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GRAPHIC DOCUMENTS

Fit for an emperor: Akbar's luxury manuscript of the *Baharistan* of Jami and its conservation

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Keywords

paper conservation, Islamic manuscript, copper-green, remoistenable tissue, consolidation, gels, historic repairs, mounting

Abstract

This paper discusses the conservation treatment and technical study of an exquisitely decorated copy of the *Baharistan* of Jami, produced around 1595 for the Mughal emperor Akbar. Nineteenth-century repairs and rebinding had contributed to its deteriorating condition, rendering it inaccessible. In order to anticipate how conservation interventions might affect the manuscript's visual appearance and evidence of material history, it was necessary to undertake a technical study, followed by a comparison with two other Akbari manuscripts. These studies informed the methods chosen to conserve the manuscript and return it to an accessible condition. Gels were used to remove unsuitable guards whilst preserving the susceptible surface of the original paper. A gelatine-based remoistenable tissue was chosen to mechanically stabilise deteriorated copper-green pigment, and JunFunori used to consolidate flaking pigments. Finally, a slotted folder was created to house each folio, resulting in a flexible system suitable for both consultation and display.

DESCRIPTION AND PROVENANCE

The *Baharistan* ('Abode of Spring') was composed in 1487 by the Persian scholar and great mystical Sufi poet Jami, written as a book of wisdom and advice for his son. The Bodleian Libraries' copy (MS. Elliott 254) was produced for the Mughal emperor Akbar by his Imperial atelier and includes a colophon stating that the calligraphic work was completed by Muhammad Husayn Kashmiri, known as 'Pen of Gold', on the 5th of February 1595 in Lahore. Harnessing the talents of sixteen eminent court painters, this remarkable manuscript (Figure 1) combines fine calligraphy with illuminations, profuse marginal decorations and full-page illustrative paintings, all on lustrous paper of different colours (Table 1).

Figure 1. An opening before conservation (Bodleian Libraries, University of Oxford, MS. Elliott 254, folios 26b–27a)

Whilst there are surprisingly few full-colour painted illustrations and illuminations, this is more than compensated for by the fulsome shell gold marginal decoration appearing on every single page, alternating between arabesque and geometric medallions and dense landscape scenes inhabited by animals. These gold borders are occasionally enlivened further by the addition of delicately coloured vignettes derived from a standard repertoire of hunters, fair youths, and their teachers and courtiers.

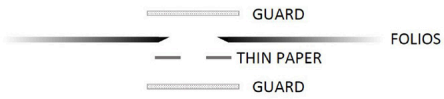

Figure 2. (top) Example of damage caused by guards and copper-green deterioration (op. cit. folios 22b, 25a); (bottom) diagram of spinefold structure

Figure 3. Detail of vignette showing pigment loss (op. cit., folio 44a)

Table 1. Codicological summary

MS. Elliott 254	Description	Dimensions (mm)
Binding	Red velvet binding with metal furniture	h: 298 w: 195 d: 30
Folios	A, i–viii (later addition in Western paper); 1–67 (*Baharistan* of Jami); 68–70, Z (later addition in Western paper)	approx. h: 288 w: 177
Text panel	Text panel in one and/or two columns; 14 lines; occasional diagonal lines	approx. h: 168 w: 83
Quire arrangement (folios viii-67)	One binion, eight quaternions	
Illuminated *shamsa* (sunburst)	Folio: 1a	
Illuminated *'unwān* (headpiece)	Folio: 1b	
6 full-page illustrations	Folios: 9a; 17b; 27a; 29a; 35b; 42a	
Vignettes in margins	Folios: 10a; 12b; 17a; 21b; 22a; 30a; 31a; 33b; 44a; 45b; 60b; 61b	
Additional material	5 semi-transparent interleaving sheets	

The manuscript was acquired in Lucknow in 1800 by the Anglo-Irish diplomat and Orientalist Sir Gore Ouseley. The surviving red velvet binding with decorative metal furniture can be dated to his period of ownership, as manifest by various traits typical of the era as well as the presence of a quire of Western paper containing Ouseley's notes. Yet further proof is offered by printed waste dated to 1804 used to reinforce the spine. Very distinctive decorated papers used in the manuscript as guards can also be found in other manuscripts from Ouseley's collection, further linking these interventions to his ownership. Following his death in 1844, it was bought along with the rest of his library by John Bardoe Elliot, an Oriental scholar and former Bengal civil servant who subsequently presented it to the Bodleian Library in 1859.

