Conservation of the great medical papyrus Louvre E 32847

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Some works may be historically significant but in disastrous condition. In 2010, the Department of Egyptian Antiquities of the Louvre asked us to undertake research on the physical condition and possibilities for intervention on a large (estimated length of the scroll: seven meters) and exceptional papyrus, recently acquired by the Museum (inv.E 32 847)

The document inscribed recto-verso, dated to the New Kingdom of Egypt (1550-1050 BC) displays a medical treaty on each side. The first text was written during the reigns of Thutmose III or Amenhotep II (1479-1404 BC) and the second one 150 years later at the beginning of the Ramesside period as an updated version of the preceding text. The manuscript is written in hieratic script, with cursive hieroglyphs, in carbon black ink and some sections are inscribed in red ink. Because of its scientific importance, the papyrus was acquired in 2007 by the Department of Egyptian Antiquities of the Louvre thanks to the contribution of the Ipsen Group. Its general condition was however very preoccupying.

The oldest known papyrus is an unwritten scroll found in a tomb and dated to 3100 BC.

It shows evidence of a perfectly developed production process. The oldest inscribed papyrus excavated today is dated from the Old Kingdom during Kheops's reign (2550 – 2520 BC)

A sheet of papyrus is made from strips cut vertically from the stem of the Cyperus papyrus; two layers of strips would be laid down one upon the other at right angles and then pressed. Like all organic materials, papyri eventually suffer deterioration through ageing, but stored under good conditions, they can still be very light in colour, comparatively flexible, with a good consistency of fibres, even after 5000 years.

The dark brown colour and the fragile and crumbly material of the medical papyrus are indicative of an unusual and advanced state of deterioration. Fragments are placed into nine mounts without the corresponding top and bottom parts being joined. Fragments were attached with strips of self-adhesive plastic tape between two sheets of glass bound with opaque self-adhesive tape.

A very progressive approach was decided consisting of several steps in order to evaluate the practical possibilities.

After this preliminary evaluation, we were conscious of the extreme fragility of the document and our first intention was to limit our intervention to a maximum by only replacing the fragments and changing the glass of the mounts. But the papyrus was too brittle to be lifted out and handled without preliminary consolidation.

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On the basis of our previous practical experience in the conservation of papyri and that of our foreign colleagues, it was agreed to select funori (an adhesive paste made from Japanese seaweeds of the Gloïopeltis family). Our selection criteria for the lining paper were a great transparency so that the written side being covered should remain readable, a good solidity and a good penetrating ability to allow the transfer of consolidant. A number of the thinnest Japanese papers were tested.

We carried out tests on pieces of paper toned brown using watercolour paint and on pieces of unwritten papyri provided by the Egypian Antiquities Department. We have finally selected the Berlin tissue a handmade Japanese style paper based on a mix of kozo and mistsumata fibers.

We have developed a method for removing fragments from their mount using a sandwich of nonwoven fabric. The lining process alternates slow humidification, effective lining and impregnation with funori. The last step includes flattening under press.

The translation and study of the fragments being in progress we had to develop a temporary mounting to keep the fragments safe. We are now studying the options to create a permanent mounting allowing to look at both sides of the papyrus while securing the various fragments without pressure nor glue.