Research on papyrus mounting with Japanese paper inlay

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In my work as a conservator of drawings and papyrus, I adapt techniques normally used for drawings to the conservation of papyrus. I have been researching new solutions for displaying and mounting these documents for several years.¹ I came to propose the use of multi-layered Japanese paper in the making of papyrus mountings thanks to the work of my colleagues in various institutions and the use of multi-layered inlays at the conservation workshop of the Louvre.²

General principles of Japanese paper sheet preparation

For several years, sheets of multi-layered Japanese paper have been used in the Louvre as inlays for drawing mountings.³ The sheets are glued together with wheat starch paste (i.e. ‘lined’). The final sheet thickness can be increased by multiplying layers. After lining, sheets are first air-dried and then slightly humidified by being flattened under a press or via tension. Before lining, the paper can be toned with either brushed or sprayed watercolour or acrylic paint.

Fig. 1: Clouet drawing in a Japanese paper inlay Musée Condé de Chantilly.

¹ For descriptions of the classical mountings for papyrus see: Krutzsch 2009, 43-50, and Leach 2005, 193-98.
² For description of the making process and use, see Menei and Caylux 2016.
³ The inlay is made of a paper sheet with a window cut out around the drawing. The drawing is attached to the sheet on the edges, enabling it to be handled and displayed in its entirety.
The window housing the papyrus is cut out by transparency on a light-table, following the edges of the document. The papyrus, after it has been consolidated and flattened, is protected by a thick Mylar sheet. Due to the physical characteristics of the Japanese paper fibres, four cutting methods are possible: sharp cutting with a scalpel, shredding after puncturing with a needle or water cutting. In the latter case, the fibres may be slightly cut or left their natural length. These cutting methods offer physical and aesthetic advantages and may be chosen according to each document and its physical condition. Moreover, sheets may be used in different ways.

Fig. 2: Japanese papers, one tone, one white ready for lining.

Fig. 3: Examples of Japanese paper cuttings from left to right: water cuts (natural length), water cut and trimmed, shredded, sharp cut.
However, the technique used for drawings had to be adapted to meet the special characteristics of papyrus. We experimented with several processes.

**Use of multi-layered Japanese paper sheets with papyrus pasting**

Two types of mountings are described here: the first, with an insertion between two sheets of glass and the second, with an insertion in cardboard folders.

*Funerary text, Papyrus SN2, Calvet Museum, Avignon*

This large papyrus made of numerous fragments of various sizes was to be displayed vertically. We prepared a sheet made of two Japanese paper layers matching the size of the sheets of glass. The natural off-white tint of Japanese paper was left untouched. The document was placed at the centre of the sheet, protected with a thick Mylar sheet and a window was delicately shredded with a metal needle following its edges. Fibers that were too long were trimmed with scissors in order to avoid blurring the edges. The edges of the resulting window were then lightly pasted and attached to the papyrus. Loose and undefined small papyrus fragments were attached to the sheet, in blank spaces, with small Gampi Japanese paper strips.

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4 Dr. E Herbin, Egyptologist, Senior researcher in CNRS, who helped mount the document, suggested realistic blank spaces, as the small number of remaining characters make a precise localization impossible.
Set of Arabic papyrus documents from Edfou, the Louvre, Department of Islamic Arts

The researcher in charge of studying these documents had asked us to research a mounting device that would be lighter than the traditional glass mounting.5 After each document has been treated and flattened, it is housed in a multi-layered Japanese paper sheet. Windows are then cut out by puncturing the sheet with a metal needle or water-cutting and papyrus fragments are then attached to the window edges after pasting their fibres with diluted wheat starch paste.

Fragments are always restored to their former position on the sheet, considering text coherence and restitution hypotheses. Very small fragments whose place has not yet been determined are attached to the inlay via a paper strip, awaiting further investigation. A conservator can easily extend the existing window in order to place a fragment without dismantling the whole document. After cleaning and consolidation, former inventory tabs are attached to the inlay. Documents can then be handled by holding the inlay, which is as thick as the document.

