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CONSERVATION OF A *CHINE-COLLÉ* COLOUR ETCHING BY M. C. CRNČIĆ (c. 1910)

Resumen

Este artículo describe la intervención en un grabado en color *chine-collé* de M.C. Crnčić, circa 1910. El valor estético y la integridad estructural de la obra estaban comprometidos por suciedad, insectos, humedad y daños mecánicos por inadecuada manipulación y almacenamiento incorrecto. Tras los análisis físicos y químicos de los soportes

y elementos sustentados, y habida cuenta de la delicadeza del *chine-collé* y del riesgo de delaminación de los soportes, se decide adoptar una posición cautelosa ante la aplicación de cualquier tratamiento acuoso. La intervención incluye tratamientos de eliminación de manchas con geles, lavado acuoso, desacidificación y blanqueo solar. Los objetivos propuestos con la intervención fueron logrados satisfactoriamente.

Key-words: *chine-collé* etching, discolouration, analysis, aqueous treatments, sun bleaching

Object description

The *chine-collé* colour etching *Pod zidom* (c.1910) by Menci Clement Crnčić (1865–1930), from the Mažuranić-Brljić-Ružić Memorial Library and Collection, is a composite-structure paper support, comprised of the image-bearing layer of thin hand-made paper (*chine*) adhered to the secondary support (plate paper) of heavier machine-made paper. Both papers are made from cellulose fibres and were bonded together by starch adhesive during the printing process. The *chine* measures 457 × 275 mm and the plate paper measures 584 × 386 mm. The image extends beyond the edges of the *chine* onto the margins of the plate paper on all four sides,

c 1.5–2 mm, making the recognition of the *chine-collé* technique easier.

The etching with the motif of old Zagreb is coloured with *à la poupée* technique¹ and signed by the author in graphite pencil at the bottom right corner, under the sign *eau forte* (French word for etching).

Damage

The print was severely damaged by grime, insects, water, and poor handling and storage (Fig. 1). In addition to extensive surface and ingrained dirt on both recto and verso,

1 Different printing ink colours were applied directly to a metal plate using a ball-shaped wad of fabric and printed through just one run in the press.

nearly the whole top third of the print was significantly discoloured by an oil stain, and the bottom right corner by a water stain (tide line). The paper support became brittle due to acidity, which, in addition to mishandling, resulted in numerous areas of mechanical damage – tears, fraying and cracking, particularly around the margins and in the upper part of the print (a crack ran along almost the entire horizontal dimension). Silverfish (*Lepisma saccharina*) caused significant abrasion of the top layer of the paper support, on both margin and image, leading to several holes, and adding to the paper's fragility. Previous handling left remains of starch adhesive used to mount the work during framing as well as discolouration from repairs with self-adhesive tapes, all on the verso of the artefact.

Conservation treatment

The request of the owner and the goal of conservation treatment was to strengthen the weakened structure of the object, as well as to regain its visual coherence and improve its aesthetic value through the reduction of discolouration, stains, and acidity.

Due to the delicate nature of the *chine-collé* print, careful planning and a cautious approach were necessary to avoid treatments that might result in the separation of the two sheets forming the laminate paper support. A thorough physical and chemical analysis of both support and media was carried out in advance of any procedures. Chemical spot testing of extracted fragments revealed that both papers are made from cellulose fibres and do not contain lignin or rosin. Spot testing of the media indicated that all the inks used on this etching were stable in water, ethanol and aqueous solution of calcium hydroxide. PH tests by electronic pH meter showed that the pH value of the paper support was between 5.5 (plate paper) and 6.3 (*chine*). An Iodine Potassium Iodide Test indicated the presence of starch adhesive as a binder between both the two

sheets of paper and on the verso of the print. The absorbency test (*Water Drop Test*) of the paper support revealed that the oil-stained area was not absorbent at all, while other areas were very highly absorbent.

In preparation for treatment, the print was marked slightly around the corners of the *chine* with a very soft pencil to help reposition it should delamination have occurred during treatment.

After dry cleaning of the surface, impurities from the verso and of the recto-margins by brushing and erasures using a *Wishab* white sponge and a *Magic Rub* eraser, the reduction of discolouration and stains was first approached with the use of gels and solvents. A water-ethanol mixture (1:1) was sprayed across the surface before the 5% gel of *Tylose MH300P* with ammonia (pH 8) was applied locally, on stained areas. Remaining gel residue and impurities were then carefully rinsed under running water. Aqueous procedures continued with the suction table, capillary and blotter washing, allowing greater control, during which there were no traces of delamination, but also no results. After these attempts at stain removal failed, it became clear that bleaching would be necessary. Sun bleaching was chosen as the most sensitive treatment method; it is least harmful to cellulose and simultaneously used for deacidification. The print was immersed in a bath of an alkaline solution of calcium hydroxide (initial pH 9) for 3.5 hours, covered with UV-light filter polyester film (against the exposure to the damaging UV spectrum). The duration of treatment was carefully monitored, with suction table at hand, ensuring that the integrity of the composite support structure was maintained. This treatment result was very effective, not only in removing the acidic product and oil stain, but also the tide line and general discolouration.

After rinsing and partial air-drying, the sheet was flattened using the “hard-soft sandwich” technique,² between hard mu-

² A special method developed by Homburger and Korbel as a very gentle way to flatten heavily creased or sensi-



Fig. 1: Object before treatment
(photo by Iva Gobić Vitolović)



Fig. 2: Object after treatment
(photo by Iva Gobić Vitolović)

seum board and soft felt, to protect the delicate relief surface of an etching during the drying process.

Japanese paper and wheat starch paste were used to repair tears and reinforce creases. The areas of surface loss on recto damaged by silverfish were filled with microcellulose powder and 1.5% methylcellulose, mixed in a dry state and applied in several thin layers. For better visual integration, the powder was toasted in a pan, acquiring a range of tones through various degrees of heat exposure. To counteract acidification after toasting, the powder was rinsed in tap water before use. Losses to the media were infilled with watercolour, in a tiny dot pattern, over a release layer of methylcellulose.

An empirical understanding of the properties of the object combined with a careful, considered approach to the

planning of treatment procedures were the keys to the success of this project, a collaboration between the State Archives in Rijeka (DARI) and the Croatian Conservation Institute (HRZ). This approach, although potentially risky for the attachment of the *chine* and plate paper, resulted in the successful removal of staining and discolouration, achieving the desired aesthetic and structural improvement of the object (Fig. 2).

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tive paper objects (H. HOMBURGER, B. KORBEL, 'Architectural Drawings on Transparent Paper: Modifications of Conservation Treatments', *The Book and Paper Group Annual*, 18 (1999), 25-33).