

# Two Women, One Very Large Qur'an, So Little Time: The Conservation of an Oversized Early Fifteenth-Century Mamluk Qur'an

## ABSTRACT

This paper outlines the decision-making process and treatment undertaken during the conservation of an oversized early fifteenth-century Mamluk Qur'an prior to exhibition. There were unique problems associated with the conservation of the incomplete gatherings of an ornate calligraphic text on Islamic paper, including sourcing strong, toned, and suitably sized repair papers and deciding on the final binding of the large, incomplete text. Details of the paper repair techniques and the final housing are outlined as part of the treatment to return the Qur'an to a more stable and attractive condition while at the same time meeting the expectations of both the conservator and curator.

## INTRODUCTION

During the 2004 closure of the Islamic Gallery for redevelopment, a traveling exhibition of star objects from the Islamic collections of the Victoria and Albert Museum (V&A), London, started a world tour in Washington, D.C. The Mamluk Qur'an (museum no. MSL.7217-1869) was required to join this exhibition for the Texas and all subsequent venues before returning to the museum. The Qur'an is now on permanent exhibition in the Jameel Gallery of Islamic Art, which opened in July 2006.

The manuscript is the incomplete gatherings of an early fifteenth-century Mamluk Qur'an of Syro-Egyptian origin and is believed to be the second largest Qur'an known. It comprises nineteen foliated large-format leaves (five folios and seven bifolia; average dimension 96 x 68 cm) with calligraphic text in carbon black ink.<sup>1</sup> The text is richly decorated, with *surah* headings (chapters of the Qur'an) and ornamental fore edge margin instructions in red, green, and blue pigment with gold leaf illumination (fig. 1). During the condition assessment evidence was found

of sewing holes, but there was no other indication of a binding structure.

The support leaves are an Islamic wove paper. The fiber furnish is a flocculent or clumped arrangement of short-length fibers with very little wet strength. This lack of strength may be due to insufficient internal size prior to the formation of each leaf or to too little beating of the fibers leading to inadequate inter-fibrillar bonding and poor quality fiber furnish.

A pink-pigmented surface size had been applied with uneven brush strokes to all leaves except f1 and f2, which have the characteristic biscuit-brown color of Islamic papers.<sup>2</sup> In Syria and Egypt red was considered the color of festivity and joy, and the light red and rose-tinted papers were popular for this reason. Vegetable starch size was usually used to produce a suitable non-absorbent surface, with



Fig. 1. Folio 18r showing *surah* headings and margin instructions

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Fig. 2. Jane and Karen handling damaged leaves

sizing and burnishing of papers being performed by the papermaker, paper dealer, or calligrapher.

Each bifolium consists of two leaves joined at the back fold. They may have been formed during or after the papermaking process. The ease of paper splitting along the torn areas suggests that a typical folio comprises two leaves couched together before drying, or perhaps that the fibers were compressed on each side of the leaf during sizing and burnishing.

#### CONDITION

The general condition of the leaves was poor. The manuscript could not be handled safely or the leaves turned without further risk of damage to them, including the worsening of tears emanating from the gutter edge and back fold (fig. 2). There were considerable previous paper repairs to several of the folios and along the gutters of some bifolia. Most of the bifolia had skinning and large areas of loss along the gutters, which may be due to mechanical damage when they were previously disbound. All leaves suffered from weakness of the paper fibers at the corners and edges and there were numerous tears along most edges. Overall the two significant types of damage to the leaves were: (1) weakness, skinning, areas of loss, and tears in the gutters of the bifolia, and (2) weakness and considerable losses to the gutter margins of the folios. Some folios were evidently once part of conjoined bifolia that had been detached prior to acquisition.

Folios f9, f10, and ff17–19 had extensive losses to the gutter area, which may be attributed in part to the mechanical removal of the conjoined bifolium (fig. 3). The damage and extensive areas of loss were probably a result of the gatherings not being supported by a binding; sagging of the oversized leaves during handling would have promoted tears from the gutter towards the center of the leaves and caused them to pull away from existing sewing with consequent areas of loss.



Fig. 3. Typical paper damage can be seen on f19

#### PREVIOUS HOUSING

All leaves apart from f17 were housed within a large Melinex sleeve and placed in a Polstore powder-coated metal storage drawer in the Indian Study Room. This housing was considered inadequate: the polyester sleeve offered no support for the leaves when handled, was causing damage when leaves were removed or replaced, and provided very little protection from pollutants such as dust and light (fig. 4).