CONDITION

The original manuscript survives as single folios, reorganised into bifolia and quires by way of guards made from white and blue decorated papers. These guards were adhered on both recto and verso to create spinefolds, thus allowing rebinding of the volume in the 19th century. It therefore does not retain any evidence of its original binding and furthermore does not offer any clear indication of its earliest quire arrangement. By 1982 the manuscript, in such fragile condition that its consultation was nearly precluded, was disbound so as to prepare it for photographic reproduction. It was not until 2017, prompted by the frequent requests of scholars wishing to study the manuscript, that its condition was assessed with the intention of addressing the challenging conservation issues.

Two primary causes of deterioration were identified. Firstly, the thick guards of decorated paper were triggering breakages and distortions, exacerbated by the fact that the guards had become very stiff and were not allowing safe turning of the pages (Figure 2). Secondly, a line of copper-based green, included in the array of gilt and coloured ruling which divides the text from the margins, had deteriorated significantly. This resulted in severe fractures of the paper around the text panels. In addition to these two issues, the thick paint layer of the illustrative paintings, illuminations and border figures showed areas of fragility and loss (Figure 3). Finally,

a few folios featured repairs using a variety of papers which had been crudely torn to size and often obscured the original paint layer below.

TECHNICAL STUDY

The aim of the technical study was to gain an intimate understanding of the materiality of the manuscript in order to devise a suitable conservation treatment and to inform codicological and art historical views. A wealth of information about the production of this manuscript was gathered through close observation of composition stages (Table 2) and the materials and techniques used.

Table 2. Overview of execution stages

Processes in order of execution	Sequence of stages
Paper preparation	Dyeing, laminating, sizing, burnishing
Page layout	Pressing of *mistara*, gold sprinkling, pinholes and scoring
Calligraphic work	Black text, coloured text
Illustrations	Six full-page paintings
Illuminations	*Shamsa* –sunburst ornament containing the title; '*unwān* –headpiece
Framing lines	Gilded and coloured ruling
Vignettes	Drafting of vignettes in borders
Decorated borders	Painting in shell gold on margins and text panels
Vignettes	Colouring of vignettes

Figure 4. Selection of dyed folios (op. cit., folios 52a–55a)

The dyed paper was of particular interest, as it frequently presented different colours on recto and verso (Figure 4). Examination revealed a laminate structure with a light neutral core. Practical sessions were organised to replicate historic paper dyeing techniques with an aim to understand more fully the inherent characteristics of these materials. The recipes followed came from Persian historical sources, usually written in the form of poetry and often emphasising the aesthetic connection between the colour of the paper and the ink, as well as the importance of dyeing paper to avoid the harmful effect of white paper to the eyesight (Barkeshli 2016).

With an intricate mixing and dosing of organic dyes a profusion of attractive colours were created using saffron or turmeric to make yellow papers, safflower petals for pinks and henna to add a warm tone to the paper and inhibit mould growth (Barkeshli 2018). Additives such as pomegranate or lemon juice or alkaline ash were used to control the pH of the dyeing bath and influence the resulting colour. The variable elements of this process raised awareness of risks to dyed paper induced by over-exposure to light, changes in pH or solubilisation of mobile pigments. These factors were taken into account when planning the treatment and rehousing of the manuscript. The practical sessions were accompanied by open lectures and a display in order to engage both the scholarly world and the broader public with research around the arts of the book. Another research aim was to identify pigments used in the manuscript and determine whether there was a consistent palette used by all the artists involved. Interpretation of the scientific analysis undertaken with Raman spectroscopy, fibre optics reflectance spectroscopy, X-ray fluorescence and hyperspectral imaging is still in progress. Carbon black, vermillion, red lead, organic reds, orpiment, organic yellows, ochre, copper-green, lapis lazuli, indigo and white lead were used either individually or in combination to create a variety of hues.

