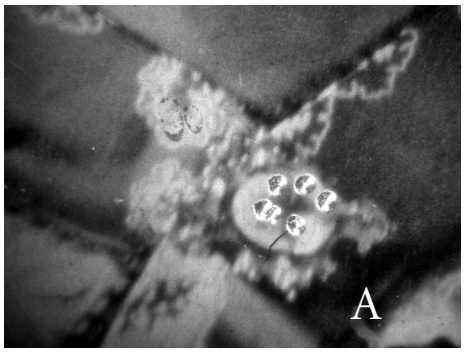
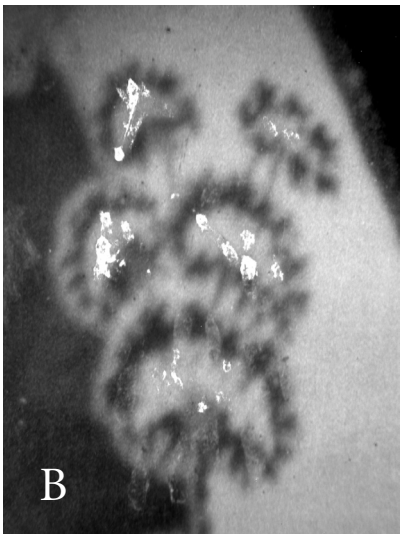




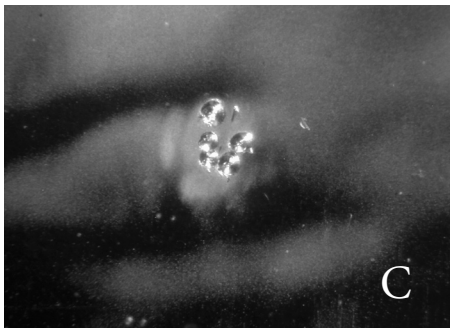


Plate 1

This nice example of an artistically detailed sixth-plate daguerreotype is unusual in that the tinting is only on the woman's ribbon. But the fine pastel blue, white, and red accents put the ribbon in nice contrast against her black dress.

The artist also used the technique of "pricking" [A, C] to produce jewel-like highlights on the woman's brooch and ring.

For this black & white reproduction the detail of the ribbon [B] has been manipulated in Photoshop to make the brush's minute red touches appear as white.

Courtesy of Mark S. Johnson

In Living Color: Process and Materials of the Hand Colored Daguerreotype

Sara H. Ferguson

The driving force behind the invention of photography was the desire to realistically depict nature. As much as the daguerreotype was praised for its ability to accurately portray its subject, a major criticism of the process was its inability to render the photographic subject in color. Therefore, the methods of hand applying color to photographic images are nearly as old as photography itself. The hand colored photograph replaced the painted miniature as the portrait of choice very shortly after photography was introduced to the public. Not only did the hand colored photograph closely resemble a traditional painted portrait but it was more affordable. A photographic image with hand applied color was deemed more realistic than a miniature painting and offering colored photographs was a means to lure customers to a photographer's studio. Applied color also served the more practical purpose of obscuring the imperfections of both the photographer and sitter.

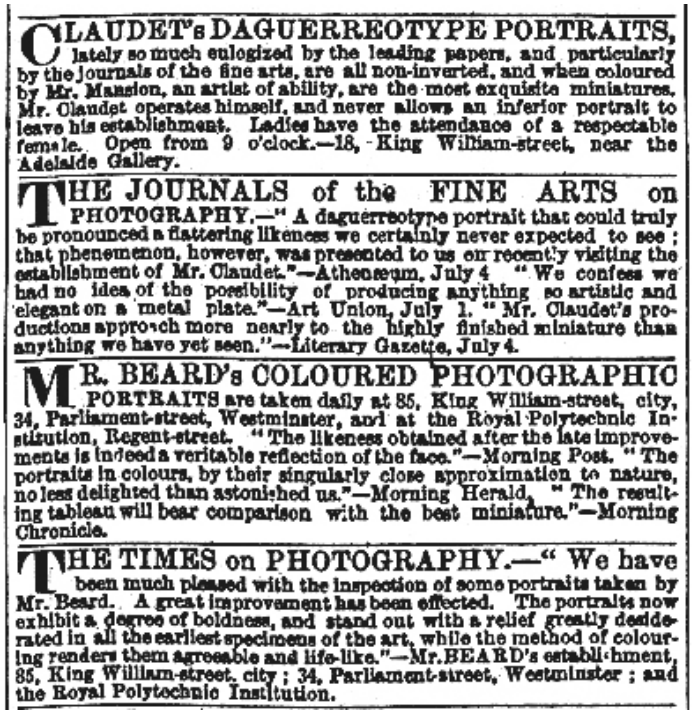
Different photographic processes required different coloring techniques and materials. Results varied considerably depending on the skill of those doing the coloring and the materials used. As manuals were published and materials marketed for the hand coloring of images, more amateur photographers attempted to apply color, often with unsatisfactory results. In *Harmonious Colouring as Applied to Photographs* an "Artist Photographer" wrote in 1859,

