

## Pretty in Pink: The Treatment of a Saint-Mémin Crayon Drawing

### ABSTRACT

From 1796–1810 Saint-Mémin was a prolific artist in Federalist America completing numerous profile portraits of well-known historical figures. Saint-Mémin had a systematic working method that included the creation of crayon drawings and engravings. A crayon drawing with numerous damages came into the National Park Service (NPS) Paper Conservation Laboratory for treatment. The drawing was attached along its outer edges to a wooden strainer and as a result of inherent vice and poor storage, tears were created near the inner edge of the strainer. The paper was surface dirty, stained, and abraded. Treatment options were limited because the portrait was drawn in graphite, black crayon, and white chalk on a pink ground layer. After careful examination and consultation with other conservators and curators, the drawing was removed from its wooden strainer during treatment using the Weidner Moisture Chamber (WMC).

### THE ARTIST

Saint-Mémin, born Charles Balthazar Julien Févret de Saint-Mémin in 1770, came to the United States from France with his father in 1793, a royalist exile during the French Revolution. His family had lost their fortune when the French revolutionary government abolished hereditary nobility (Miles 1994). While Saint-Mémin was exposed to artistic endeavors at a young age and studied art, he received most of his formal training in the French military. However, during his military career he continued to foster a special interest in art and often spent his free time painting and drawing landscapes. When Saint-Mémin first arrived in the United States and settled in New York City he was not a practicing artist, but it was

there that he began to study the art of printmaking and engraving (Miles 1994).

Even though several of Saint-Mémin's early business ventures failed he found his new skills as a printmaker to be profitable enough to support his family. Part of his early work involved making engravings of town plans and buildings for small villages in upstate New York. Through these projects Saint-Mémin became an established engraver which eventually led to a business partnership with a fellow Frenchman, Thomas Bluget de Valdenuit.

Together Saint-Mémin and Valdenuit created a portrait business using a recently invented drawing tool Valdenuit had learned about in Paris called the physiognotrace (Miles 1994). Gilles-Louis Chrétien developed the physiognotrace in the early 1780s. It functioned similarly to a well-known drawing tool, the pantograph. In fact, the physiognotrace was designed by turning a pantograph from its usual horizontal position to a vertical orientation in front of the artist. A sighting device attached to the top bar of the pantograph made the physiognotrace unique (fig. 1). Chrétien used the tool to draw accurate profile portraits that would then be made into engravings and his business was very successful. When Valdenuit moved to the United States profile portraits were gaining popularity. He was interested in the possibility of starting his own portrait business incorporating the use of Chrétien's invention. Saint-Mémin had become an established engraver and had the skills Valdenuit was seeking in a partner. In the partnership, Valdenuit created the drawings and Saint-Mémin transferred the drawing onto a copper engraving plate (Miles 1994).

This partnership lasted a little over a year until Valdenuit moved back to France. During their time as business partners Saint-Mémin observed Valdenuit and learned to use the physiognotrace. Upon Valdenuit's departure he decided to complete the drawings himself and stayed in New York working on his own until he moved his business to Philadelphia. Saint-Mémin

