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PHILOSOPHY OF CONSERVATION
by Jose Orraca
Curator of the International Museum of Photography
at the George Eastman House

I have divided my allotted time into two areas of concern: one being the philosophy of conservation as it applies to photographic collections, and the other the deterioration of cellulose diacetate film materials.

Ever since the word “Conservation” and “Conservator” became part of the museum vernacular, we have been barraged with every Tom, Dick and Harry, and to be fair, every Mary, Sylvia, and Esther, who wishes to claim the title of “Conservator.” In a game where there are no laws, everything is fair. The museum professional, however, should realize that there are conservators, and there are Conservators. The proper choice could mean life or death to their collections.

The thinking in Conservation to which I ascribe has an unwritten set of principles which most of us follow and which, when properly understood by the museum professional, should given them ample guidelines by which to make that choice. These are as follows:

1. In every museum and library the object, the artifact should be of supreme importance.
2. The conservation of a collection, that is the arresting of conditions which cause deterioration, is far more important than the restoration of any one object.
3. The Conservator must respect the artistic and historical integrity of any object or artifact.
4. The Conservator must adhere strictly to the law of irreversibility - never do anything that cannot later be undone.
5. Cosmetics is not the end of conservation, it is only a by-product.

In terms of photographic collections these principles translate themselves in this manner:

1. The object is of supreme importance. The function of a museum or library is to gather and preserve those items that fall within their interest or pursuit. It borders on the immoral for an institution to acquire much more than it can adequately preserve. Often an object runs a higher risk of destruction in the hands of an institution than in the concerned hands of a collector, however ignorant. When making choices as to whether a photograph should be exhibited or not because of the possible effects of lighting or other environmental conditions on its stability, the choice should always be on the well-being of the photograph. The light levels in a photoduplication machine might be harmful to some photographic images and human pollution, perspiration in particular, is a powerful source of deterioration to the stability of photographic images. It is true that all institutions have a certain degree of responsibility to their public and to scholars, but the supreme choice is clear when an object is at stake. On another level, it is the original object that is of importance. Copying can only be viewed as a precautionary measure to preserve the information, not to replace the object. I still shudder at the advice given concerning an historic site by an individual from industry with whom I am acquainted as a means of preserving a rather important collection. His advice was: “Copy and throw away the originals.” One would never think of solving a problem of deterioration in a lithograph or a painting by copying, in spite of the fact that there are enough tricks in the trade to make a copy ‘look’ like an original, complete with texture and foxing, why then delegate photography to the secondary?

2. The conservation of a collection, that is the arresting of those conditions which cause its deterioration, is far more important than the restoration of any one object. An institution may sometimes spend thousands of dollars having one painting restored while their other collections, usually photographs, are allowed to sit in wet basements and in acid folders. I call these basements “curators’ graveyards,” for it is often curators who make these “decisions” as to what is worth preserving in a collection. One can always
make a case to the board for funds with which to restore a painting, but a photograph? “...couldn’t we just recopy?” is usually the answer. I have better words for this sort of mentality, but they are best left for the private hours. This is not to belittle the conservation of paintings, but simply to stimulate a more equitable system of priorities.

3. The Conservator must respect the artistic and historical integrity of any object or artifact. This is a point upon which I would like to dwell at some length. A photograph, just like any other object, has a history. It begins with the intent of the maker and goes on further to the individual who collects.

A. The tonalities of a particular photograph are part of the intent of the photographer. If the photographer chose as its medium a photographic paper that rendered images in black and white, with rich blacks, like Karsh’s Velour, it would be immoral to change these tones to browns or any other color, no matter how good the intention. Gold toning has been widely advertised by industry as a way of increasing the stability of photographic images. The belief has been, and this is open to much skepticism, that by replacing the silver with gold, which is a more stable metal, the life expectancy of a photograph is increased. In the process the tonality of a black and white photograph is changed to shades of brown. We might increase the life expectancy of a photograph, though the same can be accomplished through archival washing and good storage conditions, but it is no longer the same photograph, and in my view, not of much value as a historical document.