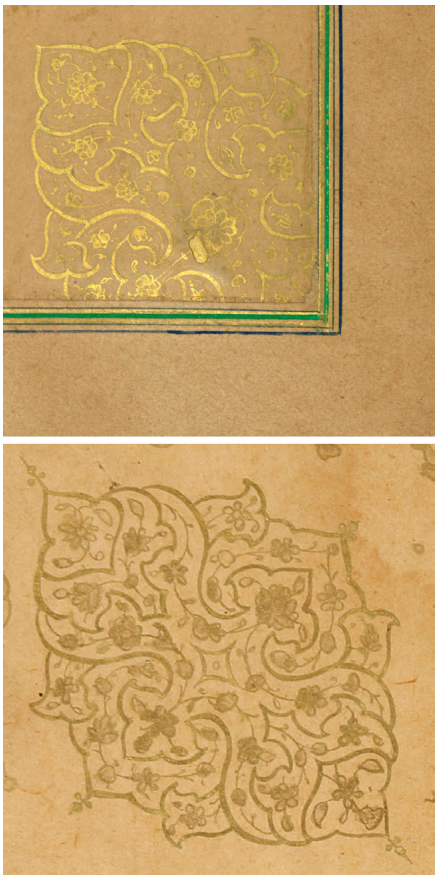

Figure 5. Matching medallions: (top) W.624, folio 103b, © 2011 Walters Art Museum, used under a Creative Commons Attribution-Share Alike 3.0 Unported License; (bottom) MS. Elliott 254, folio 11b

Comparative visual study of two other poetic manuscripts made for Akbar by the same courtly artists between 1595–8 allowed a greater understanding of the processes, materials and techniques used by the Imperial workshop. Striking similarities are shared between the *Baharistan*, the British Library *Khamsa* of Nizami[1] and the Walters Art Museum *Khamsa* of Amir Khusraw.[2] The wide repertoire of animals found in the landscape borders of the three manuscripts, including mythical Persian *simurgh* and Chinese *qilin* next to tigers, deer, rabbits, peacocks, elephants, ostriches and lynxes, appears to show a shared visual vocabulary (Seyller 2001). This is reinforced by the recurrence of identical medallions indicating the use of stencils or model books (Figure 5). The lacquered bindings of the two *Khamsas* additionally provide an indication of how the *Baharistan* might originally have been bound.

TESTING AND CONSERVATION

Prior to conservation, discussions between conservators and curators addressed concerns over whether it was fitting to remove the decorated guards. The paper used for the guards had been especially selected at the time to offer an additional aesthetic value and, as discussed, is found to adorn other items belonging to Sir Gore Ouseley. Therefore, its historic value had to be assessed against the visual impact of reinstating the original appearance of the manuscript. However, the decorated guards were the main cause of damage to the original folios and an impediment to their consultation. It was concluded that the removal of the guards was necessary to guarantee the manuscript's stability, access, long-term preservation and visual coherence.

When examined using transmitted light, it was evident that the guards overlapped the original folios by very few millimetres, so it was possible to cut off and retain intact a significant portion of each guard at the spine edge. However, the removal of the guard segments still adhered to the folios presented several challenges, especially as they proved considerably impermeable and potentially toxic as their base layer alternates between lead white and azurite.[3] This was further complicated by the vulnerability of the original paper beneath presenting water-sensitive shades of colour, distinguishing gloss and delicate shell gold decoration.

During a preliminary phase of testing, a spectrum of approaches to release the guards was considered: from dry delamination with a scalpel, to local humidification with agarose gels, to enzymatic treatment. The mechanical and enzymatic approaches both led to risk of damage to the paper surface, the former by scuff and abrasion, the latter by dissolving the layer of polished surface sizing. The process of tailoring the treatment resulted in a highly controlled method utilising agarose gel. Trials demonstrated that the guards could be released without any damage to the water-sensitive paper surface by limiting the area of treatment significantly whilst continuously monitoring through the microscope. This approach was essential to move the treatment forward.

