

Important Factors in the Deterioration of Classical Chinese Scroll Paintings

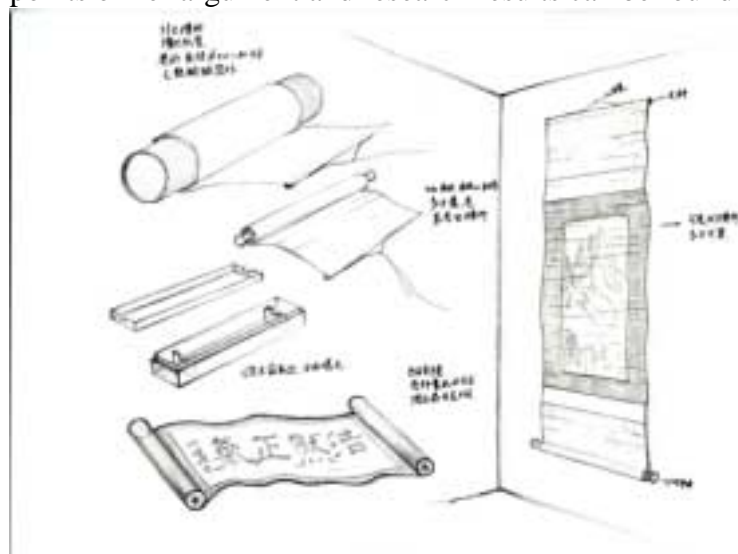
Hai -Yen Hua

Introduction

Hua Hai-yen is a restorer of Taiwanese origin, currently working in her own workshop in Mannheim, Germany, where she restore books, drawings, parchments, etc. She regularly writes on her work and research, and has published widely.

On her way to Taiwan in January of this year, she learned from the newspapers of a heated debate about whether or not a selection of the most exquisite and oldest works from the Palace Museum should be exhibited in the United States, and the possible harm this might bring to these fragile works of art. Ms. Hua entered this debate and spent her days in Taiwan taking part in numerous discussions on the state of works of art on paper, many over a thousand years old. Especially for this issue of the Paper Museum Magazine with its emphasis on restoration and conservation, Ms. Hua has written an article on those actions and conditions that may be harmful to ancient Chinese paintings.

Through her experience and research in this field she was able to add valuable comments to the whole discussion of conservation and restoration in Taiwan and elsewhere. The main points of her argument and research results can be found in the following article.



1. Aging of Materials

- The paper and silk fabric used in these types of paintings are composed of carbohydrates, whose molecules tend to lose their cohesiveness over long periods of time.
- The surface of the paper was often coated with alum, which would start to peel off over time.
- Resistance to stretching, tearing and erosion deteriorates with time.
- Fibres which were originally soft and pliant become hard and brittle with age, losing their flexibility and their ability to be folded or rolled.
- Exposure to an acid environment damages paper and causes it to yellow.
- The layer of natural protective gloss on paper may be lost because of repeated handling.



2 .Loss of adhesiveness: repeated stretching, contraction and swelling of the paper and silk can easily lead to separation at the glued points.



- a. Large paintings were composed of several pieces of paper which were put together. Places where they were joined can become separated.
- b. If the painting becomes detached from the paper onto which it was mounted, pieces of silk or paper can easily be broken off.
- c. The painting and surrounding inlay can easily separate at their points of attachment.
- d. The two or three layers of backing paper on the reverse side of the painting easily detach from each other.



3. Inability to adapt the environment: normally, paper can adjust to relative humidities which are not much different from its own, finding a stable equilibrium. The aged paper in classical Chinese paintings lack this ability.

- a. Because the scroll rods at the top and the bottom of the painting and the actual painting with its mounting are made of varying materials, their response to temperature and humidity also differs.
- b. Since the paper produced at the time was uneven in thickness, the sensitivity to humidity over the surface of the painting differs.
- c. The silk fabric used in these paintings is loosely knit, and the degree of stretching or contraction in response to changing humidity differs within the weave.
- d. Displays of the painting are often scheduled too loosely together, and in widely different environments, without providing enough time for the materials in the painting to adapt.

4 Rolling the paper during storage, resulting in warping.

- a. If rolled too tightly, the painting can be damaged by friction, while a loosely rolled painting was vulnerable to creasing or wrinkling.
- b. When the painting is rolled, uneven force used by the right and left hand, as well as the differing habits and methods of the people who do the rolling, not to mention the sheer number of people who handle the painting, also leads to distortions of the painting's original condition.
- c. When the paper's surface loses strength, its ability to resist the handling, its gloss and the waxy layer on the back of the painting will all deteriorate.
- d. Each time a painting is unpacked for display, and then repacked into storage, the necessary handling also inevitably damages the paper.

5. Changes that occur during the exhibition of a painting:

- a. Traditional methods specified that a scroll painting be rolled with the painting facing inward, and then stored away from light, in a box, at constant temperature and humidity. The sudden retrieval of the painting from its storage box, and placement in bright light, influences molecules in the fiber, and quickens aging of the paper and fading of the colours in the painting.
- b. Once a painting is hung for display, its entire weight is supported only by the upper scroll rod, and this is a drastic physical change.
- c. Since it is impossible to subject the scroll and the rope used to hang the painting to stress tests, there is always the danger of sudden breaks.

6. Problems in winding the scroll:

- a. Evenly rolling up a painting that could be fifty metres in length, at an appropriate degree of tightness, is a difficult task.
- b. In the event that only part of the painting is unrolled for display, the displayed and Undisplayed portions of the painting are subjected to different levels of tensile stress,
Also affecting their sensitivity to temperature and humidity.
- c. If a long narrow painting is completely unrolled for exhibition, warping or other distortions of the painting is common and difficult to rectify.

7 The strength of the lighting during the exhibition may not exceed 50 watts, or else it may affect the paper and colours. The lights often used by television and photographers will inevitably harm the paintings

Note: an extensive interview with Ms. Hua (translated into English) can be found in the latter part of this issue.