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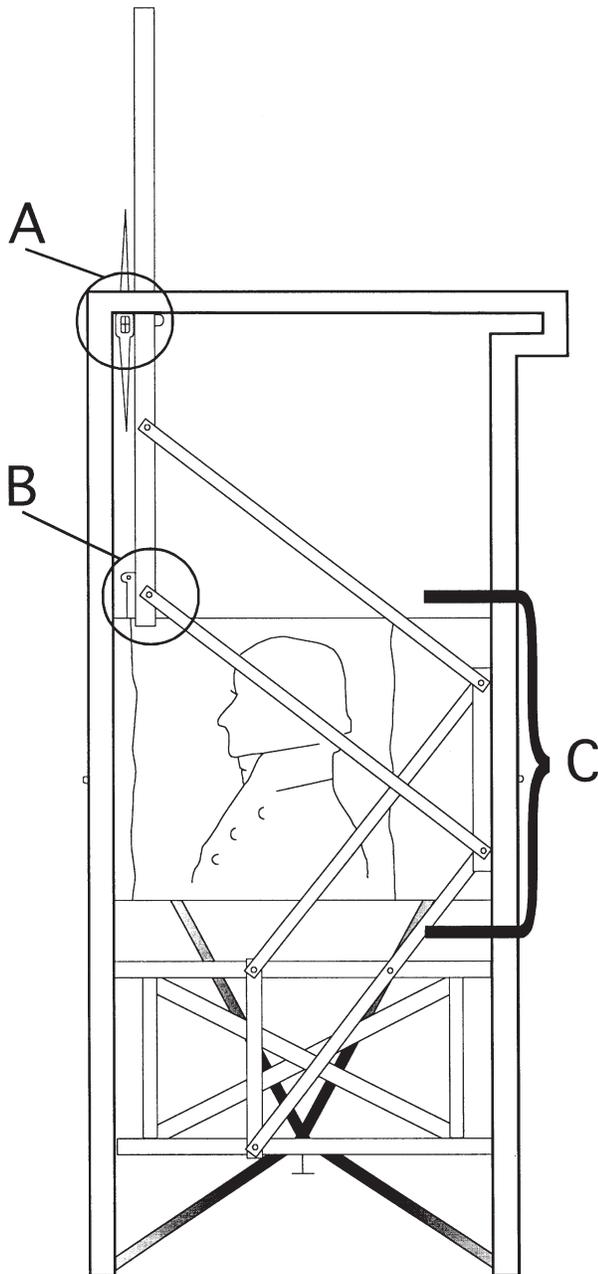


Fig. 1. Sketch of the physiognotrace used by Saint-Mémin. *A* - location of the sighting device, *B* - area of attachment of the graphite pencil, *C* - pantograph.

remained in Philadelphia for four years, created hundreds of portraits, and gained fame with distinguished society.

Saint-Mémin expanded his business through newspaper ads and word of mouth. He kept money flowing by immediately making the drawings available for purchase by the client. If the client wished to leave the portrait with the studio for a few months, a set of twelve engraved portraits could be made for an additional charge. It is interesting to note that a portrait of a woman would cost

slightly more than the portrait of a man due to the intricate details of her hair and clothing (Miles 1994). In about 1800 Saint-Mémin began offering a framing option for the drawings.

After his stay in Philadelphia Saint-Mémin became an itinerant artist and traveled for the next seven years to several major eastern cities including Baltimore, Washington, Richmond, and Charleston. Among the hundreds of portraits he produced at this time were several portraits of Native American Indians who visited Washington as delegates. These are particularly significant because they are among the earliest and most accurate depictions of Plains Indians (Miles 1994).

By 1809 Saint-Mémin had helped most of his family through the trials of the French Revolution and was hoping to return to France. He began producing fewer and fewer portraits and a year later got his wish. Although his career in the United States was relatively short, Saint-Mémin produced over nine hundred portraits, including ones of famous Americans such as Thomas Jefferson, George Washington, and Paul Revere. Upon his return to France his career as an artist ended, but he continued his interest in the arts by becoming the director of a museum in Dijon. He expanded his interest in mechanical drawing devices and invented a stereograph, which was a pantograph that could produce perspective drawings of a building (Miles 1994). He remained a very active supporter of the arts until his death in 1852.

#### DRAWING TECHNIQUE

Saint-Mémin's drawings are very distinctive in appearance. The most noticeable characteristic is a pink ground layer composed of a red pigment and white chalk mixed with water and applied by brush. He preferred to use cream or beige rag laid papers, some of which carried the watermarks of Whatman or DeVries (Miles 1994). The papers are almost always found adhered to a lap-joined wooden strainer along their outer edges.