Refining and standardising the method involved applying agarose gel at various concentrations for different lengths of time. It was concluded that a small block of agarose gel (1.2% w/v in deionised water, 20 × 10 mm

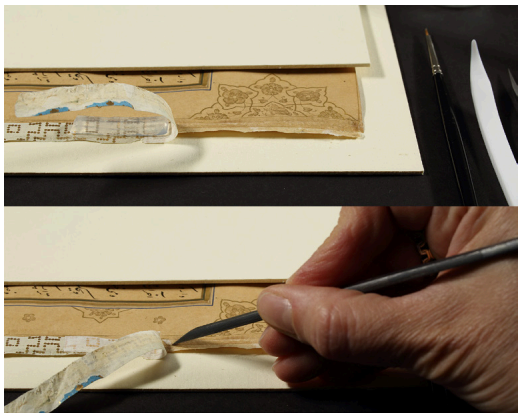

Figure 6. Removal of decorated guard: (top) agarose gel and (bottom) *intō* in action

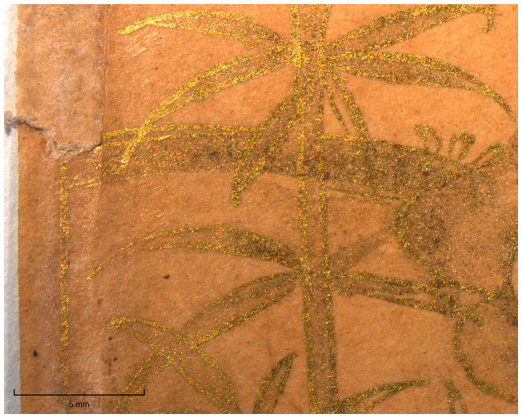

Figure 7. Detail of thin paper (on left) partially obscuring gold decoration, during removal

and of a thickness of only a few millimetres) placed on the surface of the guard for approximatively five minutes was sufficient to soften the layer below, including the adhesive. Following humidification, a protective facing of thin Chinese paper with dilute wheat starch paste was applied to the paper guard to reduce the risk of lead white or azurite particles contaminating the working area. Using an *intō* (a Japanese stainless-steel chisel) and a pair of tweezers, the humidified guard segment could then be removed as one full piece or several delaminated layers, depending on the circumstances (Figure 6).

Strips of thin paper from a previous intervention were discovered beneath the decorated guards, frequently obscuring areas of gold decoration (Figure 7).[4] The strips were adhered to the original folios on one side only, which had been chamfered in order to create a seamless attachment, later resulting in a fragile edge. Fractures were temporarily supported with splints of Japanese *usumino* paper and wheat starch paste. To reveal the hidden areas of gold decoration, the thin paper strips were removed using an agarose gel at a higher concentration of 3% and an application time of one minute. These strips have been left in place on one suite of folios as historical evidence of the previous format.

Nanorestore dry gels were compared to agarose 3% and tested for the removal of the thin paper to eliminate any risk of tidelines. These water-based chemical gels, with their exceptional water-retention ability, are far gentler than physical gels like agarose; they pose a reduced risk to the painted surface and limit the creation of tidelines (CSGI 2015). High and medium water retention gels are available in ready-to-use small sheets that can be cut to the desired shape. They are dry to the touch, flexible and even the smallest pieces retain their shape and can be applied with precision. They certainly showed potential, but because of their cost were only adopted for the removal of crude patches covering worm holes to minimise any risk of noticeable changes within the decorated borders. This material proved effective when the use of agarose, even at high concentrations, was found to introduce too much moisture.

Following complete removal of the guards, the temporary splints were replaced with Tengu paper (in neutral, NAJ, and brown, KT, 2 and 3.5 gsm) adhered with wheat starch paste to strengthen the fragile spine edges. Only major losses which posed a handling risk were infilled. Due to the wide range of colours presented by the dyed papers, it was decided to use just one tone of infill paper, dyed to match the core of the folio papers. A dye was prepared using Winsor & Newton watercolours in a 0.2% w/v solution of type B gelatine in water in order to ensure that the infill paper retained suitable stiffness and smoothness. The dye was brushed onto large pieces of Japanese *usumino* Minotake paper. Two pieces were then laminated together cross-grain using dilute wheat starch paste to replicate the thickness and opacity of the folio paper and to obscure the structure of the *usumino* paper. Where required, infills were needle-cut from this paper and adhered using wheat starch paste.