> . . . so imperfect was the preparation of the colours, and so inefficient the method of using them, pictures were, for many years, as frequently spoiled as improved. The colours sold were often utterly worthless, and the instructions for their use we have seen on more than one occasion to have been to the effect that they were to be "dusted over the picture"![1]

As the painted portrait was displaced by the colored photograph, many miniature painters became photographers or colorists in photographic studios. It was a generally held opinion that photographers and colorists that had received traditional artistic training were capable of producing the best hand colored images. Regardless, such photographs occupied an uncomfortable position bridging the painting and the photograph. Alfred Wall writes in his 1861 *Manual of Artistic Colouring as Applied to Photographs*,

> The photographer admits the beauty of colour in a painting, and admires it as warmly as need be. The artist admits the truthfulness of the photograph, and admires its wondrous delicacy of detail, faithfulness of drawing, and perfection of chiaroscuro just as warmly. Why, then, should an art which combines the truth of the one with the loveliness of the other be thus unsparingly denounced by these two important classes?[2]

The controversy surrounding the status of hand colored photographs continued throughout the nineteenth



CLAUDET'S DAGUERREOTYPE PORTRAITS, lately so much eulogized by the leading papers, and particularly by the journals of the fine arts, are all non-inverted, and when coloured by Mr. Mansion, an artist of ability, are the most exquisite miniatures. Mr. Claudet operates himself, and never allows an inferior portrait to leave his establishment. Ladies have the attendance of a respectable female. Open from 9 o'clock.—18, King William-street, near the Adelaide Gallery.

THE JOURNALS of the FINE ARTS on PHOTOGRAPHY.—"A daguerreotype portrait that could truly be pronounced a flattering likeness we certainly never expected to see; that phenomenon, however, was presented to us on recently visiting the establishment of Mr. Claudet."—Athenæum, July 4 "We confess we had no idea of the possibility of producing anything so artistic and elegant on a metal plate."—Art Union, July 1. "Mr. Claudet's productions approach more nearly to the highly finished miniature than anything we have yet seen."—Literary Gazette, July 4.

MR. BEARD'S COLOURED PHOTOGRAPHIC PORTRAITS are taken daily at 85, King William-street, city, 34, Parliament-street, Westminster, and at the Royal Polytechnic Institution, Regent-street. "The likeness obtained after the late improvements is indeed a veritable reflection of the face."—Morning Post. "The portraits in colours, by their singularly close approximation to nature, no less delighted than astonished us."—Morning Herald. "The resulting tableau will bear comparison with the best miniature."—Morning Chronicle.

THE TIMES on PHOTOGRAPHY.—"We have been much pleased with the inspection of some portraits taken by Mr. Beard. A great improvement has been effected. The portraits now exhibit a degree of boldness, and stand out with a relief greatly desiderated in all the earliest specimens of the art, while the method of colouring renders them agreeable and life-like."—Mr. BEARD's establishment, 85, King William-street, city; 34, Parliament-street, Westminster; and the Royal Polytechnic Institution.

PLATE 2

Advertisements for Claudet's and Beard's daguerreotype studios from *The Times* [London], 4 August 1846 as illustrated in R. Derek Wood, 'Daguerreotype Shopping in London in February 1845', *British Journal of Photography*, 9 November, 1979, Vol. 126, pp. 1094–5.