B. Toward the turn of the century, ten or fifteen years in either direction much to-do was made over the presentation of a photograph. Kodak mounted its prints on clay coated mounts; embossed mounts with elaborate writing were supposed to give photographs respectability; photographers often chose double and triple mounts with alternate colors in order to ‘enhance’ the beauty of their photographs. These mounts are in fact part of the ‘total’ photograph. To remove a photograph from such a mount, even under the pretense of preserving the image, renders that photograph a cripple to our own insensitivity. There are better ways of preserving such a photograph, time and money consuming, that’s for sure, but our choices are limited. In each of these cases the photograph should first be unmounted, being careful not to damage the mount. The mountant or adhesive should be scraped off the photograph. The mount board should then be cleaned and deacidified to a pH of approximately 7. The photograph should then be remounted on the original board with a good polyvinyl resin or another stable adhesive.

C. A photographic album is not a group of unrelated images; all the photographs together, in precisely that sequence and in that position are the album. The parts can never be as strong as the whole. Often an album gives us a feeling of continuity, as in the case of a travel album, a series of events, a central group of people; we become intimately related with these people through the pages of the album. At other times war is brought to our eyes, images flashing in rapid progression before us. Others are sets of landscapes or architectural studies, often taken by various photographers but collected by one individual. But always they belong in the album, not as separate images. To break an album apart because it might be easier to preserve or to exhibit, or because it might be more valuable, speaking in dollars and cents, as separate images, denotes an ignorance of the medium and a lack of respect for photographic images.

I recently visited a major federal institution and found to my dismay that a beautiful album of civil war photographs was being taken apart, the photographs were unmounted and were being matted separately. Having raised the kind of hell to which my friends are accustomed, the curator was called for discussion. He gave three
reasons for his decision that I would like to question.

One was that the album did not have the continuity of a travel album and did not, therefore, merit being kept together, that, in fact, they were stock photographs chosen by another individual, a collector, and then placed in the album. The fact they they were chosen by this collector and placed in exactly that sequence reveals not only the matter of "choice" as a force in photographic history, but also the intent of the collector, which is also important, and is, as such, part of the history of this album. This album is after all one man’s view of the war through another man’s camera.

A second reason given was that the photographs, once overmatted, would be placed in a box in the sequence in which they were originally. You should some time compare the difference in moving mount board over mount board and paging the leaves of an album. It is a totally different feeling; each overmatted photograph acquires now its own sphere of reality, quite apart from the rest of the album.

The final reason given was that the photographs would be more readily accessible for exhibition purposes. Well, my answer to that should be readily understood. Which is more important, the album or one curator’s hallucination? In my view, that album is no longer among the living.

D. One further point concerning historical integrity, which while not totally fitting the context of this paper, bears discussion. During a recent trip to the F.D.R. home in Hyde Park, New York, I looked at a group of photographs dealing with life in the 1930’s by a New York City photographer. They were not original photographs, but rather printed by a modern photographer. Mounted on masonite, the edges trimmed with black magic marker to obliterate the reality of that two dimensional structure, and some in sizes so vulgar that they lost all sense of coherence, the exhibition was heavy in design, but very shallow in historical integrity. I have no way of knowing whether any original photographs by this man are available, but a bit of research, a look at the photographs of, for example, Lewis Hine, would have given the designer a fairly accurate idea of what style was prevalent among photographers in New York City at that time. The right of every photographer is to deal with his medium as he sees it, in whichever way it best portrays his work; the role of the historian or the curator is not to ‘improve’ upon a man’s work with whatever modern techniques are available, it is rather to preserve that original in its historical context, no matter how much it offends his artistic sensitivities.

3. The Conservator should never do anything which cannot later be undone. In his choice of materials with which he preserves a given object, the adhesive, the mount board, the solvents, the setting agents, the stabilization processes (including toning), he must make sure that the photograph can be unmounted, to use a common concern, or that the toner can be removed. This brings to light my other objection to gold toning; there is just no way to reverse that process; the very stability of the thin gold coating makes it impossible to be reversed. Any restoration or conservation process must be totally removable without causing damage to the object or without leaving any residues.

4. Cosmetics is not the end pursuit of a conservator, preservation is. Among that legion of would-be conservators there are many who are thoroughly trained in the arts of cosmetics. They can make an object look as beautiful as when it was new, but in the process they have destroyed its history, the evidence which time leaves on everything in the process of growing old. Further, the process by which something is made to look beautiful is sometimes its death. An object will look exceedingly beautiful now, a plasticized object in a plastic world, but how long will it last?