5 Dr. Anne Regourd, papyrologist and epigraphist working on Arabic texts, now Senior Researcher at the University of Copenhagen, was in charge of the programme for the publication of the Edfu papyri.
Fig. 6: In cutting along the solid edges of papyrus documents, fragile fibres are left untouched so long as they are supported by the paper.

Fig. 7: Handling Louvre Al papyrus E6922.

Fig. 8: Papyrus Louvre Al E7334 in its folder.
Sheets are then inserted into neutral cardboard folders with paper flaps. Two strips of Japanese paper attached to the corners prevent the document from moving. This process makes the documents look like pages from an archive, as they originally did. Although they cannot be consulted frequently and must be handled carefully, the documents can still be inserted between sheets of glass for consultation or display.

But, in the types of mounting using paste to fix both the Arabic and funerary text papyri, we can see that distortions appear around the Japanese paper sheet. This is unsatisfactory. Moreover, the existence of fibres along the edges of the document slightly blurs the edges of the verso.

**Use of multi-layered Japanese paper sheets without papyrus pasting**

Pasting generates tension, so we suggest avoiding it. This can be easily done as most documents are sandwiched between two sheets of glass or between a cardboard backing and a glass sheet. However, we must prevent fragments from moving inside the mounting when handled.

*Magical papyrus, Louvre E 32309*

This small document comprises three isolated fragments. After conservation, the distance separating each fragment was calculated on the basis of a hypothetical restitution of missing characters proposed by the curator. At first, windows were cut out by shredding with a needle but the irregular result was unsatisfactory. Edges were then cut sharp with a scalpel. The Japanese paper was toned before being doubled. Two tints were proposed and submitted to the curator. This research into tinting inlays offers new possibilities: darker tinted areas may be used to indicate the overall shape of a document where lost fragments once appeared.

The thickness of the paper is calculated to match that of the papyrus. The document does not suffer from excessive stress while being held in place, which prevents distortions. Since it is maintained along all its edges, it cannot move within the mount, even during handling or transport. Both sides can be seen perfectly without any alteration to the edges.

We believe this type of mounting is quite promising and plan to apply it to a large-sized medical papyrus with very fragile fragments.

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6 Folders are currently used to store large amount of papyrus (Kaye 2015, 1-3).
7 Document studied by Mr. Marc Etienne, Curator in the Louvre’s Department of Egyptian Antiquities.
Fig. 9: Top, straight cutting; above, punctured shredding.

Fig. 10: Proposed toning of losses on the Japanese paper for Louvre AE papyrus E32309.
Christian manuscript in Tamil carved on palm leaves*, Musée savoisien, Chambery

Outside the field of papyrology, we have recently had the opportunity to apply this type of mounting to documents carved on palm leaves. Such manuscripts can be found mostly in South India, Ceylon and Indonesia. Four layers of Japanese paper were pressed together to create the required thickness. Both outer layers were toned with water-colour beforehand. We chose a spraying technique to tint the paper because several coatings were necessary to obtain a deeper tint, and this avoids damaging the paper’s surface with successive brush strokes. After drying and flattening, a window in the Japanese paper inlay was cut sharp along the edges of the palm leaf.

Fig. 11: Mounting for palm leaf manuscript, detail.

Documents could be inserted into the resulting compartment and the mounting made of two sheets of glass could be sealed. Both sides of the sheets are perfectly readable for research and can be easily placed on display.

Prospects

We believe that this type of mounting using Japanese paper inlays meets current preservation requirements but we also aim to highlight the aesthetic value of these mounted documents: the beauty of the materials (papyrus and inks) and the elegance of Egyptian calligraphy. Our research is far from over and should be developed and improved.

Preparing the lined sheets of Japanese paper is, however, rather time-consuming and expensive. Although we are aware that it is not appropriate for all situations, it represents an additional option to conservators.

We believe it would be interesting to consider papyrus mounting according to the type of text exhibited. In our own writing traditions, notaries, deeds, medical prescriptions or poems are all presented in different ways. The range of mounting possibilities may highlight these

9 Research on this document is currently being carried out by Mr. J.-L. Chevillard (CNRS/EFEO).
differences and allow the public to access the documents more intuitively.

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Bibliography