Courtesy R. Derek Wood.

century. However, the public demand for colored photographs was strong enough to sustain a marketplace well into the twentieth century.

When the daguerreotype was first presented to the public it was both heralded and criticized. The detail captured by the process was remarkable, however the realism of the daguerreotype was compromised by its lack of color. *Blackwood's Magazine* reported in 1842, "The likenesses produced . . . are so absolutely fearful, that we have but little hope of ever seeing anything tolerable from any machine. It must want color. . . and its best likeness can be only that of a rigid bust, or a corpse."[3] The public was familiar with monochrome images on paper. Engravings and other illustrations used in publications were reproduced in black and white unless the color was added later by hand. Therefore the early black and white photographic print was not as much of a disappointment as the daguerreotype which the public hoped would soon be an exact replica of nature including its colors. Predictions of a color daguerreotype were continually made but the real thing was never delivered. French photographer and author M. A. Gaudin wrote in his 1844 *Traite Practique de Photographie*, "Most members of the public believe that [photography in] natural colors has been discovered, and every day I am assailed with questions on the subject. However, of all the methods now recommended, only the application of dry pigment is satisfactory."[4] Until gold toning was introduced by Hippolyte Fizeau in 1840, the image surface of the daguerreotype was much too fragile for applied color. Gold toning hardened the surface of the plate making it possible to hand color without obliterating the silver image. Various methods and materials for hand coloring daguerreotypes were attempted and subsequently abandoned. In 1843 M. Leotard patented a process for coloring in which a transparent layer of animal or vegetable tissue, such as ox stomach, was placed over the plate, colored, dried and varnished.[5] Charles Chevalier proposed early on a method for painting both the exterior and interior of the cover glass with transparent glass paint.[6] M. Reginal suggested mixing the stains used for enhancing the color of semi-precious stones into warm fish-glue and painting the plate with the mixture while it was warm.[7] Such methods were extremely imprecise, giving the daguerreotype a heavy over painted appearance and therefore were not commonly used.

The first individual known to attempt coloring daguerreotypes was Johann Baptist Isenring of Switzerland.[8] Isenring first applied oil-based pigments to his plates. The results obscured the delicate photographic image and resembled traditional painted portraits.[9] In 1840 Isenring encouraged the public to judge his work

PLATE 3

An original coloring box showing the row of bottles containing finely powdered colors. The artist would blend the dry powders on the palette and use the white fabric lining the lid to control the amount of powder on the brush.

Courtesy of Matthew Isenburg.

and offered to disclose his secret coloring techniques for appropriate compensation.[10] By 1841 Isenring had developed a more practical technique using a mixture of dried gum arabic and water color pigment. Application of the pigment dry rather than wet allowed the color to be more easily controlled. The results were more subtle and appealing. In 1842 Englishman Richard Beard purchased the British rights to Isenring's process. Beard made several improvements which he patented and the practice flourished in London where he was based. One method used stencils cut from tracing paper in the shape of the area to be colored. Beard wrote of his process, "The dry colours are ground to an impalpable powder in a solution of gum arabic or other adhesive material; they are then dried and sifted; in using them they are allowed to settle from a suitable box onto the screened picture, the screen is withdrawn...the colour removed from the shadows by blowing with bellows, and the remainder fixed on the plate by breathing."[11] In Beard's other methods for coloring, the pigment was applied without the use of stencils. Beard's patent states, "The dry colors are stippled with a camel-hair pencil (brush) on to the different parts of the picture, using the colours required for each part. The colours are successively set by breathing over them."[12] Examples of daguerreotypes colored using this method or a variation of it are most commonly seen today. Such dry coloring methods allow for transparent color that does not obscure photographic detail and gives a natural, realistic appearance. Often only certain areas of the plate were tinted, such as the skin or lips.[13] The same method was known to be used by fellow Londoners Antoine Francoise Claudet and J. E. Mayall.[14] Despite speculation by many photographic experimenters, such as Edmond Becquerel, that a process for a "real" color daguerreotype was forthcoming, Claudet did not believe it physically possible and instead put his energy towards hand coloring. Partnering with a miniature painter from France named Mansion, the results were highly regarded.[15] Their methods were the first to be promoted in photographic manuals of the time.[16] Gaudin described Claudet's technique, emphasizing the importance of applying the pigment gradually

