

Balancing Structural Bonding and Surface Aesthetics: A Case Study on the Platinum Print *Porcelain Nude 2017(10)*

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Abstract

In the *Porcelain Nude* series, Japanese artist Yasumichi Morita elevates human curves into a pure, porcelain-like texture through the platinotype process. Because the image particles are embedded deep within acid-free cotton fibers, the works possess a profound matte quality and a rich, warm tonal range with velvet-like shadow expressions. This article explores the restoration of *Porcelain Nude Platinum 2017(10)*, which sustained mechanical tears and scratches on the recto. The treatment involved mending, structural consolidation, and inpainting of the damaged areas, aiming to restore both the structural integrity of the paper substrate and the print's unique surface characteristics. Nevertheless, the artist's aesthetic pursuit defines the technical challenges in conservation. The primary challenge of this case lies in the damage's location at the image core—a monochromatic dark area where any flaw is visually prominent. Since adhesives can easily alter the distinct physical surface properties of platinum prints, it was necessary to balance structural bonding with precise adhesive control. Therefore, two technical adaptations were implemented to mitigate these constraints. First, the interlacing fibers were microscopically realigned and flattened using sandbags to restore the substrate's planar integrity. Next, isinglass—selected for its small molecular size and high permeability—was applied in two stages. This “adhesive-to-adhesive” approach ensures structural stability for the substrate while minimizing aesthetic interference. This case serves as a valuable reference for the future conservation of platinum prints. Through this meticulous restoration, we hope to preserve the artist's eternal pursuit of aesthetic perfection.

Keywords: conservation, mending, sturgeon glue, platinum print

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Introduction

Aesthetic Craftsmanship and Structure

Through the platinotype process, Japanese artist Yasumichi Morita elevates human curves into a pure, porcelain-like texture. Lacking a binder or baryta layer, the image particles are embedded deep within acid-free cotton fibers. As a result, the works possess a profound matte quality and a rich, warm tonal range with velvet-like shadow expressions. This unique physical structure defines the artwork's ethereal aesthetic but also dictates its extreme vulnerability.

The Conservation Challenge

This case study addresses the restoration of *Porcelain Nude Platinum 2017(10)*, which sustained mechanical tears and scratches within the image core—a monochromatic dark area where any flaw is visually prominent. Because the uncoated surface is exceptionally sensitive to moisture and adhesives, direct application risks inducing tide lines or a residual gloss interface. Such undesirable effects would severely compromise the aesthetic integrity of the artist's "porcelain" vision and the essential visual continuity of the dark tonal regions.

