, the picture layer of panel paintings (Nicolaus, 1999).

There are no restrictions on the size of the picture that can be treated because of the size of the table. Larger paintings can be handled in sections.

The heat/vacuum table has been developed further with low pressure tables. They operate on the idea of an airtight, internally hollow metal table with finely drilled holes in the upper plate that allow air to be extracted mechanically. This holds the painting in the table onto the perforated plate by taking advantage of the fact that a painting's surface only allows a small amount of air through aging cracks and acts as a film in the process. In other words, only the portions of the low-pressure table that are not directly below the painting need to be covered with film strips when work is done on it. In order to apply heat, the painting is therefore handled more delicately and it is possible to work on it while it is held in place by low pressure (Nicolaus 1999).

Infrared lamps were mounted above these devices when they were first put to use. Low-pressure tables with work surfaces that may be heated by integral heating systems to the proper temperature are now commonly available. Low pressure tables can be utilized for all types and styles of restoration labours. When using heat/vacuum tables for lining, the task must be completed with surgical accuracy. The surface of the painting will show even more clearly every dust particle, contamination of the adhesive, canvas fibre and canvas knots (Nicolaus 1999).

### *THE VACUUM ENVELOPE*

With the aid of vacuum envelopes, a painting can be pressed more gently. At the Greenwich Symposium on Comparative Lining Methods, which took place in 1974, the envelope approach was introduced for the first time by William Percival-Prescott and Ronald Chittenden (Percival-Prescott, Chittenden 1975).

Vacuum envelopes can be created by using adhesive tape to secure a sheet of polyester film (Hosaphan/Melinex) or polyamide to a frame. The sheeting material is determined by how sensitive the painting is and how well the impasto is executed. The painting that has to be treated is placed on the



sheet and encircled by canvas strips that let air escape evenly as a vacuum is formed.

The vacuum envelope has the advantages of exposing the paint layer structure to less stress and allowing the front and back of a painting to be examined while the painting is being treated. Paintings with noticeable imperfections or impasto on the front and/or back can be lined with vacuum envelopes (Nicolaus, 1999).

#### *ABOUT BEVA 371*

Between 1968 and 1970, Gustav A. Berger created BEVA and thoroughly tested it. BEVA 371 has a variety of applications for treating artworks with various conservation issues: applying canvas patches, inserting canvas inlays, sticking tears, stiffening edges, adding edges, lining the edges area, and using the nap-bond, fabric-grid, reactivation, heat-sealing, sandwich, marooning, and separation methods (Nicolaus 1999).

In order to reduce the risk of causing physical damage to paintings, the main goals behind the development of new lining adhesives, throughout the 1970s and 1980s, were to increase the reversibility and stability of the materials used and decrease lining conditions, such as heat, pressure, and moisture. It is believed that wax-resin impregnation with BEVA 371 will reduce harmful stresses brought on by the paintings' hygroscopic response (Ackroyd 2002).

BEVA 371 is a complex synthetic resin and wax mixture that was developed as a stable adhesive with the goal of forming reliable, strong bonds. It was originally meant to be applied to both the lighting canvas and the back of the original. The main factor that has made BEVA 371 the most popular adhesive for lining and strip-lining is its combination of dependable adhesion and enhanced reversibility.

BEVA 371 is available commercially in a variety of container sizes, as well as in spray cans and films. Working with it as a paste or a film is an option. Both direct and indirect applications of the lining adhesive are possible. Direct application is made to the textile support, while indirect application is made to a film with silicone coating or an intermediate layer.

Typically, BEVA 371 is used as a heat-seal adhesive. It has three primary parts: wax to assure reversibility, a resin component to make it sticky, and a macro-molecular backbone polymer to manage flexibility. The heat-seal temperature of BEVA is 68°C, which was felt to be the best for thermoplastic

treatment of old, old, distorted paint films (Berger 1975). After being heat sealed, it changes from milky white to transparent. At around 55°C, dry BEVA starts to develop a powerful tack on itself and other smooth surfaces, with no chance of staining. The adhesive has passed its glass transition temperature (T<sub>g</sub>) and transformed into a liquid once it reaches the activation temperature (65°C). BEVA produces an aggressive tack at this temperature that is comparable to contact cement or cellophane wrapping tape. Because a heated and activated high molecular material needs time to set and solidify again, this tackiness lasts for a long time. Even silicone-coated Melinex sticks to warm BEVA solution (Berger, Russel 2000).