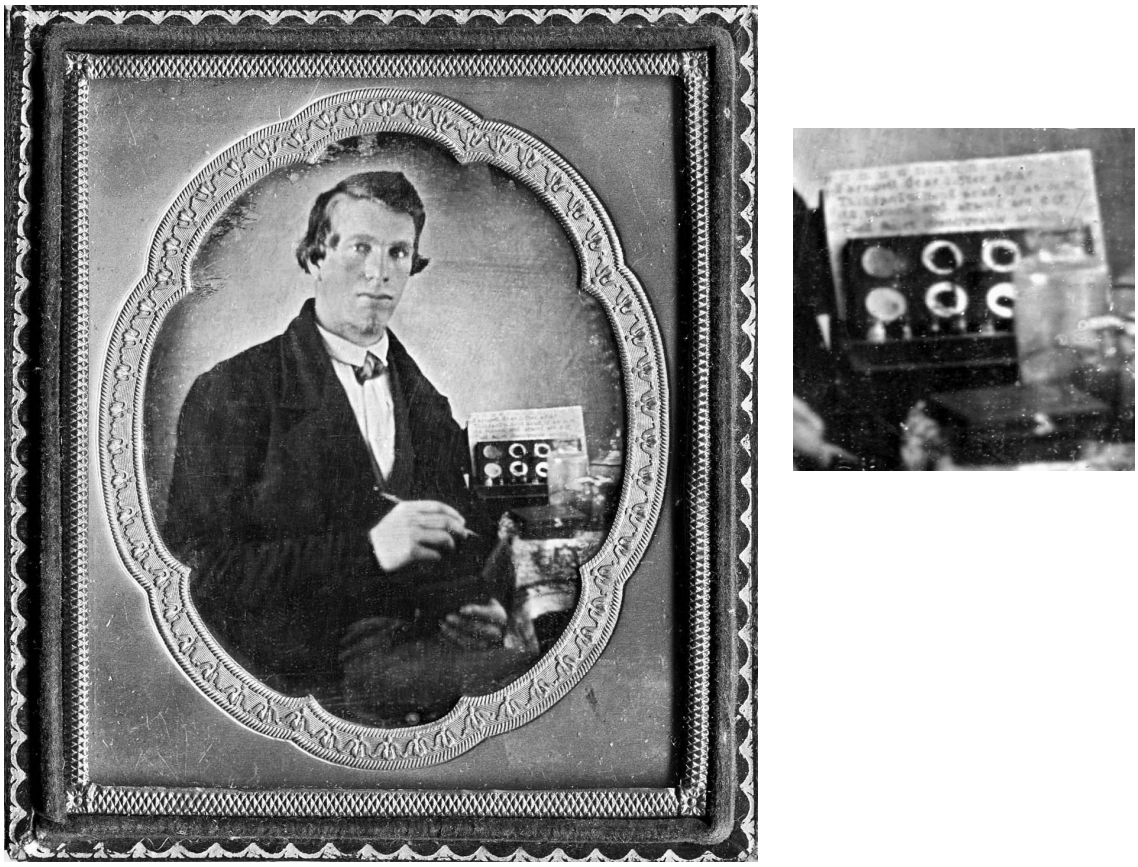


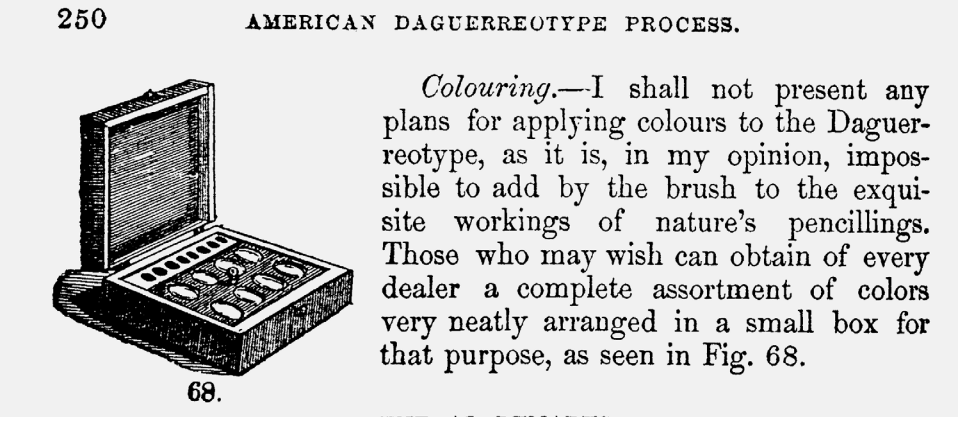
PLATE 4

Unattributed.
Tinting a Daguerreotype.
Sixth-plate daguerreotype, ca. 1853.
Collection of Matthew Isenburg.

in order to achieve a transparent effect that did not obscure the image.

> To apply the color, one strokes the brush over the color spread on the paper in such a way that it is scarcely tinted; then one dabs the plate lightly in the areas where that color predominates. This is done with such slowness that color cannot be seen with the first stroke; the color should become apparent only gradually. In this way, working longer in areas which should show more color, one arrives at a modeling of color as perfect as that of the image itself.[17]

A common problem with this method was getting the pigment to adhere to the plate properly. The surface of the daguerreotype has a texture which is not uniform between light and dark areas, effecting how it responds to the pigment. Where Beard had recommended grinding the pigment in gum arabic, Claudet preferred spirits of wine and others have been described as using fish-glue, sugar or gelatin. These substances served the purpose of thinning out the dry pigment and, once applied, left the surface of the plate slightly sticky allowing the subsequent layers to adhere. The pigment was allowed to dry completely before application. Often the plate itself was treated in some manner in order to aid in adhesion of the pigment. Submersing the plate, prior to coloring,



250 AMERICAN DAGUERREOTYPE PROCESS.

68.

Colouring.—I shall not present any plans for applying colours to the Daguerreotype, as it is, in my opinion, impossible to add by the brush to the exquisite workings of nature's pencillings. Those who may wish can obtain of every dealer a complete assortment of colors very neatly arranged in a small box for that purpose, as seen in Fig. 68.

PLATE 5

A wood engraving of a coloring kit from Robert Hunt's *Photography: a Treatise on the Chemical Changes Produced by Solar Radiation, and Production of Pictures from Nature, by the Daguerreotype, Calotype, and Other Photographic Processes. With Additions by the American Editor* [Samuel D. Humphrey] (New York: S. D. Humphrey, 1852): p. 250.

Courtesy of Gary W. Ewer

in a bath of tea or breathing on it to condense moisture were suggested aids for adhesion.[18] Leotard's patented process using ox stomach to cover the entire plate with a uniform surface served the same purpose.

By 1850 commercially prepared pigment was marketed for use in coloring daguerreotypes.[19] In 1861 Alfred Wall wrote:

