The Conservation and Restoration of the poster *Journée Serbe. 25 Juin 1916*

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1. The existing situation

The object (Picture 1) was found in the Serbian House on Corfu, Greece, from where it was sent to the National Library of Serbia. The poster came in a scroll box, and when it was opened it turned up to be a lithograph from 1916, made by the French artist Steinlen.

1.1. Description of the condition of the poster

*Picture 1. Appearance after conservation and restoration (photo: Jelena Simić, February 2015)*

**Title:** Journée Serbe. 25 Juin 1916  
**Creator(s):** Steinlen, Théophile Alexandre, 1859-1923, artist  
**Date Created/Published:** Paris : I. Lapina, [1916]  
**Medium:** Lithograph, color; 114,5 x 77,5 cm.  
**Summary:** Depicts a group of Serbian civilians and soldiers as they migrate to the mountains.
The poster came glued to a plastic wallpaper. Once it was straightened, it could be seen that the paper had changed color, because some parts were lighter (the cleaner parts) while some were darker and yellowed. The main problem with the poster was that it was not glued to the wallpaper evenly and that it was pretty wrinkled in the middle. In some parts, the glue from the wallpaper didn’t even touch the poster. Consequently, these parts stayed lighter and less yellow. Also, these parts were most likely to resemble the original state of the poster. The paper probably yellowed because of the glue from the wallpaper. The poster was not only yellowed. It was also dirty, with a fine layer of dust over the surface. In the lower left part of the poster there was a brown stain and in the top area there were stains as well. The edges were in a bad shape, especially the left and the right ones. They were torn and darker than the rest of the poster. In the lower right part, there was the signature "Steinlen 1916". It was later established to be the name of the author. Under the signature, there was a red fragmented inscription reading "25 Juin 1916 Journee Serbe" (in translation: "Serbian Day. June 25, 1916"). In the left bottom corner there was the name of the publisher: "I. Lapina. IMP. Paris", and in the bottom right corner there was information about the edition: “Edicion ‘La Guerre’”. 110 Avenue Viktor Hugo”.

1.2. Testing for microorganisms

Before any work being taken, certain steps should be taken. One of the first steps is testing for microorganisms. To establish the presence of microorganisms on the poster Lighting MVP system was used.

Lighting MVP is a very precise and easy to use device. It detects the contamination by measuring the level of ATP, a molecule that stores energy which can be found in all living cells, including bacteria, mold and all organic substances. The test uses an enzyme called luciferase, which is very sensitive to ATP. When combined with ATP, the enzyme projects light. The quantity of the light is directly proportional to the level of contamination. This device does not provide information about what type of microorganisms are present, but only if they are active. The test was done by taking sample from the surface of the poster with a swab. It was put in a cuvette which was closed, activating the sample. The sample was subsequently put in the MVP device for detection. The testing took about ten seconds. The results showed the value of 0.25, which meant that the object was not contaminated (Pictures 2 and 3).
2. Working process

2.1. Dry cleaning

Dry cleaning was used to remove the surface dirt before any wet treatment. The poster was dusted with a soft brush. Dust was also removed by using vinyl erasers. The problem with the poster was that it was constantly rolling up because of the wallpaper that it was glued to. So, the next step was to remove the wallpaper.

2.2. Removing the wallpaper

The paper was tested for water and it showed that the colors were not sensitive, but the paper itself was pretty delicate when wet. It was also tested on
ethanol to see if it would weaken the glue, but although it didn’t hurt the print, it didn’t help much with the glue either. Once it was established that the paper was more sensitive when wet, the next step was to try to remove the wallpaper with the help of a steamer. That didn’t help much either. The paper was still too sensitive. The best way to remove the wallpaper from the poster was to do it mechanically. It was done carefully, with the help of tweezers and a scalpel. The wallpaper was peeled from the poster (Picture 4). Still the poster was pretty wrinkled and dirty. The next step was to wash it.

2.3. Washing the poster

The major treatment in this conservation was washing the poster. By washing out the degradation products in the paper, such as dirt and soluble acids, the paper’s pH came closer to the natural pH value of 7 and it brightened. However, the main problem with this treatment was that the paper would probably disintegrate in water. So soaking it in water was not an option. Since it was established that the colors were not sensitive to water, it was decided that the poster would be washed with the use of Paraprint OL 60

2.3.1. What is Paraprint?

Paraprint OL 60 is a viscose non-woven fabric (manufactured by Lohman Vliesstoffe GmbH). It was introduced into conservation in 2001 by Susanne Kirchener for the wet cleaning of water sensitive paper objects carrying colored media. Using the Paraprint fabric, these objects were exposed only on their reverse to streaming water passing through a capillary unit. Paraprint OL 60 is a 100% alkaline-resistant 100% viscose non-woven fabric reinforced by acrylate binders. It has a weight per unit area of 60g/m² and a pH of 3.5–6.5 at a temperature of 20°C. Originally it was designed for coolant filtration and wound treatment. Kirchner lists the features of this
non-woven fabric that make it interesting for conservation: (1) strong capillary action, (2) high diffusion rate, (3) high wet strength and (4) physical stability.