Folio 17 entered the collection at a later date. It is understood that this leaf was not united with the existing gathering of the Qur'an but treated as an example of calligraphy; at some time in its history it was repaired, trimmed, and mounted (fig. 5). After discussion with Tim Stanley, senior curator in the Middle Eastern Section of the Asian Department, it was agreed that the leaf should be returned to its original format and reunited with the remaining leaves of the manuscript.

#### STRUCTURE OF THE TEXT BLOCK

The diagram shows the overall structure of the nineteen leaves during condition checking (fig. 6). Leaves ff1–2, ff3–8, and ff11–16 appeared to be three separate gatherings with complete bifolia. Leaves f9, f10, and ff17–19 had severe tearing to the gutter areas suggesting they were once half of a conjoint bifolium, which was confirmed by the curator.



Fig. 4. Leaves in large Melinex sleeve



Fig. 5. Folio 17 mounted for display purposes

The leaves had previously been collated in a numerical order despite the broken sequence of *surahs* as denoted by the dotted line between some of the gatherings in figure 6. A conjoined bifolium missing from folios f9, f10, f17, f18, and f19 is denoted by a hooked, broken line.

PROPOSED TREATMENTS

During discussions between book conservation staff and the senior curator, it was decided the final treatment

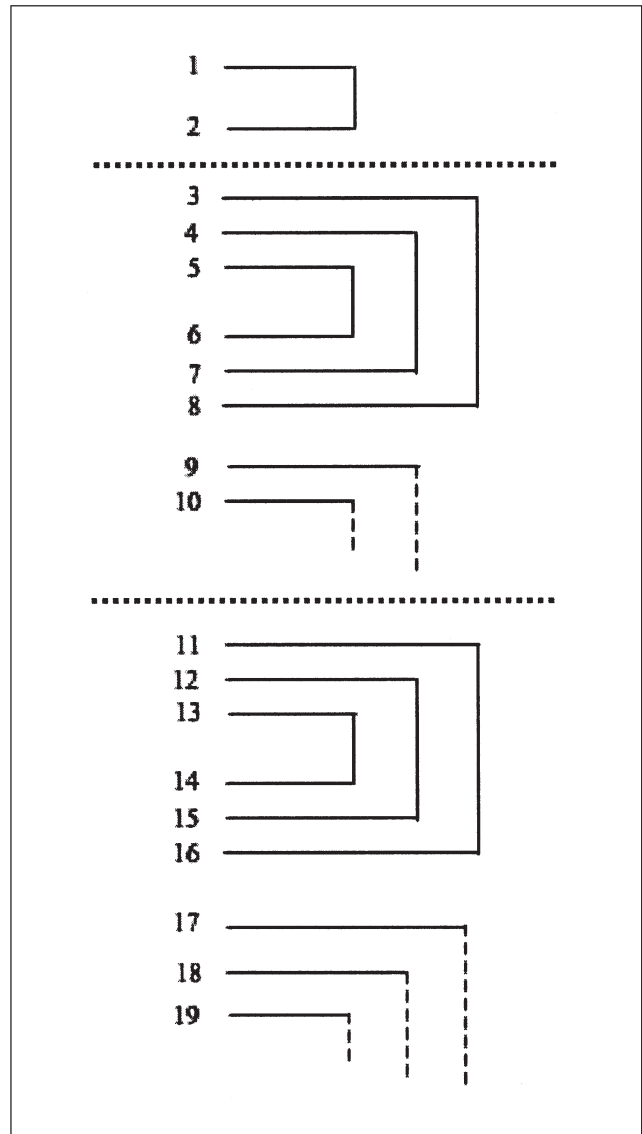


Fig. 6. Configuration of the nineteen leaves

should allow for consolidation of the gatherings into a reversible structure for the later inclusion of missing leaves, if located. Other treatment considerations reflected the need for the timely conservation of the Qur'an with a view to its immediate transportation, display, and future handling.

The following options were discussed for the text leaves:

- Repairs using commissioned infill papers and repair tissues from Griffen Mill Papermakers. These would have the correct thickness (in microns) and color to match both the biscuit-brown and pink-colored leaves.
- Japanese repair papers such as a medium weight *usumino* or *udo gami* for back fold guarding and infilling. Lightweight *tengujo* repair tissue to reinforce tears. All

repairs were toned with Winsor & Newton watercolor or acrylics.

The following options were discussed for the binding:

- Rebinding in a conservation-standard structure using a semi-limp binding and conservation-standard materials. This would be a non-adhesive binding style, allowing for easy disbinding if additional leaves were located and included at a future date.
- Rebinding as an Islamic binding suited to the age of the text, in keeping with the style of an early fifteenth-century Islamic binding. This would include using a link-stitch sewing structure and full-leather case with envelope flap.
- Resewing and protective rehousing only. This would require sewing the leaves link-stitch with the addition of protective endleaves and allow for the inclusion of additional leaves at a later date without removal of the binding. A custom-made portfolio would be constructed to protect the leaves during handling, transportation and eventual storage and retrieval when returned to the V&A.