White spirit, turpentine oil, xylol, and toluol are some examples of aliphatic and aromatic solvents in which BEVA is soluble. Alcohol and ethylene glycol mono-ethylene ethers (Cellosolve) are not among these substances. Acetone makes BEVA swell and weakens the bond but does not break it (Nicolaus, 1999).

Work with BEVA adhesives should always be done in a room with good ventilation. BEVA film stands out as the sole exception. Since there are no solvents involved, no special ventilation is needed in the workspace (Berger, Russel, 2000).

#### *THE HOT- SEAL METHOD*

Among those who worked in the development of the hot-seal method in the 1960s, are Jentina E. Leene (1963), George Meesens (1966) and J. Lodewijks (1967) (Berger 1975). The temperature, amount of time, and amount of pressure needed for sealing have an impact on the hot-seal technique. Many thermoplastics seal at temperatures that make them unsuitable for picture lining (Nicolaus, 1999).

In the process of sealing or the hot-seal method, a dry adhesive film is heated and bonded with another layer to make it tacky. The hot-seal method makes use of the thermoplastic properties of specific synthetic resins and lining mixtures created especially for this use. In general, any thermoplastic can be used with the hot-seal technique. The process entails applying the adhesive solution to the lining fabric. Following the solvent's evaporation, sealing is accomplished using heating under pressure.

Heat, low pressure tables, vacuum tables, infrared tubes, or infrared lamps are used to activate the adhesive. The adhesive film no longer contains solvents, which has the advantage of not penetrating the picture layer. It also sets after cooling.

Adhesives based on poly-acrylic and polyvinyl acetates as well as synthetic resin blends with micro-crystalline wax, like BEVA 371, are suitable for the hot-seal method. Hot-melt adhesives made of these materials can be classified as either permanent or temporary (Nicolaus 1999).

### THE PROCEDURE

The special restoration-grade linen fabric was cut with a surplus, larger than the painting all around. The lining was completed using a method similar to the hot-seal method (Berger, 1968–1970), in which the fabric was coated with a thermoplastic artificial resin-based adhesive (in this case, BEVA 371), which was then made tacky by heating and bonding together with the original and the lining canvas.

Firstly, in order to ensure an even thickness of the laminating layer, the adhesive was applied on the original canvas with a spatula, through a fibre glass mesh (Fig. 11). After drying, the layer was carefully ironed to a smooth surface. Secondly, the "transfer method" (Nicolaus, 1999) was utilized to prepare the lining canvas. This method involves coating the lining fabric with a thin adhesive film, which was then sealed to the painting (Fig. 10). It has the advantage that no water, solvent, or solvent fumes enter the painting. The carrier material used to make the sheets is silicone paper or silicone coated Melinex (Nicolaus 1999).

Before making the assembly, the heat/vacuum table must be meticulously cleaned. It must be kept in mind that the vacuum table highlights any irregular surfaces, whether they are in the laminate itself or on the table. Therefore, before being put together, each component of the laminate should be thoroughly checked for any impurities (Berger, Russel 2000).

Prior to lining, it was necessary to clean the back of the painting and consolidate the picture layer (Fig. 8, 9). In this case, some the tears in the textile support were soldered then a facing was applied throughout the areas susceptible to detachment of the paint layer (Fig. 7). It is crucial to determine whether a facing can be removed from a particular painting safely before applying it. Inaccurate fillings and extensive or bulky overpainting are carefully inspected on the painting's face. Prior to lining, these need to be fixed or eliminated.

In terms of varnish management, the old one should be left on throughout the lining process to act as a protective layer for the painting in general, but it can

occasionally be simpler to remove after lining, because reforming happens during heat treatment (Jones 1971).