> Until very recently, powder-colours were prepared with so little reference to the surface to which they were intended to adhere, that this branch of photographic colouring occupied a very insignificant position. . . . Now, however, if the amateur meet with such difficulties, it is his own fault; for although bad powder colours are very extensively sold, some of our best colour manufacturers have undertaken their preparation, and thus bestow a really artistic power in their application to the collodion or silver surface.[20]

The colors were often sold in sets of small bottles, finely ground and labeled with names indicating the areas for which they were to be used such as "Ladies Flesh Color." Sets of pigment came in boxes with earthenware saucers or with a velvet interior to be used as a palette. For application of dry pigment it was recommended to use only the finest brushes which retained a pointed tip after use. Wall suggested using the dark, rather than the red, French sables as they were the softest brushes available allowing for a delicate application of color.[21]

Techniques for application of colors in terms of artistic effect are similar to those used in traditional miniature painting. Most authors on the practice placed great importance on technique and go into considerable detail. For example, Henry H. Snelling's *History and Practice of the Art of Photography* recommends using darker tints for coloring the heads of men and for women "warmer tints should predominate, and in order to give that transparency so universal with the softer sex, a little white may be judiciously intermingled with the red tints about the lighter portions of the face."[22] Wall's manual lists one hundred "maxims for beginners" in order to guide them towards artistic results. It was common that a subject's jewelry was touched with gold or silver water color, oil paint or ground metals mixed with gum arabic. Many portraitists boasted that real gold was used, and charged their sitters accordingly, though often the area was simply touched with gold or silver oil paint and the results were unrealistic.[23] It is possible to render jewelry realistically with applied color however it is extremely difficult. To give the appearance of gold, Wall suggested

applying one color for the highlights, a separate color for the reflected highlights, another for local color, and yet another for the shadows.[24]Another approach was the practice of "pricking" or indenting the surface of the plate with a needle allowing the brilliance of the plate to show through any applied color or surface treatment.

