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Consolidating Persian Miniatures

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ABSTRACT

*This paper describes two case studies. One illustrates how an ultrasonic misting technique was successfully used to consolidate the flaking paint layers of a rare, illustrated, 13th century manuscript *Mihr wa Mushtari*. The other study describes the condition and subsequent treatment of a painting previously left untreated due to the unavailability of a suitable treatment method.*

In 1984 the author was assigned to treat a 17th century Islamic miniature painting where the paint layer was flaking. Research into the treatment of similar items indicated that this problem had been addressed previously. The treatment record was not available, but it appeared that the consolidation process was done using gum arabic, applied with a fine brush. The results were undesirable: treated portions were darkened and disfigured. As no other suitable method was available, a decision was made to not

actually treat the painting but to use preventive measures. A number of years later, Stefan Michalsky of the Canadian Conservation Institute (CCI) developed an ultrasonic misting system that made it possible to consolidate flaking paint on such delicate items.

INTRODUCTION

The art of Persian miniature painting dates from the 13th century, reaching maturity in the 15th century, under the rule of the Timuri dynasty. At that time the miniaturist combined the arts of scribe, illuminator and book-binder to produce some of the finest books ever seen. The Persian miniature is executed in a firm yet delicate line with a superb understanding of color harmony. The Persian artist evokes mood rather than striving after the presentation of the interplay between action and emotion (Baqir, 1964). Regardless of the subject matter, Persian artists executed paintings using the best quality materials and great expertise. This combination of

quality materials and superb control in execution resulted in masterpieces, which after the passage of many centuries, still retain their gloss and freshness.

Persian miniatures are similar to those executed in the West; both painted on book-sized supports. But the similarity ends there. Unlike the Western painter, Persian miniaturists executed paintings in album form and as book illustrations. There are also frescoes and paintings which were executed on long scrolls, but these are few in number.

CONSERVATION OF PERSIAN MINIATURES

Persian miniatures were executed as album sheet or book illustrations. Both allow the enjoyment of the art in all its minute detail. However, frequent handling puts them at risk of damage. Due to the unique nature of the materials and techniques used to produce miniature paintings, a specially designed conservation treatment method is required. Unfortunately in Pakistan, India and other neighboring countries, traditional non-scientific, treatment is done by craftsmen (repairers). These 'repairers' carry out work where the results are sometimes unsatisfactory. The author has initiated a project which aims at establishing a complete system for the conservation of Persian/Islamic miniatures (Madani, 2002).

In the case of miniature painting, selection of the appropriate conservation materials, methods and techniques minimizes the loss of integrity of the object and helps retain its essential character. Likewise, if serious and in-depth care is not taken during the examination and conservation of these paintings, great loss of value or even a complete disaster would be the outcome of the conservation treatment.

Consolidation:

The degradation of the paint layer is a common phenomenon that affects the condition of Persian miniature paintings. Paint layers can become powdery or lift off the surface of the page. Disintegration of the binding medium is a major cause of flaking and powdering of paint layers,

although other factors such as abrasion and excessive flexing of the leaves can also contribute to losses in the design. A total loss of painting may be avoided by consolidating the flaking or powdery pigment at an early stage.

A condition survey of miniature painting collections, conducted by the author in selected Pakistani museums, galleries and private collections, shows that the flaking of paint layers and powdering are the principal causes of deterioration in these works. The nature and amount of binding media, character and thickness of support, climatic conditions, handling and storage conditions are factors responsible for this degradation.

Pigments used in Persian miniature paintings are either vegetable extracts and biogenic dyes or powdered minerals. Prone to chemical reaction, these may show a drastic change in the tone or shade of colour if an inappropriate consolidant or unsuitable method of application is used. An inappropriate consolidant may produce an undesirable gloss, may be sufficient to damage the painting and/or confuse a scholar about its history; and may even affect the painting during subsequent treatment. Before selecting a consolidant many factors have to be considered: acidity or alkalinity, emission of dangerous degradation products, flexibility or brittleness, solubility or removability, and discoloration. The methods of application are also relevant. Brushing can pick up the powdery pigment; immersion and spraying are not reliable since they do not provide good control (spraying may cause the tiny, detached pieces of paint or powdery pigment to flyaway and immersion is undesirable because it is an overall treatment instead of a local treatment).