Most of the drawing papers measure approximately 40 cm by 51 cm. In order for drawings of this size to be completed with a physiognotrace the tool had to be quite large. The physiognotrace Saint-Mémin used may have stood 150 cm tall by 61 cm wide (Miles 1994). It was fitted with a graphite pencil on one end of the pantograph arm that recorded the outline of the sitter's profile. Once the initial outline was drawn, details of the face and clothes were added with black crayon. Highlights could then be added with the application of white chalk. Saint-Mémin's early drawing technique was greatly influenced by Valdenuit, but he eventually developed his own style that emphasized a strong contrast of lights and darks (Miles 1994). Saint-Mémin often used a stump to create areas of gradation, while Valdenuit used carefully drawn lines to create tone.

Saint-Mémin helped to popularize the use of a decorative glazing technique called *verre églomisé*. Black paint and gold leaf were used on the reverse side of framing glass to form the effect of a window mat. He consistently used gilded frames offered in a variety of styles.

#### HISTORY OF THE PORTRAIT OF DR. ISAAC HENRY

Dr. Isaac Henry (1771–1829) was a U.S. Naval surgeon serving aboard the frigate U.S.S. *Constellation* when Saint-Mémin completed a drawing and set of engravings for him in 1802. Dr. Henry married and settled in Virginia shortly after leaving the Navy. In the 1820s the Henrys acquired the homestead now within the boundaries of Manassas National Battlefield Park. After Dr. Henry's death the original Saint-Mémin drawing continued to hang in the family home until the Civil War Battle of First Manassas (Bull Run) on July 21, 1861.

During the Battle of Manassas Judith Henry, Dr. Henry's widow, was killed and the Henry House was damaged. The surviving family members were forced to abandon their home taking the portrait drawing with them. The portrait remained with the family at a local farm until a new house was built in 1870. In 1922, Arthur L. Henry, grandson of Isaac, sold the property to the Sons of Confederate Veterans who established a museum in the Henry House as part of the Manassas Battlefield Confederate Park. The family loaned the portrait to the museum for display, but when dissatisfied with the way the portrait was being cared for, requested its return in the 1930s. In 1939, ownership of the Henry farm was transferred to the Federal Government and the following year Manassas National Battlefield Park was established. While park staff had knowledge of the portrait from available records, they were unable to locate the artwork.

The portrait was not seen again until 1998 when the executor of the estate of Edward Newman Henry, great-grandson of Dr. Henry, offered the portrait and other family heirlooms to the park. At this time it was bequeathed to Manassas National Battlefield Park for inclusion in its museum collection (Burgess 2003).

#### CONDITION

Unfortunately the drawing was severely damaged from a combination of inherent vice and improper handling and storage before the park acquired it. It was structurally unstable and much of the damage was visually distracting.

The drawing came to the NPS Paper Conservation Laboratory in a gilt frame with glazing (fig. 2). The framing package was carefully documented prior to removing the drawing. The style of the frame was compared with others used by Saint-Mémin and was examined by NPS



Fig. 2. Portrait of Dr. Isaac Henry, Saint-Mémin, 1802, black and white crayon and graphite on laid paper, 57.1 cm by 38.1 cm, Manassas National Battlefield Park cat. no. 22009: before treatment

wooden objects conservator Al Levitan. We concluded that the frame was most likely original to the drawing, as it was consistent in style and materials. However, the glazing looked distinctly modern. It did not have any of the visual characteristics of old glass nor did it have a decorative *verre églomisé* mat as would be expected for most Saint-Mémin drawings. Linear scratches and abrasions on the surface of the drawing indicated that the original glazing had probably broken in the past and been replaced. There was no mat or spacer between the surface of the drawing and the glazing. The drawing was backed with a piece of heavyweight paper and a wooden slat backing secured with modern nails.

Once the drawing was removed from its frame we could see many of the characteristics associated with Saint-Mémin's working style. The drawing was on a medium weight laid paper with a pink ground layer and was attached along its edges to a lap-joined wooden strainer. The paper measured 57.1 cm by 38.1 cm and was slightly smaller than the outer dimensions of the wooden strainer. The graphite outline of the sitter's profile drawn by the physiognotrace could be easily identified. A combination of black crayon and white chalk were used to define the sitter's features.