#### PREVIOUS REPAIRS

All previous damage had been repaired using a white wove paper. The results of the Fourier transform infrared spectroscopy (FTIR) analysis revealed that the adhesive used was gum arabic. Repairs to the gutter areas of the folios were removed as they were placing additional strain on the paper around the repair area when leaves were turned (fig. 7). All other repairs were removed due to concern that the gum arabic was causing discoloration to the substrate and detracted from the decorative value of the ornate text leaves.

The paper and adhesive were removed using a fine mist generated from an ultrasonic humidifier. This allowed control of the amount of moisture penetrating the repair paper, adhesive layer, and substrate. Some adhesive residue could not be removed due to the weak wet strength of the paper fibers; if removal had been pursued it would only have contributed to further damage to the paper.

#### PAPER REPAIRS

The decision was made during the course of the paper repairs to combine the use of the Griffen Mill paper and tissue (fig. 8) and Japanese repair papers as suited to each repair area. Due to the number and complexity of the paper repairs the description of this work has been divided into two types: (1) Repair of the complete bifolia, and (2) more extensive repairs to the folios. All repairs were adhered with a dry wheat starch paste to reduce the chance of staining or distortion of the support leaf. The toning of Japanese repair

papers was achieved using Winsor & Newton acrylic colors series 2 or watercolors.

#### 1. Repairs to Bifolia

It was agreed that the most effective way to repair the tears emanating from the gutters of the bifolia into the text area would be to split the paper and insert a toned Japanese paper using wheat starch paste (figs. 9–10). This was to minimize the repairs obscuring the decorative *surah* areas or calligraphy, and to give greater strength by using a heavier



Fig. 7. Previous gutter repair using paper strips



Fig. 8. Chris Laver-Gibbs making the Islamic repair papers in the book studio

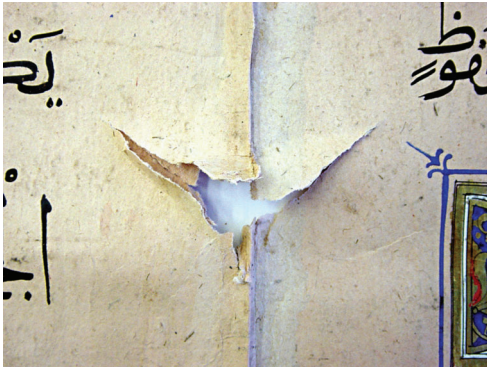


Fig. 9. Typical paper splitting for inserting a repair paper



Fig. 10. Toned repair paper pasted into position

weight repair paper than could be used on the exterior of the damaged area.

The outside of the back folds were repaired or strengthened using toned, medium-weight *usumino* or *uda gami* repair paper guards and wheat starch paste. All bifolia required this guard due to severe skinning along the gutters during their previous separation. The inside gutters were strengthened with a shaped strip of the Griffen Mill repair tissue and wheat starch paste.

All bifolia had weakness along the edges of the leaves. These areas were strengthened by splitting the leaves and inserting a dry wheat starch paste into the split and applying localized pressure. Edge tears were repaired by splitting the paper and inserting a supporting toned Japanese paper where possible or by supporting on the outside of the area of damage. Losses to corners and edges were infilled with the appropriate toned *usumino* paper and a strengthening layer of toned *tengujo* tissue on the verso of the repair area. Much time was committed to color matching as the tone across any single leaf was never consistent due to the uneven distribution of the pigmented size when originally applied with a brush.

## 2. Repairs to Folios

The gutter repairs of f9, f10, f17, f18, and f19 were extended beyond the size of the leaves to allow for the formation of a hook guard (fig. 11). This created a crease for sewing and indicated the evident removal of the conjoint folio. Paper Nao K38 was selected for its weight and toned as the infill piece with a layer on each side of the Griffen Mill repair tissue or toned *uda gami*, adhered with wheat starch paste. Again, where possible, the paper was split along the gutter edge in order to give maximum strength at the leaf/repair interface due to the weight and size of the leaves and the point at which the area of flex was being stressed.

## Binding

Originally a conservation binding was considered using linen tapes as the sewing supports, which could then be laced into a “paper over boards” limp binding. The intention was for the tapes to carry much of the strain and to give support at the spine with the action of turning the leaves. The option of a limp binding was favored as it would allow a structure without the use of adhesive should it be necessary to disbind in the future; an important factor in this decision was that the folios did not run consecutively and missing leaves may one day appear on the market and be incorporated.