At the Canadian Conservation Institute (CCI) in Ottawa, Canada, a new method of consolidation using ultrasonic misting has been developed. Ultrasonic misting works by using an ultrasonic humidifier to produce a super-fine, cool mist that contains particles of the consolidant in solution. The main advantage of this

technique is the ability to control the quantity, velocity, and location of the solution. Ultrasonic misting makes it possible to apply several applications of a relatively low concentration of solution (Dignard, Douglas, Guild, Maheux, & McWilliams, 1997).

CASE STUDIES

'Sarmad, the Thrall of Love'

In 1984 during the routine inspection of the painting collection, the curator of the manuscript collection of National Museum of Pakistan observed surface dirt and delamination of the wasli on a rare 17th century miniature painting titled 'Sarmad, the Thrall of Love' (Figure1). A closer examination of the painting in the Laboratory showed degradation of the paint layer. It was evident that the correction of design surface was a situation where extensive care, an adequate amount of information and vast experience were required. Research into any previous treatment was made undertaken. The result was not promising. A painting with the same problem had been treated many years ago by a chemist but a treatment record was not available. However, examination under a stereoscopic microscope revealed that the consolidation process was done with a fine brush and that the consolidant used was possibly gum arabic. This assumption was made due to the darkened treated portions. The treatment results were undesirable. Treated portions were darkened and disfigured because of the inappropriate consolidant and method of application. The author attempted to gather the information on the subject but no satisfactory information was found. Some preventive measures only were applied to the painting.

Reconsidering the Painting for Conservation Treatment

In 1995 the author initiated a project regarding the conservation of Islamic/Persian miniatures. Results of various tests gave confidence to start the conservation treatment of 'Sarmad, the Thrall of Love' (Madani, 2002). The painting was brought to the Laboratory once again and its condition was

documented and compared with the condition recorded in 1984. Fortunately very few changes were took place during the past 19 years. Delamination of wasli support was extended around the edges due to disintegration of adhesive and the pigment layers were more weakened.



Figure 1: 'Sarmad, the Thrall of Love'



Figure 2: Details of 'Sarmad, the Thrall of Love', degradation of pigments is shown

It was evident that a consolidation process would be necessary. Ultrasonic misting as method of application was the final choice.

For a consolidant there were two choices, funori (a seaweed-based adhesive) and sodium carboxymethyl cellulose (CMC). Experiments showed that funori has many advantages over other consolidants. It does not affect the visual alteration, it is flexible, and does not discolor the pigment. A reported disadvantage is that it is hard to remove. CMC is easy to remove and does not affect the flexibility. However, if used in high concentration it gives the surface an undesirable shine and over the time the medium darkens (Madani, 2002, pp146-47). Some simple tests were performed on surrogate objects to verify the results with CMC and funori consolidation. The final choice was a low (0.5%) concentration of CMC. This decision was supported by the fact that the reactivation of the existing binder can be accomplished by the addition of plain water (AIC 1994).

The miniature was placed on a work surface under illuminated magnifier to closely watch the process during the course of treatment. Several layers of solution were applied. After every application the location was allowed to dry and was tested with the dry tip of a cotton swab. On most locations two to three applications were sufficient to achieve good results. After the completion of the consolidation operation, other necessary repairs were carried out which are not mentioned here.