Fig. 3. Detail before treatment and removed from the frame

The paper was very brittle, discolored, and a light gray surface grime was visible overall. Dark brown flyspecks were found throughout the drawing, but were concentrated in the upper right corner. Because the drawing was only attached to the wooden strainer on its outer edges, severe tears had developed along the inner edges of the strainer. One horizontal tear measured over 30 cm in length and the left side margin had completely detached. Some small losses were associated with the tears and others were a result of insect grazing.

Stains disfigured the image. Contact with a liquid had caused dark gray tidelines that extended the entire length of the sheet. Many of the tidelines intersected the image. The liquid had also caused the pink ground layer to be displaced and lost in numerous areas. These areas exposed the color of the paper below and often appeared brighter than the rest of the sheet (fig. 3).

#### TREATMENT METHOD DEVELOPMENT

The park curator wished for the object to be stabilized and aesthetically improved to make the image more readable. NPS paper conservator Nancy Purinton and I agreed with the treatment objectives, but we were concerned about jeopardizing the safety of this very fragile object during treatment. Most of the treatment could not be performed without removing the wooden strainer. This endeavor would be challenging, since research and consultation proved that the strainer was probably original and should ideally be retained after treatment.

We sought out the expertise and advice of other conservators and curators who had worked with Saint-Mémin drawings to assist us in making treatment decisions. The head conservator at Colonial Williamsburg Foundation (CWF) Pamela Young was contacted because she had treated several drawings in the CWF collection. Some of the portraits had damages similar to the NPS drawing and she had performed tests to remove the drawing from the

strainer. During spot testing she found the adhesive that attached the drawing to the strainer was an animal glue (Young 2003). This prompted us to perform a water drop test on our adhesive and found it to be soluble. As a result of this test, visual examination, and positive result for the existence of proteins using the Biuret test it was confirmed that the adhesive was also an animal glue (Browning 1977).

The curatorial and conservation staff at the National Portrait Gallery (NPG) allowed us to view several of their Saint-Mémin drawings. The condition of their portraits seemed almost pristine compared to the NPS drawing and had never been removed from their strainers. Seeing the drawings close to their original appearance made us more confident in our decision to attempt the removal of the NPS drawing. When comparing a number of drawings side by side a range of tone in the pink ground layer from a warm, bright pink to a cooler, blue-gray pink was apparent. Susan Barger and Deborah Mayer had analyzed samples of the ground layer from several Saint-Mémin portraits. Their results indicated the presence of red lead and vermilion (Miles 2003). To obtain the identification of the pigment present in the ground layer of the NPS drawing, a sample was taken from an area on the reverse. NPS conservation scientist Judith Bischoff performed analysis using polarized light microscopy and Fourier-Transform Infrared Spectral (FT-IR) analysis. The results were consistent with the properties of red ochre. This was not surprising since Saint-Mémin was an itinerant artist for part of his career and this probably resulted in his using a variety of locally available materials.

#### EXPERIMENTATION AND TESTING TO REMOVE THE WOODEN STRAINER

Preliminary testing had proved the adhesive to be water soluble and we hoped to remove the drawing with the local application of moisture. The use of small humidity chambers was the first method chosen for testing. After three hours using this type of humidification the adhesive had not softened enough to allow for the release of the drawing paper. Next small, local Gore-Tex packages were introduced which gave the same unsatisfactory results. In order to apply a greater amount of moisture, water was applied with a small brush and was wicked under the drawing. This allowed for a small corner of the drawing to be released, but revealed several concerns. The paper needed to be very wet for the adhesive to release causing the paper to expand and split at the wet/dry boundary. Once the areas were allowed to dry, tidelines were visible. In hopes of creating a more gradual transition along the wet/dry boundary steam was locally applied to the edges. The steam worked too quickly and could not be adequately controlled.

Since methods for the local application of moisture had been exhausted we began exploring overall humidification.