Forty-one folios demonstrated splits and fracturing caused by the deterioration of copper-green within the text-frame ruling. Treatment focused upon

mechanical stabilisation, as chemical stabilisation would have not been suitable for a heavily painted manuscript (for research relating to chemical stabilisation, see Hofmann et al. 2015, Malešič et al. 2015 and Hofmann et al. 2016). Using remoistenable tissue for repair allows precise control of moisture, crucial in order to avoid accelerating degradation and to protect fugitive pigments (Rose 2007, 80). Recent literature was consulted in order to short-list adhesives with scientifically proven ageing characteristics. These adhesives were used to make remoistenable tissues which were then empirically tested and judged against desired outcomes in order to select one with appropriate qualities (Table 3).

Table 3. Remoistenable tissue tests

Adhesive	Selected reading	Recipe (w/v)	Observations on working characteristics
Methocel A4M in water	Hofmann et al. (2015)	2.5%	*Adhesion*: slightly weak, inconsistent results, can peel away easily *Appearance*: integrates into the surface of Islamic-style paper well, however slightly matte *Removal*: light humidification not entirely effective; tissue tends to fragment and does not remove cleanly
Wheat starch + Methocel A4M in water, 1:1 V/V	Quandt et al. (2002) Rose (2007) Sawicki (2012) Hofmann et al. (2015) Royo (2017)	20% + 2.5%	*Adhesion*: very strong adhesion, however can cause tenting / puckering *Appearance*: integrates into the surface of Islamic-style paper well *Removal*: light humidification not effective; thorough humidification and mechanical action required
Gelatine Type B in water	Pataki (2009) Meyer and Neumann (2009) Hofmann et al. (2015)	2.5%	*Adhesion*: fairly strong *Appearance*: integrates into the surface of Islamic-style paper well *Removal*: easily and cleanly with light humidification
		5%	*Adhesion*: strong *Appearance*: integrates into the surface of Islamic-style paper well *Removal*: easily and cleanly with light humidification
Klucel G in Industrial Methylated Spirit (IMS)*	Stanley (2006) Hofmann et al. (2015)	2%	*Adhesion*: weak, can peel away easily *Appearance*: matte *Removal*: easily and cleanly with IMS swab
		5%	*Adhesion*: fairly strong *Appearance*: matte *Removal*: easily and cleanly with IMS swab
Gelatine Type B in water + Klucel G in IMS, 3:1 V/V*	Hofmann et al. (2015) Hofmann et al. (2016)	2.5% + 2%	*Adhesion*: fairly strong *Appearance*: slightly matte *Removal:* relatively easily with IMS swab
		2.5% + 5%	*Adhesion*: strong *Appearance*: slightly matte *Removal:* relatively easily with IMS swab

Note: Tissues were prepared by applying an even layer of the adhesive onto polyester film. A square of Berlin tissue was lowered on and left to dry. Strips were then cut using a scalpel, peeled away from the polyester backing and reactivated on a damp pack made from capillary matting and blotter moistened with water. They were adhered to handmade Islamic-style paper which had been surface-sized with starch and burnished to replicate the surface appearance of the *Baharistan* paper. The strips were tested using physical manipulation to assess adhesion strength and judged for appearance and ease of use including removability.
*IMS with brush application was also tested as a reactivation method for these samples.

Initially, gelatine type B at 2.5% was selected due to its combination of strength, ease of control during application and ability to merge visually with the page. Its slight shine was seen as an advantage when applying it to highly burnished Islamic-style papers. However, when Berlin tissue prepared with gelatine was tested on a folio of the *Baharistan,* two important modifications were required, as the tissue proved too white in contrast to the dyed folios and did not adhere quite as well as anticipated. Instead,

pre-toned 2 and 1.6 gsm Japanese Tengu papers were chosen and the gelatine solution increased to 3% w/v. Consistent remoistenable tissues with an even layer of adhesive were obtained by brushing the slightly cooled gelatine onto polyester sheets before placing on small squares of Tengu paper and leaving to dry. Depending on the severity of the damage, the appropriate weight tissue was cut, peeled away from backing, placed briefly on the damp pack to reactivate, then lifted and placed on the fractured area. Light pressure with a Teflon mini-spatula was used to ensure good contact. In some severe instances, repairs were required on both sides of a folio to offer additional support.