Figure 1

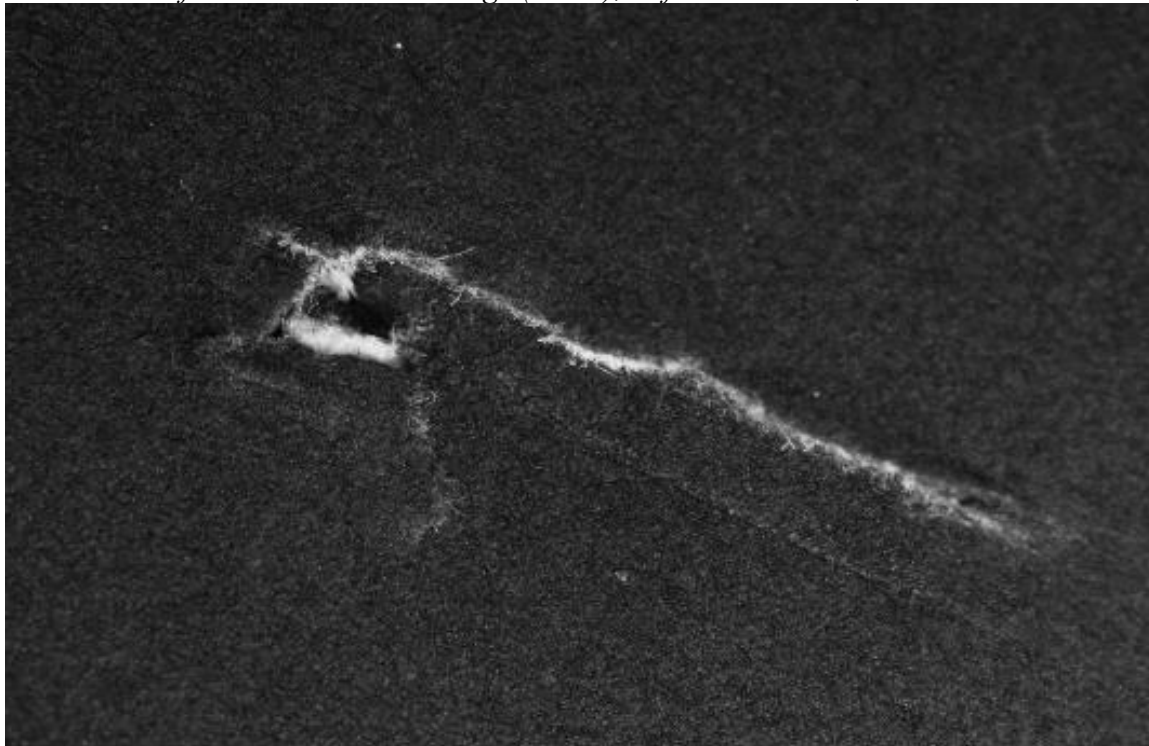
Overall View of the Artwork (50.8 × 60.8 cm), Before Treatment, Normal Illumination



Note. The mechanical damage is approximately 2 cm in length.

Figure 2

Macro View of the Mechanical Damage (Recto), Before Treatment, Normal Illumination



Note. A distinct 7-shaped tear, characterized by severed and displaced fibres.

Figure 3

Macro View of the Mechanical Damage (Recto), Before Treatment, Strong Direct Illumination



Note. Disrupted matte surface texture visible; yellow arrow marks scratches.

Figure 4

Macro View of the Mechanical Damage (Verso), Before Treatment, Illuminated From the Top



Note. Protruding fibers show penetration.

Materials & Evaluation

To ensure compatibility with the platinum print, a range of adhesives—including Wheat Starch Paste (WSP), Gelatin, Methylcellulose (MC), Klucel G, and Sturgeon glue—were systematically screened. Following concentration and performance testing, 1.0%–1.5% Sturgeon glue was selected based on the following advantages:

1. **Structural Integrity and Physical Stability:** As a high-purity collagen, sturgeon glue provides sufficient tensile strength even at low concentrations, ensuring robust structural mending.
2. **Superior Optical Properties and Color Retention:** With its exceptional clarity upon drying, it preserves the original depth of dark tones. Unlike Klucel G, it poses no risk of yellowing, and it avoids the formation of microscopic crystalline highlights (sparkles) often associated with Methylcellulose.
3. **High Penetrability and Texture Preservation:** Its low molecular weight and excellent flow characteristics allow for deep fiber penetration without surface accumulation. Compared to gelatin, it more effectively maintains the characteristic low-reflectance of the matte surface.
4. **Flexibility and Low Shrinkage Stress:** The resulting adhesive film is highly elastic. Compared to Wheat Starch Paste, it significantly mitigates shrinkage stress during drying, minimizing secondary physical damage to the fragile fibers.
5. **Conservation Ethics:** Its outstanding water solubility and chemical reversibility strictly adhere to international conservation standards.

Evaluation Result

At low concentrations, sturgeon glue achieves the ideal balance between structural reinforcement and aesthetic presentation, making it the definitive choice for this treatment.