The standard design for a temporary humidity chamber incorporates a deep-walled tray that houses the object and the humidity source with a Plexiglas covering. Our concern regarding this option was maintaining a high and constant level of humidity while still providing adequate access to the object. The Plexiglas top would need to be removed for access to the object, allowing much of the built-up humidity to be lost and creating a potential for the drawing to dry out. Since the drawing would be very vulnerable to damage from handling when humidified we wanted to be able to release the drawing with minimal movement. We anticipated the walls of the humidity chamber would prove cumbersome while working on the drawing.

Since the results of our investigation into a temporary moisture chamber were not desirable we explored the use of a Museum Services Corporation (MSC) Moisture Dome. The MSC Moisture Dome seemed to have added design features, which would accommodate our treatment needs, such as side portals to access an object being humidified. Although the concept of the portals is valid, the amount of mobility inside the dome did not seem sufficient. Another attractive addition was that MSC Moisture Domes are normally fitted to the dimensions of a suction table, allowing for future treatment steps such as bathing to be performed inside the dome. Unfortunately, the suction table in our paper lab is quite large, much larger than the space needed to treat the modestly sized drawing. The dome seemed to be an inefficient use of space in terms of treatment and within the lab. Looking at other design elements of the MSC Moisture Dome we noticed it provides humidification through only one opening at the end of the dome. This could be a problem for achieving the even humidity distribution we desired.

On the advice of NPG paper conservator Rosemary Fallon, we contacted Marilyn Kemp Weidner, a pioneer in the field of paper conservation. Marilyn had treated Saint-Mémin drawings in the past and had used her patented Weidner Moisture Chamber (WMC) to remove the drawings from their strainers (Weidner 2003). We discussed her previous treatments and were pleased to hear the capabilities of the WMC.

In the WMC an ultrasonic humidifier attached to one side of the chamber creates a very fine mist. The WMC directs the source of moisture throughout the chamber by a series of attached plastic tubes. One tube directs the mist into the chamber and then splits to form a "ring" of adjoined tubes along the inner sides of the chamber. The tubing has intermittent holes, which evenly releases the mist. The sides of the WMC have large hinged panels that can be opened for access to the object allowing us to work inside the chamber while maintaining high humidity. We predicted the amount of space provided by the side panels would allow two conservators to work simultaneously on

the object as warranted. Like the MSC Moisture Dome, the WMC comes equipped with a specially designed suction table that fits into the bottom of the chamber, but was available in a size more appropriate for the dimensions of our drawing.

The unique characteristics and design elements of the WMC seemed the most viable and safe option for the treatment of the Saint-Mémin drawing. We asked Marilyn if she would assist us with our treatment since she had such valuable experience. Marilyn agreed to work with us and even offered to bring a prototype model of her moisture chamber for use in treatment.

## TREATMENT

Before the drawing was humidified flyspecks were reduced mechanically with microspatulas and scalpels. Cotton swabs and small brushes were used to attempt the reduction of surface grime, but this step displaced the media and made the surface texture appear slightly glossy in raking light. Even if a certain amount of change in the surface texture was deemed acceptable the surface cleaning did not greatly affect the appearance of the overall gray tone. For these reasons all further surface cleaning efforts were halted.

The drawing was now ready to be placed inside the WMC. Because the drawing was so vulnerable, the original wooden backing board was left on the reverse of the drawing to support it inside the chamber. The humidifier was turned on and the mist filled the chamber (fig. 4). Marilyn commented that when she had treated Saint-Mémin drawings in the past it took several hours of humidification in the WMC for the adhesive to swell and the drawing to be safely released. Moisture had only been introduced to the NPS drawing for approximately twenty minutes before the adhesive was soft enough to allow for the release of the drawing. This time discrepancy could be the result of various factors including the amount of adhesive used, its formulation, or its level of degradation.