All the illuminations, full-page paintings and two of the marginal vignettes exhibited various degrees of pigment loss, flaking and cracking. Prior to consolidation treatment, warm JunFunori 0.3, 0.5 and 0.6% and Bermocoll 1% w/v in deionised water were compared using a 000 brush on pigment samples. JunFunori 0.5% offered good adhesion, free-flowing consistency beneficial for penetrating beneath the paint layer and the desired quality of being visually imperceptible (Geiger and Michel 2005). Therefore, it was used on unstable areas of paint within the manuscript.

HOUSING AND DOCUMENTATION

Rebinding the conserved single folios was never considered a viable option. The folios remain intrinsically fragile, present no evidence of the original quire arrangement or binding structure and the existent velvet cover is unsound. Rehousing of the folios was designed to satisfy three critical considerations: a high level of protection, ease of handling and display, and a desire to reflect the folios' origins as part of a bound manuscript. Various solutions were discounted; for example, window-mounting seemed inappropriate for book pages, unwieldy for readers and space-intensive for storage. An original solution of securing each folio within a slotted folder of heavy paper was pursued, therefore allowing folios to turn freely and giving no priority to either side (Figure 8). The use of hinges at the spine edge reaffirms the folios' origins as part of a bound manuscript, whilst

Figure 8. Folder functionality, showing op. cit., folios 9a and 8b

pulling the hinges through slots in the central crease of the folder results in a more satisfactory mechanical structure.

Due to concerns about housing pH-sensitive organic dyes and pigments in alkali-buffered paper, an unbuffered 230 gsm Heritage Archival pHotokraft paper in white was selected for the folders. The folders have been designed to provide a generous margin all around in order to offer suitable protection to each folio. Four slots are cut at equal spaces along the centre line, which is then creased to form the folder. Four hinges of Japanese *usumino* Hasegawa paper are cut cross-grain with one long edge water-cut to produce a feathered edge. The feathered edges are attached using dilute wheat starch paste with minimal overlap along the spine edge of each folio, and then the hinges are pulled through the slots in the folder and around to the back where they are pasted out and adhered. This folder can be opened to 180° to consult the folio, but it can also be folded completely back upon itself for display purposes. This allows two folios to be placed next to each other with no gap in order to recreate an opening. The flexibility of this housing system enables all possible combinations of double-page openings. The retained strips of each decorated guard were housed separately in polyester sleeves, together with fragments of the thin paper and the later binding.

Documentation for the project was extensive and comprehensive. Every folio was photographed before, during and after conservation. An important step was to keep a record of the arrangement of the decorated guards and the thin paper found beneath prior to their removal. In addition, numerous raking light, macro and microscope images were taken to provide evidence of important details found during conservation and to contribute to the understanding of the techniques and materials used in the creation of the manuscript.

CONCLUSION

The originality of this project lays in its wide scope to set a conservation treatment within a broad range of complementary activities. Comparative study of associated manuscripts and experimental sessions with specialists provided the opportunity to expand knowledge and investigate alternative approaches. Broad discourse was instigated through lectures and a display which have shared related research concerning dyes and inks with public and academic audiences, meeting contemporary interest in the materiality of manuscripts.

The many facets of the research undertaken proved crucial to devising a treatment grounded in an intimate understanding of the aesthetic and material characteristics of the manuscript. Removal of inadequate 19th-century interventions and stabilisation of damage have reinstated the visual integrity of the manuscript. The final step of reconciling the bound format to handling and display as loose folios resulted in a housing solution of relevance to many collections.

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NOTES

1 This manuscript is dispersed between the British Library, London, UK (BL Or 12208) and the Walters Art Museum, Baltimore, USA (W.613).

2 This manuscript is dispersed between the Walters Art Museum (W.624) and the Metropolitan Museum of Art, New York, USA (MS.13.228.26-33).