The deterioration of colored daguerreotypes depends on the type of materials used to aid in adhesion and on the particular pigments applied. A pigment is a solid substance added to another substance to give it color. Nearly all pigments are metallic compounds although some such as lampblack and indigo are organic. Pigments are most often oxides or sulfides of transition metals.[25] For example, sienna and umber are oxides of iron. Cadmium yellow is a sulfide of cadmium. Some materials used to aid in adhesion, such as gelatin, are hygroscopic and/or contain sulfur and therefore contribute to the formation of silver sulfide tarnish on daguerreotype plates.[26] It is possible that sulfide pigments themselves have the same effect.[27] Natural, organic pigments such as carmine and indigo are not light fast by nature and will fade considerably on exposure to light. The study of the materials and processes used to apply color to daguerreotypes is important in order to achieve a full understanding of the medium. In terms of preservation it is vital and yet it is a subject that is difficult to study from the present-day viewpoint. Many hand colored daguerreotypes have been compromised by methods used to clean plates of tarnish or other attempts at restoration. Often the most brilliant pigments, therefore the most popular, such as carmine, are by nature pigments that fade upon exposure to light. This makes it difficult to assess them in terms of both theory and practice. Historical literature confirms that certain methods and materials used were more successful than others, yet it is impossible to know just how many variations on these may have been employed. In addition, when it comes to the scholarly study of daguerreotypes, and photographs in general, perhaps a bias against hand colored images remains. With so much published material regarding the history of the daguerreotype, the practice of hand coloring them receives little mention.

About the Author

Sara Ferguson holds a Bachelor of Arts in Fine Art Photography from University of Oregon and recently earned her Master's degree in Photographic Preservation and Collections Management from Ryerson University and George Eastman House. She currently resides in Oakland, California, where she works as Pictorial Stabilization Project Archivist for the Bancroft Library at University of California, Berkeley.

Notes

1. Brian Coe, *Colour Photography: The First Hundred Years 1840-1940* (London: Ash & Grant, 1978), p. 11.
2. Alfred Wall, *A Manual of Artistic Colouring, As Applied to Photographs* (New York: Arno Press, 1973), p. 3.
3. Coe, *Colour Photography*, p. 10.
4. Heinz K. Henisch and Bridget A. Henisch, *The Painted Photograph 1839-1914: Origins, Techniques, Aspirations* (University Park: Pennsylvania State University Press, 1996), p. 5.
5. Janet Buerger, *French Daguerreotypes* (Chicago: University of Chicago Press, 1989), p. 152.
6. Ibid.
7. Ibid.
8. Henisch, *The Painted Photograph*, p. 21.
9. Ibid.
10. Ibid., p. 22.
11. Coe, *Colour Photography*, p. 10.
12. Ibid.
13. Buerger, *French Daguerreotypes*, p. 153.
14. Henisch, *The Painted Photograph*, p. 8.
15. Ibid.
16. Buerger, *French Daguerreotypes*, p. 124.
17. Ibid., p. 153.
18. Ibid., p. 154.
19. Ibid., p. 153.
20. Wall, *Manual of Artistic Colouring*, p. 76.
21. Ibid.
22. Henry H. Snelling, *History and Practice of the Art of Photography*, **www.worldwideschool.org**
23. Wall, *Manual of Artistic Colouring*, p. 84.
24. Ibid.
25. James M. Reilly, *Care and Identification of 19th Century Photographic Prints*. (Eastman Kodak Company: Rochester, 1986), p. 25.
26. Buerger, *French Daguerreotypes*, p. 159.
27. Ibid.