Discussion with the curator brought up various points. Initially he felt very strongly that if the binding were not original or a facsimile of the style of binding that the Qur'an would have had originally, then it would be mis-



Fig. 11. Folio 19 after repair

leading to place it in a conservation binding. From the conservator's viewpoint it would be impossible to make a facsimile binding with board edges flush to the text block because the leaves were cut so unevenly.

After further discussion and explanation that the Qur'an could never be displayed at an angle due to the size and weight resting on the uneven text block edges, it was suggested that it should be bound — a decision influenced by display requirements in the Jameel Gallery. Disagreement on the final binding style deemed it prudent to leave it unbound but sewn. The agreement to not rebind allowed more time to determine the final protective housing for the Mamluk Qur'an on its return from the touring exhibition.

The final consolidation of the incomplete gatherings was agreed among the team. Priority was given to the need for a protective housing during transportation and handling and acknowledgment of the fact there was little evidence of the original binding structure. With all this in mind, it was agreed to consolidate the leaves using the link-stitch sewing incorporating protective endleaves. As it was impossible in the time available to source a paper large enough with correct tone, the endleaves were made of a heavy machine-made cartridge paper toned a similar pink to the text leaves using acrylic paint and wheat starch paste size. This resulted in a set of paste-paper endpapers that did not distract from the visual impact of the manuscript leaves while on display.

The decision was made to use a link stitch, but not the traditional link-stitch configuration used on Islamic codices. Ordinarily only two sewing stations are used, ignoring the format (size) and weight of the book, which may require support from the sewing at more than two points. Consequently a total of seven stations were used, five link stitches and two kettle stitches, which resulted in even support along the extensive length of the gutters of each gathering (fig. 12). Due to the preference for using a



Fig. 12. Consolidating the gatherings with link-stitch sewing

thin linen or silk thread the previous sewing had characteristically broken down and been lost over time; therefore, a decision was made to use unbleached linen thread.

The final housing included a custom-made portfolio and phase box. The portfolio was made with a full-size flap from the spine folds to protect the Qur'an and with three smaller flaps to give support and protection to the remaining edges. It was designed to enable the Qur'an to be viewed in the study room without removing it from the portfolio, in order to minimize handling and give support when on foam wedges. This in turn was put in a phase box for added protection, particularly at the corners, and for the purpose of packing and traveling to a number of venues in America and Japan.

## CONCLUSION

Nothing undertaken on this project was straightforward, as it posed many conservation and ethical dilemmas for the conservators. Handling of the manuscript during assessment and repair was extremely difficult, particularly due to its poor condition. There was a constant need to reassess decision-making on repair methodology, choice of repair papers, method of toning, and style of repair. In particular, ease of splitting the paper varied from one extreme to the other. Toning was a problem in that the pink sizing changed in hue and density across the surface of each leaf, resulting in poorer color matching in some areas than others. Finding a suitable and large enough paper with the grain running in the correct direction for the large infills required was impossible and we turned to Griffen Mill for assistance.

Balancing the problems with the solutions, the overall project was a success in that it achieved its main objectives:

- stabilizing the condition of the leaves
- strengthening the leaves, enabling them to be turned without further damage occurring
- gathering the extant leaves into a text block format
- providing the Qur'an with support for handling
- housing the Qur'an in a suitable conservation quality enclosure
- enabling the Qur'an to be accessible to the public.

Once treated the leaves looked much better and it was possible to handle them with ease and without the assistance of a second person supporting the folios on turning (fig. 13). The lack of adhesive allows for easy reversal of sewing and separation of the leaves. The simple sewing style has kept open the option of changing the sewing and including a binding at a future date. Ultimately, the removal of the previous repairs and consolidation of tears and infilling of missing areas allowed for a fuller appreciation of the ornate calligraphy and sheer size of the Mamluk Qur'an.

## ACKNOWLEDGMENTS

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## NOTES

1. Definition of folios and bifolia are based on the following: The large sheets folded in half are called bifolia (singular: bifolium) and each half-sheet produced by the fold is called a folio. The nineteen leaves of the Qur'an were foliated so that each folio represents two pages of the manuscript and the folded bifolium, four pages. Within the text and captions of this report, the folio number is followed by an r for recto or v for verso, e.g.: f12r.

2. The Raman spectrum obtained from the analysis of the small red particles found in the size was identified as hematite, or iron (III) oxide.

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Fig. 13. Repaired manuscript ready for cradle measurement