3 Azurite and lead white were identified with X-ray fluorescence analysis.

4 It is not unusual for Islamic manuscripts to have undergone a series of refurbishments with the dual purpose of preserving them and enhancing their appearance, often causing irreparable damage to the original.

REFERENCES

Barkeshli, M. 2016. Historical Persian recipes for paper dyes. *Restaurator* 37(1): 49–89.

Barkeshli, M., Paper dyes in Persian medieval manuscripts. Unpublished work, lecture, Bodleian Libraries, Oxford, 16 May 2018.

CSGI – Solutions for Conservation of Cultural Heritage. 2015. Nanorestore gel dry. http://www.csgi.unifi.it/products/dry.html (accessed 10 October 2020).

Geiger, T. and F. Michel. 2005. Studies on the polysaccharide JunFunori used to consolidate matt paint. *Studies in Conservation* 50(3): 193–204.

Hofmann, C., A. Hartl, K. Ahn, I. Faerber, U. Henniges, and A. Potthast. 2015. Studies on the conservation of verdigris on paper. *Restaurator* 36(2): 147–82.

Hofmann, C., A. Hartl, K. Ahn, K. Druceikaite, U. Henniges, and A. Potthast. 2016. Stabilization of verdigris. *Journal of Paper Conservation* 17(3–4): 88–99.

Malešič, J., J. Kolar, and M. Anders. 2015. Evaluation of treatments for stabilization of verdigris and malachite containing paper documents. *Restaurator* 36(4): 283–305.

Meyer, F. and A. Neumann. 2009. Recombinant proteins: A new material for the chemical stabilisation of copper pigment corrosion on paper? *Restaurator* 30(1–2): 96–130.

Pataki, A. 2009. Remoistenable tissue preparation and its practical aspects. *Restaurator* 30(1–2): 51–69.

Quandt, A., E. O'Loughlin, P. Anderson, and P. Hepworth. 2002. Remoistenable tissue for mending paper damaged by copper pigments. Unpublished handout from the IIC 2002 Baltimore Congress, Baltimore MA, 1–6 September 2002.

Rose, K. 2007. The conservation of a seventeenth-century Persian *Shahnama*. In *Edinburgh Conference Papers 2006: Proceedings from the Fifth International Conference of the Institute of Paper Conservation and the First International Conference of the Institute of Conservation, Book and Paper Group, 26–29 July 2006*, ed. S. Jacques, 79–86. London: Institute of Paper Conservation.

Royo, M. 2017. Conservation Safavid dynasty manuscript: Study of copper corrosion inhibitor and consolidation. *Journal of Paper Conservation* 18(4): 151.

Sawicki, R. 2012. Remoistenable tissue recipe for the repair of corrosive pigments in Islamic manuscripts. In *AICCM National Newsletter,* No. 122 August 2012, 14–15. Canberra: AICCM.

Seyller, J. 2001. *Pearls of the Parrot of India: The Walters Art Museum* Khamsa *of Amīr Khusraw of Delhi,* Journal of the Walters Art Museum Series, vol. 58, 5–176. Baltimore: The Walters Art Museum.

Stanley, T. 2006. A conservation case study of Persian miniatures. *Restaurator* 27(3): 162–77.

MATERIALS LIST

Agarose Low EEO
https://www.nbsbio.co.uk/

Berlin tissue
https://gmw-shop.de/en/

Bermocoll® Ethyl Hydroxyethyl Cellulose
https://celluloseethers.nouryon.com/

Hasegawa paper
http://www.washikobo.com/

Heritage Archival pHotokraft
http://www.cxdinternational.com/

Intō (Japanese seal engraving knife)
http://www.yosinobu.com/

JunFunori®
https://www.kremer-pigmente.com

Minotake paper
Yoshida Co. Ltd., 18-2 Umazuka-cho, Yasui Uzumasa, Ukyo-ku, Kyoto 616-8077, Japan,
wagamiya@topaz.ocn.ne.jp

Nanorestore Gels® Dry
http://www.csgi.unifi.it/products/dry.html

Photogelatine Type Restoration 1
https://gmw-shop.de/en/

Tengu Japanese Paper
http://japanese-paper.hidakawashi.com/

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