Illustrations of 'Mihr wa Mushtari'

Ja'far Tabrizi was the scribe of a manuscript of the romantic poem, *Mihr wa Mushtari* (The Sun and The Jupiter) by Assar (Literally means the oil presser) completed in 1420 in Tabriz. This manuscript is now in a private collection, a copy of 1471-72 and another of 1596 is in the collection of the British Library and a copy of 1477-78 in the Freer Gallery, Washington DC (Norah, 1983). Another illustrated copy is the property of Rashid Abdullah, a Karachi based gentleman. Rashid Abdullah's copy was transcribed by

Nizam Katib (the scribe) b. Fakhr Gavari in A.D. 1475-76 /A.H. 880 somewhere in Iran. The manuscript has 11 miniatures in Heart style [Figures 3, 4]. This is a very rare copy transcribed in beautiful Nastaliq script. The manuscript was in poor condition when acquired by the owner. Apart from damage to the paper support, the miniatures were showing degradation of the paint layer. Blue had undergone the water damage. Green (verdigris) had charred and weakened the paper on the locations where it was applied, and stained the whole section brown. The miniatures showed a previous 'non professional' repair with self-adhesive tape. These repairs were causing discoloration and embrittlement of support. Removal of these repairs was a very sensitive operation. Repairing tape was fixed not only from the back of the miniatures but somewhere on the front to save the loose green pigment. After close examination and tests it was decided to remove the repair using a mechanical, not chemical method. A heated spatula and simple tools were used to remove the repairs.

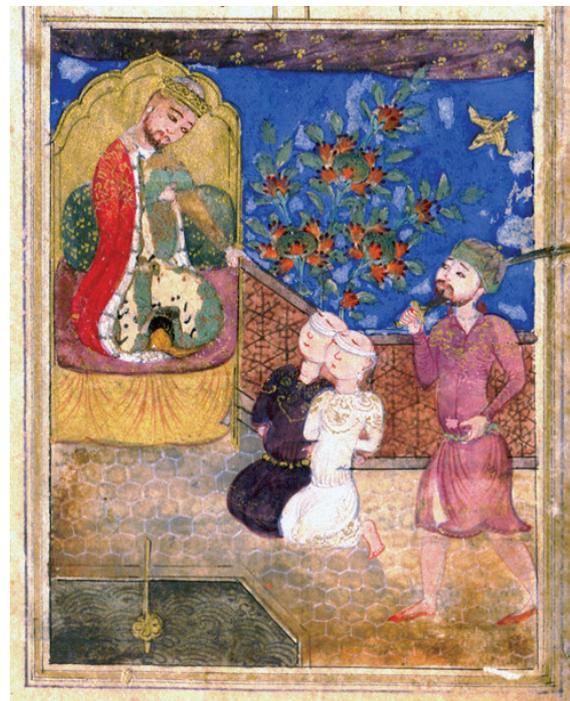


Figure 3: A miniature from 'Mihr wa Mushtari' showing damage to blue pigment.

Three consolidants were tested: Klucel-

G® (0.5 and 1.0% solutions in ethyl alcohol), funori 1.0% concentration and methyl cellulose 1.0% solution. Klucel-G and methyl cellulose were ruled out in this case because Klucel-G® produced a shine on test samples and methyl cellulose required a heavy concentration which was unsuitable for indigo. Funori was selected in 0.5% concentration and gave excellent result. Ultrasonic misting was done placing the painting in a controlled humidity, maintained up to 50%. This was necessary because heavy moisture retards drying time resulting in the possible dispersion of pigment. On many locations two or three applications gave satisfactory results. After consolidation other treatments were performed.



Figure 4: Another miniature from 'Mihr wa Mushtari', showing degradation of green pigment

CONCLUSION

Scientific investigation and technology has contributed to the field of conservation. Collaboration and connections between technologists and scientists and conservators have produced ultrasonic misting and suction table techniques that

have made difficult tasks easy. Conservation of Persian miniatures needs special care and research. Traditional repair of such paintings and illustrated manuscripts in the subcontinent by local 'repairers' includes patching and filling of losses, and repainting of degrading paint layers and may lead to unsatisfactory results. New technology has made the conservation treatment of Persian miniatures possible without damaging them.

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