The next steps were carried out for the assembling of the lining laminate and for the actual hot-sealing operation:

- The aluminium plate of the heat/vacuum table was cleaned thoroughly.
- The Melinex mono-silicone film was measured and cut sensibly larger than the lining canvas.
- The adhering face was marked and placed on top of the heat/vacuum table top, with the silicone side facing up, without covering the inlet orifices.
- The lining canvas was laid, with the BEVA 371 treated layer side up.
- The painting was placed on top of the lining canvas, face up, ensuring perfect contact between the two adhesive-coated surfaces.
- Strips of fabric, connected to the extraction duct, were placed around the painting to help create and distribute the vacuum evenly.
- The assembly (Fig. 12, 13, 16) was sealed with Melinex film that laid over the whole assembly and was firmly attached to the heat/vacuum table with adhesive strips all around.
- The envelope was perforated at one corner and a wooden bamboo stake was inserted into the hole, to act as a breather for the laminate (Fig. 14).
- The vacuum pump was switched on and the air directed from the center to the edges of the assembly by manual light pressure, with a soft sponge (Fig. 16).
- After ensuring the airtightness of the envelope, the heat/vacuum table was heated to 65°C for 1 minute, and the vacuum set at level 2.
- After 1 minute, the heat was turned off, but the vacuum pump was left on and the inlet was sealed for complete airtightness; at the same time, the heat/vacuum table fans were turned on to cool the assembly; this ensures gradual ventilation, because instant cooling a painting can create stresses that may eventually cause the paint layer to crack (Berger, Russel, 2000).
- When the assembly has cooled, the Melinex film covering the heat/vacuum table was removed and the leveling and adhesion of the lining was checked.

## 7. Conclusions

The main purpose of lining is, by far, to support original canvases that have been torn or damaged. It is intended to make up for these flaws by adding just enough additional support to keep the painting's condition stable.

Unlined canvas paintings react quickly to even the smallest changes in humidity and temperature. The response of a painting to humidity and slight temperature changes is slowed down and reduced by a BEVA 371 lining.

To effectively lessen its sensitivity to humidity, the reverse of the picture must be completely impregnated and protected; however, impregnation procedures invariably compromise minimal goals for better reversibility.

Using a vacuum table for the heat-lining process has several advantages, including gentle pressure, controlled (Fig. 15) and consistent temperature/pressure, and an effective cooling system, all of which ensure a high-quality lining intervention.

Due to its general features, this specialized tool is essential for stocking every oil painting restoration laboratories.

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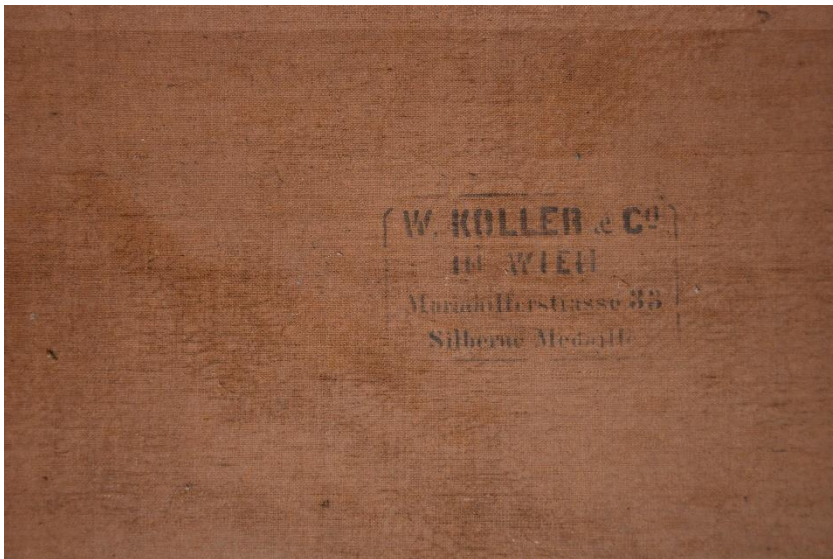


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1. Mișu (Mihail) Popp – "Portrait of a Man" (the Portrait of Ioan Vlad, a mine owner from Roșia Montană)
2. Mișu (Mihail) Popp – "Portrait of a Man" (the Portrait of Ioan Vlad, a mine owner from Roșia Montană) – detail before restoration



3.