Conservation Treatments

1. Fiber Realignment (Figure 5): Using a stereo microscope, the displaced and fractured paper fibers are precisely realigned.
2. Pressure (Figure 6): Localized pressure was then applied using sandbags to restore the planarity of the fiber. This step ensures that the internal structure of the tear is perfectly matched before any adhesive is applied.
3. Mending:
4. Since adhesives can easily alter the distinct physical surface properties of platinum prints, it was necessary to balance structural bonding with precise adhesive control. Therefore, two tailored methodological adjustments were implemented to mitigate these constraints.
 - (1) Pre-stabilization (Figure 7): A highly diluted solution of sturgeon glue (1.0%) is pre-applied to the exposed fiber ends. This “pre-coating” penetrates the porous fiber structure, stabilizing the damaged area and creating a receptive base for the subsequent bond without altering the surface gloss.
 - (2) Structural Rejoining (Figure 8 and 9): A 1.5% sturgeon glue was applied to establish an “adhesive-to-adhesive” bond. The tear was rejoined from the verso while verifying fiber alignment from the recto, followed by the application of Tengujo tissue on the verso for structural reinforcement.
5. Inpainting (Figure 10): Losses in the image were meticulously toned. The repair was then rigorously inspected under various light sources to ensure visual continuity.

Figure 5

Precise Repositioning Under Magnification



Figure 6
Locally Weighted With Sandbags



Figure 7
Pre-stabilization



Figure 8

A 1.5% Sturgeon Glue Was Applied to Establish an “Adhesive-to-Adhesive” Bond



Figure 9

The Application of Tengujo Tissue on the Verso



Figure 10*Inpainting*

Results and Discussion

Physically restoring the planarity of the paper support during the initial Fiber Realignment phase proved critical, as it minimized the need to introduce moisture during subsequent wet treatments.

The applied sturgeon glue effectively prevented crystalline sparkles often caused by high-molecular-weight residues, rendering the mending site invisible. The treatment successfully secured the tear, achieving structural stability without the adverse effects of adhesive-induced tension on the fragile fibers.

Complementing the material choice, the two-stage mending strategy minimized moisture introduction, effectively precluding the formation of tide lines and residual gloss. This approach successfully safeguarded the work's profound matte quality and velvet-like shadow expressions.

Figure 11

Macro View of the Mechanical Damage (Recto), After Treatment, Normal Illumination

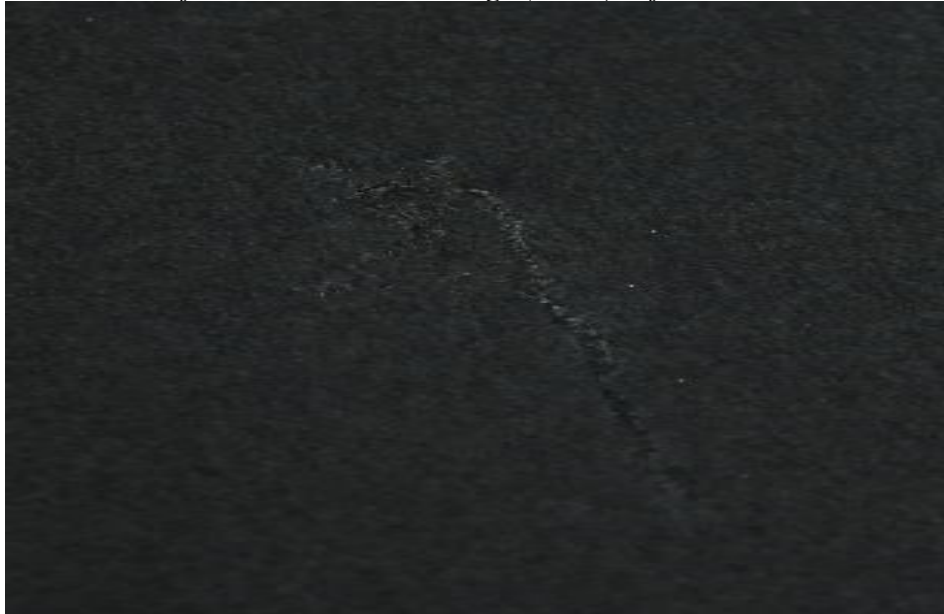


Figure 12

Macro View of the Mechanical Damage (Recto), After Treatment, Strong Direct Illumination