To remove the drawing from the strainer, Te flon spatulas were carefully inserted under the edges of the paper and Hollytex was inserted under the released areas to prevent reattachment (fig. 5). All work was performed inside the WMC and the drawing was fully released in about ten minutes. The drawing suffered no additional damage during its removal from the strainer and was placed on a piece of Hollytex and blotter to dry (fig. 6). Once the drawing was dry the media proved to be only very slightly friable, allowing us to turn the drawing facedown onto a smooth piece of Hollytex to reduce the residual adhesive on the reverse. Microspatulas were used to mechanically remove heavily applied areas of adhesive. Residual adhesive was reduced using cotton swabs moistened with deionized water. The tears were then aligned and mended on the



Fig. 4. Drawing being humidified in the Weidner Moisture Chamber

reverse using wheat starch paste reinforced with thin strips of Japanese paper.

Since the paper was very discolored and there were numerous tidelines throughout the drawing, the suction table in the moisture chamber was used for bathing. Most of the bathing was performed using the gentle mist supplied by the humidifier, but select areas of staining required the use of more moisture. In those cases a side panel was opened and a dahlia sprayer supplied additional moisture. The bathing process allowed the paper to regain some of its flexibility and the overall tone of the paper on the reverse was lightened. Unfortunately, many of the tideline stains on the front were not reduced.

Because the paper was still vulnerable to further damage, we decided to line the drawing with a *tengujo* Japanese paper adhered with wheat starch paste. The WMC was used to gently humidify the object before lining and once the lining was attached, the suction table inside the WMC was used to ensure good contact between the drawing and the lining paper.



Fig. 5. Detail of drawing being released from the wooden strainer

Small losses to the paper support were filled with a toned cellulose powder adhered with wheat starch paste. The drawing was now more structurally stable but the



Fig. 6. Marilyn Kemp Weidner with the portrait after it was released from the wooden strainer



Fig. 7. Detail before treatment

image legibility needed improvement. The drawing was very mottled overall and had a rough, matte texture. The areas of loss in the ground layer were isolated with methyl cellulose and then inpainted with a combination of Winsor & Newton watercolors and Rexel Derwent pastel pencils. Some of the tidelines crossed throughout the sitter's forehead and nose and were visually distracting. They were very dark and could not be successfully overpainted. Viewing the tidelines under magnification revealed they were composed mostly of surface dirt and debris. Since we felt confident we would only be removing a minimum amount of media we decided to carefully reduce the tidelines using the gentle mechanical action of a cotton swab. Some of the darker, heavier tidelines were further reduced by gently scraping with a microspatula. These areas now appeared slightly lighter than the surrounding paper tone and were inpainted with the same combination of media mentioned above (figs. 7–8).

The treatment was now complete and the drawing was ready to be rehoused for exhibit. It was hinged into a museum-quality sink mat with Japanese paper and wheat starch paste. The walls of the sink mat were hinged so they could open for easy access to the drawing in the future. A



Fig. 8. Detail after treatment

black window mat was cut to resemble the *verre églomisé* decoration Saint-Mémin typically used in his framed works. The modern glass was replaced with UV Plexiglas. Although Plexiglas is not normally used to frame crayon drawings we felt it was appropriate in this case because the media had proved to be secure, the drawing was to be transported, and its storage conditions in the future may not be ideal. A sealed package was created using 3M No. 850 polyester-based tape and a layer of Mylar on the reverse. It was then placed in its original frame (fig. 9).

After a temporary exhibit, the drawing will be placed in storage. A good quality photographic reproduction of the image and reproduction frame will replace it permanently on the wall in the Henry Hill House. The original strainer and backing board will accompany the drawing in storage, but were housed in a separate sink mat.

## CONCLUSION

The goals of this treatment, which at first seemed daunting, were made attainable by the WMC. The WMC provided the desired amount of humidity and access to the drawing during treatment. If not for the use of the WMC,



Fig. 9. After treatment housed in original frame

the full treatment would not have been possible. We were able to successfully stabilize and aesthetically improve a very damaged drawing to reflect its original beauty.

#### ACKNOWLEDGMENTS

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