4.

3. The back of the original canvas – detail, the maker's branding stamp
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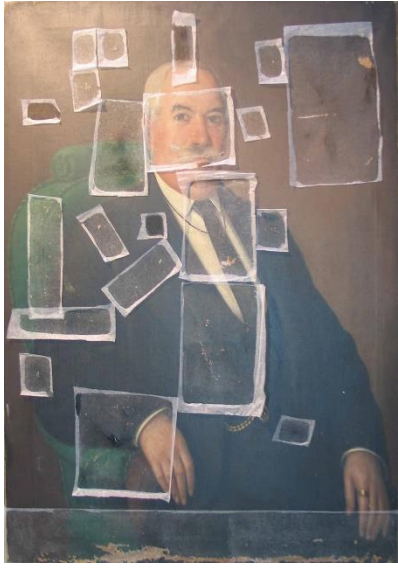
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5. The back of the original canvas – detail, backlighting picture, perforation
6. The back of the original canvas – detail, backlighting picture, paint layer lacuna





5.



6.

- 7. The “Facing”
- 8. Cleaning the back of the painting



7.

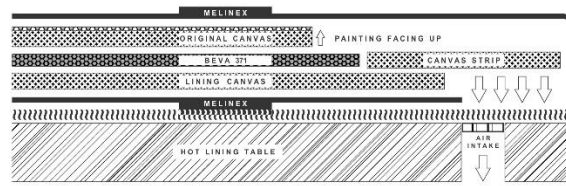


8.

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- 11. Applying BEVA 371 hot-sealing adhesive through a fibre glass mesh onto the original canvas



12. Schematic representation of the lining laminate



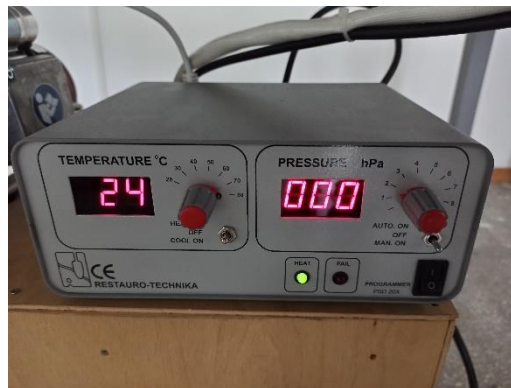
11.



12.

13. The vacuum envelope – aspect

14. The vacuum envelope – detail, the “breather”



15. The heat/vacuum table's temperature and pressure dial controllers



16. The low pressure hot-sealing procedure - excerpt from the video





## THE RESTORATION OF A WOODEN ICON FROM THE 18<sup>TH</sup> CENTURY PAINTED BY NISTOR FROM RĂȘINARI

Mirel-Vasile BUCUR \*

**Abstract:** *This article is a case study on the restoration of the icon "Christ Pantokrator, with Apostles". Restoration was integrated into the project "Museikon. A new icon museum revitalizes a historical monumental building restored in Alba Iulia" was conducted in partnership by the Alba County Council, National Museum of Unification in Alba Iulia, Romanian Orthodox Archdiocese of Alba Iulia and the University of Bergen - Norway. "Museikon" is financed under the Program PA16/RO12 "Preservation and revitalization of cultural and natural heritage", through the EEA Financial Mechanism 2009-2014.*