The high rate of diffusion is due to the pore size in the swollen viscose fiber web which can be e.g. up to 25 times higher in viscose non-woven's than in blotting paper. By the capillary action of the thin viscose fibers, discoloration products are removed from the object that lies in contact with the fabric; this prevents the dissolved compounds to migrate back into the paper. The good wet strength of the material make it an ideal intermediate support for aqueous treatment.

![Comparison of polypropylene non-woven fabric (left) and viscose non-woven fabric (right) in raking light.](Picture 5)

### 2.3.2. Capillary Washing

The first step was to lay down the poster on a wet Paraprint, so that it could relax and flatten evenly. This was done very carefully because of the wrinkled parts. The next step was to dip one end of the Paraprint into water. That way the water would run through the fibers in Paraprint and also through the poster. In order to amplify the streaming of water, the table was put at a 30 degree angle. This way, the upper end of the Paraprint enables the dirty water, which has already gone through the poster, to leak down into a bowl (Pictures 5 and 6). Better cleaning effect was achieved by use of warm water (about 30 degrees).
After washing was complete, the poster was removed from the Paraprint very carefully. Since paper is very sensitive when it is wet, it was necessary to put a blotting paper over the surface of the poster. That way, because of the absorbing power of the blotting paper, the poster was easily pasted to it and therefore removed safely from the Paraprint.

2.4. Flattening of the poster

When the poster was removed from the Paraprint, the next step was to dry it and at the same time flatten it. This was done by putting the poster in an envelope between two Hollytex sheets and, over them, blotting papers to absorb the moisture.
from the poster. This envelope was put in a press. The blotting papers were changed several times until the poster was dry and flattened.

2.5. Lining

When dealing with fragile materials, it is often necessary to line them in order to give them additional strength and dimensional stability. This was the case with the poster. After it was dried and flattened, the next step was lining. The lining material was Japanese paper Sekishu-Shi, 31 g/m², 70% kozu, 30% pulp, pH 7.2. Glue that was used for lining was a mixture of methyl cellulose and starch glue (1:1). Lining was done on a table that had glass surface so that the Japanese paper would not stick to it. First, the glue was applied to the Japanese paper, then carefully the poster was pasted. After that a Hollytex sheet was put over the poster. So, the air-bubbles, that were captured between the support and the poster could be gently squeezed out with a use of the wide brush, without damaging the surface (Picture 7,8).

![Picture 7. Lining of the poster (Photo: Jelena Simić, February 2015)](image)

![Picture 8. Lining of the poster (Photo: Jelena Simić, February 2015)](image)
Finally, there were no air-bubbles left. The poster was glued properly to its new support and the Hollytex was removed. Once again, the poster was put in an envelope of blotting papers and Hollytex sheets to be dried.

2.6. Toned paper inserts

After the lining was successfully done, it became obvious that there were missing parts, mostly on the edges of the poster. Therefore, it was necessary to make inserts for these parts. The paper that was used for lining was also used for making inserts. As this paper was white, first it had to be toned, so that it would match the original. This was done with acrylic colors. In order to achieve the right shade, a few samples were made. When the right color was attained, the paper was colored with a wide brush, a couple of times, until the right shade was achieved. This was done so that the watery color would penetrate through the paper, making it equally colored, both on the inside and on the surface.

2.7. Making inserts

The poster was put on an illuminated glass table, so that the missing parts could be clearly visible. The shape of the insert was traced by putting a piece of Plexiglas on the spot with the missing part and then putting the toned paper over it. This way it was easy to tailor the right shape for the missing part. The insert was tailored with the use of an awl. Using an awl was important, because it provided the paper to be plucked rather than sharply cut. This way the fibers of the Japanese paper would better adhere to the edges of the missing parts. Once inserts were made, they were glued to the poster with starch-based glue, using a thin brush and tweezers (Pictures 9 and 10).
2.8. Retouching

The retouching was done on the inserted parts, using aquarelle paints (Pictures 11 and 12).
3. Suggestion for preventive protection

Good storage can extend the life of objects and is an important aspect of preventative conservation. The object should be kept at 20°C, RH 45–50%. The wrapping material should be acid-free. As additional protection, acid-free paper-based storage materials may have a buffer, such as calcium carbonate. The purpose of this buffer is to neutralize acids as they will form in the storage materials in the course of time. In the storeroom there should not be any shelves made out of wood. The light should be reduced to minimum, especially the ultraviolet light. When it is exhibited, the object should be placed under glass that has UV filters.
Bibliography