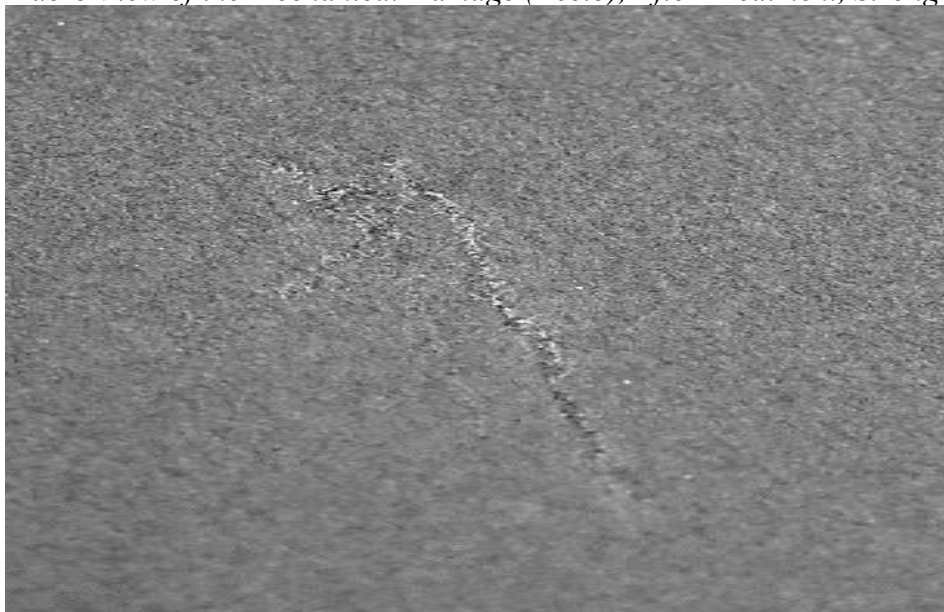


Figure 13

Macro View of the Mechanical Damage (Verso), After Treatment, Illuminated From the Top

**Conclusion**

This study presents a precise conservation treatment for Japanese artist Yasumichi Morita's platinum print, *Porcelain Nude Platinum 2017(10)*, from the *Porcelain Nude* series. Facing mechanical tears and scratches located at the image core—a monochromatic dark area—the conservation team encountered a major challenge: executing structural bonding while safeguarding the print's unique deep matte quality and velvet-like shadow expressions. To address this, a tailored two-stage sturgeon glue (isinglass) strategy was implemented. First, the displaced paper fibers were microscopically realigned and flattened under localized sandbag pressure to restore planar integrity. Next, highly diluted solutions of 1.0% and 1.5% sturgeon glue were sequentially applied to establish a robust “adhesive-to-adhesive” bond. Owing to the adhesive's high permeability, low shrinkage stress, and excellent chemical reversibility, this approach minimized moisture introduction, effectively precluding the formation of secondary tide lines or residual surface gloss. The treatment successfully achieved an invisible yet structurally secure repair, fully preserving the artist's aesthetic vision of light, shadow, and serene “porcelain-like” human curves. Ultimately, this case study balances physical stability with surface aesthetics, offering an invaluable evidence-based conservation model for the future preservation of moisture-sensitive, uncoated contemporary photographic masterpieces and delicate modern prints worldwide.

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Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

During the preparation of this work, the authors used Gemini in order to translate the original manuscript into English. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the final content of the publication.

References

Morita, Y. (2017). Porcelain Nude (1st ed.). Super Labo.

Petukhova, T., & Bonadies, S. D. (1993). Sturgeon glue for painting consolidation in Russia. *Journal of the American Institute for Conservation*, 32(1), 23–31.
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