**Keywords:** *wooden icon, state of preservation, conservation, restoration, consolidation, pigments*

**Abstract:** *Acest articol este un studiu de caz cu privire la restaurarea icoanei „Hristos Pantocrator, cu Apostoli”. Restaurarea a fost integrată în Proiectul "Museikon. Un nou muzeu revigorează o clădire istorică monumentală restaurată în Alba Iulia" a fost realizat în parteneriat de Consiliul Județean Alba, Muzeul Național de Unificare din Alba Iulia, Arhiepiscopia Ortodoxă Română din Alba Iulia și Universitatea din Bergen - Norvegia. "Museikon" este finanțat prin Programul PA16 / RO12 "Conservarea și revitalizarea patrimoniului cultural și natural", prin Mecanismul Financiar SEE 2009-2014.*

**Cuvintele-cheie:** *icoană pe panou din lemn, stare de conservare, restaurare, consolidare, pigmenți*

### Preliminary

The icon "Christ Pantokrator, with Apostles" that is the subject of this case study is part of the collection of Romanian Orthodox Archdiocese of Alba Iulia and is called in institution records appearing in the inventory record number 662 (Fig. 1-2). The icon is dated 1733.

The icon stands out for the graphic design of the clothing, in clear disagreement with the care taken to create the physiognomy of the main character. Details are unfortunately hard to see under the layer of dirt. The piece is important for the study of the descent of this painter, who was a master of painters, among his apprentices, with a very high probability, being Iacov from Rășinari, as evidenced by the physiognomic characteristics of these icons, compared to the youthful works made by the younger. Brothers. The dating and attribution were made by association with the paired icon of the Mother of God with the Child<sup>1</sup>.

### Analysis

In order to understand the constituent materials and the conservation status of the play, basic steps in determining appropriate treatment, we conducted

a series of investigations such as: visual investigation and grazing of natural light, it photomicrographs were made with portable digital microscope, biological investigations, XRF investigation.

### Conservation status

The state of conservation of the icon before restoration was conditioned by the ageing of the materials (Bucur 2020, p. 779) and the faulty conservation (Fig. 3-4).

The support of the icon is made up of two tangentially cut boards made of resinous wood, with size 78 x 69 cm. The joint is fragile even if the boards do not have a pronounced curvature. The panel is constitutively reinforced with two crossbars of the same wood essence. They have bevelled edges, are semi-recessed and the direction of advance in the case is from the right. On the reverse, it can be seen that the panel was secured on the joint with strips of cloth (you can see the traces of the adhesive and pieces still preserved on the joint). We also observe the moisture halos, excess moisture being the main factor in the degradation of the pictorial layers at the base of the icon. The attack of xylophagous insects (*Anobium punctatum* by the size of the flight holes) is visible both on the painted surface and on the

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<sup>1</sup> Ana Dumitran, Fisa analitică ARP662/21 februarie 2014

reverse without significantly affecting the mechanical strength. The pictorial layers show age cracks, detachments and gaps of different depths and areas. Small losses of pictorial matter are visible on the joining areas of the panels. The most extensive lacunar surfaces are in the lower part.

The aged varnish is yellowed and browned, having a scaly appearance in some areas. Inventory number inscribed on a label affixed to the painted face lower left corner. Superficial, adherent and encrusted dirt is present on the entire surface and partially screens the painting.

### Previous interventions.

A label application, on the front, on the painted surface (Fig. 5) The lacunar areas have the appearance of a surface on which an intervention or a consolidation intervention has been performed.

In conclusion, we establish degradations at the level of the support: functional wear, cracks of different depths, loss of wood mass, degradations determined by the function of a cult object, tangential cutting as well as painting on one side. Degradations at the level of pictorial states: scratches, cracks, cracks of various depths due to improper handling; separation of the color film due to the aging of the materials and fluctuations in temperature (T) and relative humidity (UR); the browning of the varnish due to its aging; deposits of dirt due to the function of a cult object as well as to defective conservation; gaps and separations in the form of a gable roof.

### Restoration

A light dedusting with soft brushes was carried out beforehand on the painted surface, a prophylactic consolidation was carried out on the area with serious separations, after which the piece was carefully examined and the analyses. Removing the front label was achieved by hot water compresses, excess adhesive was removed mechanically scalpel (Fig. 6-7). The wax deposits were removed by softening with white-spirit and mechanically, with the help of a scalpel.

The consolidation of the painting was carried out selectively, on problem areas, using collagen-based adhesive (fish glue aqueous solution, 8%). Presses were performed with the thermocautery heated to 75°C, alternated with cold press with pieces of marble. After 24 hours I removed the Japanese leaf with pads soaked in warm water, taking care to remove the excess water with dry cotton pads.

Panel cracks were a problem for the stability of the overlays. The interventions were carried out in several stages. The first action consisted in filling the space between the boards with a mixture of sawdust and 20% fish glue. After this, the connection between the boards was secured with two parallelepipedal cleats. In the upper part there was also a loss of material, determined by a crack along the fiber, from the edge of the panel to the seat of the crossbar, which evolved due to this loss of material. We made a material addition with wood of the same essence, the direction of the fiber keeping the orientation.

The most serious problem was the marginal crack along the fiber, located right on the area of the seat of the lower cross member. A consolidation was previously tried on it, which proved ineffective, because the mounted wooden dowels could not be fixed on both sides of the crack, the part towards the painting being very thin. Therefore, I decided to extract the two cones, extract the crossbar and reduce the crack gap. A mixture of fine sawdust and glue was gradually introduced into the slot, applying and maintaining the press until dry. The holes where the dowels were inserted were sealed with the same mixture. For the solder to last, after reinserting the crossbar into the housing, I applied a tack along the fiber, over the crossbar. In the overlapping area, the crossbar was adjusted.

The back of the icon was cleaned with ammonia water (3%)

Following the cleaning tests, mixtures based on isopropanol + ammonia + water (80:10:10) and (50:25:25) and ethyl acetate + DMF (50:50) gave satisfactory results, but cleaning with dimethylformamide (DMF) gave the best results. It should be noted that after the cleaning, the names of all the apostles were highlighted, but especially the inscription on the green background of the icon to the left of the face of Jesus. Gaps in the paint layers were grouted with chalk mixture already mentioned mountain and isinglass. Grouted areas were finished with egg yolk emulsion.

The chromatic integration of the grouted areas was achieved with imitative touch-up, it being about the flight openings. Chromatic integration was performed with watercolor in the pointillist technique (Ionescu 2014, 66).

At the end, a layer of varnish based on natural resin (damar - 8% in turpentine essence) was applied by brushing.

### Recommendations and conclusions

Because the support exerts a capital influence in preservation paint layer, it should be protected primarily by thermal variations and relative humidity. Very hygroscopic, rapidly absorbs wood moisture, to achieve a balance with the environment.

The relative humidity should hold it's far as possible between 50 and 65% without exceeding the upper limit. Moreover, the law stipulates that the parameters should be fit for different microclimate of movable cultural media. Recommendations are almost universal and most all states have legislation and concerns to publicize and enforce such rules that ensure preservation of heritage, the principle of medicine says it is much easier to predict than cure.

Temperature is closely related to relative humidity. An optimum temperature is between 18-20° C. The

maximum illumination must be between 150 and 180 lx.

After restoration, the icon participated at the exhibition *Kissed Again and Again. Romanian Icons from Transylvania* at The University Museum of Bergen and now being exhibited in the permanent exhibition at the Museikon in Alba Iulia.

If at first, we saw an image composition distinguishing them hard enough, with a support weakened, we reached the end, to can be presented in an exhibition, and especially, we came to rediscover a hidden image under layers of dirt and old varnish.

Through the restoration interventions, the icon of this important painter from Transylvania, from a sick object of study, once again has once again become an object that can be exposed



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1. Front before restoration



2. Back before restoration





3.



4.



5.



6.

3-6. Details front before restoration



7.



8.

7-8. Details. Consolidation of the paint layers



9-10. Aspects when attaching wooden cleats



11. Details before restoration



12. Details after restoration



13.



14.

13-14. Cleaning tests



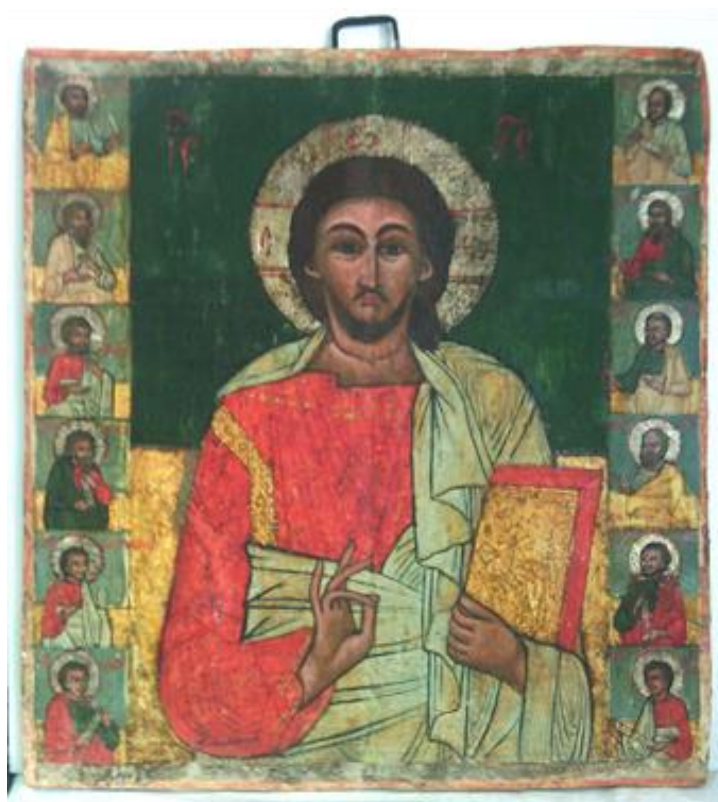


15.

15. During cleaning



16. During cleaning



17. Front after restoration



18. Back after restoration



MUZEUL NAȚIONAL BRUKENTHAL

PUBLICAȚIILE PERIODICE APĂRUTE DE-A LUNGUL TIMPULUI  
(INCLUSIV PRECURSORII)

CRONOLOGIE	ISTORIE, ARHEOLOGIE	ARTA PLASTICĂ	ȘTIINȚELE NATURII	RESTAURARE	ETNOGRAFIE
<b>Ante 1950</b>		Mitteilungen aus dem Baron von Brukentalischen Museum 1931- 1937 - Neue Folge I- VII 1941 - Neue Folge I- VIII 1944 - Neue Folge IX-X 1946- 1947 - Neue Folge XI-XII	Verhandlungen und Mitteilungen der siebenbürgischen Vereins für Naturwiissenschaften zu Hemannstadt  1849-1945 95 de numere		
<b>1959-1989</b>	Studii și comunicări Muzeul Brukenthal, Sibiu  1956, nr. 1 1965, nr. 12 1967, nr. 13 Volum omagial, Anuarul Muzeului Brukenthal, 1817-1967 1969, nr. 14 1973, nr. 18 1975, nr. 19 1977, nr. 20 1981, nr. 21	Studii și comunicări Muzeul Brukenthal, Sibiu  1956, nr. 4, 5 1956, nr. 7 Istoria culturii 1978, nr. 1 1979, nr. 2	Studii și comunicări Muzeul Brukenthal, Sibiu  1958, nr. 10, 11 1970, nr. 15 1971, nr. 16 1972, nr. 17 1973, nr. 18 1975, nr. 19 1976, nr. 20 1977, nr. 21 1978, nr. 22 1979, nr. 23 1980, nr. 24 + Supliment 1983, nr. 25 + Supliment 1984, nr. 26 1998, nr. 27 2003, nr. 28 2004, nr 29 + Supliment		Studii și comunicări Muzeul Brukenthal, Sibiu  1956, nr. 2, 3, 6 1958, nr. 8, 9  Cibinium, Studii și materiale privind Muzeul tehnicii populare din Dumbrava Sibiului, Sibiu  1966, vol I 1967/68, vol II 1969/73, vol III 1974/78, vol IV 1979/83, vol V
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