With these principles in mind the choice of an honest conservator should not be that hard.
A SEARCH FOR COLOR
by Floyd & Marion Rinhart

In the early 1840's when photography was still in its infancy, American daguerreian artists sought to emulate the work of miniature painters by bringing color to their creations—photographs on thin silvered sheets of copper. The first important step in “toning” the photograph came in the summer of 1840, when the use of a solution containing gold chloride was adopted. By 1842 the first color patent was issued—a simple method for hand-coloring daguerreotypes. Later, more complex color processes were patented during the 1840's and early 1850's which included methods of electroplating. In 1850 a color process—photographing daguerreotypes in natural colors was announced by a New York State man named Levi L. Hill. Hill's process caused a considerable controversy, but it was staunchly defended by Samuel F. B. Morse. Hill's process was kept secret until 1856, and by then the daguerreotype was declining in popularity. As the daguerreian era drew to a close, before the Civil War, the quest for color on such a wide scale would not begin again until the twentieth century.

COLOR PATENTS
as compiled by
Floyd and Marion Rinhart


U. S. PATENT NO. 2,522

Issued March 28, 1842, to Benjamin R. Stevens and Lemuel Morse, of Lowell, Mass.

“Improvement in the Mode of Fixing Daguerreotype Impressions so as to allow of Colors Being Applied to the Same.”

After the impression is taken upon a metallic plate, we then prepare the plate and protect and make fast the impression by coating the plate over the impression with varnish or with transparent solution of gums, which coating we put on by immersing the plate in varnish or in said solution. For this purpose we generally use gum-mastic varnish. After the plate is thus prepared, paints and colors may be applied to the impression without effacing it...any varnish or gums (solutions) transparent solutions of gums.

U. S. PATENT NO. 2,826

Issued Oct. 22, 1842, to Daniel Davis, Jr., of Boston. Assigned to John Plumbe, Jr., of Boston.

After the photographic surface is properly produced upon the metallic tablet it is immersed in a solution composed of sulphate of copper, water and cyanuret of potassium, or one of chloride of gold dissolved in water with the addition of cyanuret of potassium, or a solution made by dissolving gold in aqua regia and then adding cyanuret of potassium or in one composed of chloride of silver dissolved in a solution of cyanuret of potassium,—according to the color or colors, it is desirable to produce upon the picture.
The negative wire of a magneto electric machine or galvanic battery of sufficient intensity should then be applied to, or connected with the plate or tablet, while the positive wire is immersed in the solution. The result of this operation will be a combination of copper, gold, silver, according to the solution employed, with the photographic surface and to such degree as circumstances may require. If we are operating upon a Daguerreotype miniature and wish to produce a deeper shade of colour upon the face, then upon the body or dress—the extremity of the positive pole or wire of the battery should be held longer in contiguity with the face than with the body of the image. A discoloration of the face will thus take place. Then if it is desirable to produce a different colour upon the coat or other part of the picture—the plate is to be taken out of the solution and similarly immersed in another which is calculated to produce the requisite colour. Thus one uniform colour or shade may be obtained over the whole surface of the picture, or different parts thereof may be coloured as above set forth. The positive pole or wire of the battery thus becomes the pencil by which the image may be tinted while the deposits formed upon the plate by this operation combining with the chemical or photographic surface of the picture produces a transparent color.

The above process greatly improves and improve the photographic production of light and shade, while at the same time it fixes the picture in a manner more or less approaching to indelibility according to the amount of colour deposited.

There are other metallic solutions, well known to chemists, which may be used in the above manner for producing similar effects upon a photographic picture.

What I claim as my invention and discovery and desire to secure by Letters Patent is (1), depositing metals, from their solutions, upon the daguerreotype pictures for the purpose of giving them the desired tint, by connecting the pictorial plates with the negative pole of a galvanic battery or magneto electrical machine and immersing them in the above solution of metals in the manner above described or any other substantially the same. (2), also claim in combination with the above process the mode of tinting certain part or parts of the picture all as herein set forth.

U.S. PATENT NO. 3,085
Issued May 12, 1843, to Warren Thompson, of Philadelphia. Assignor to Montgomery P. Simons.

I take an ordinary daguerreotype or photographic picture and steep it first into a solution of gum-tragacanth about the consistency of milk, so as to protect the whole surface of the picture from the grease I shall next put on them. Having determined upon what part or parts of the picture I desire to place any given color, I put on the parts of said picture which I desire to be without the color I mean to apply sterine or any oily substance, wax, spermaceti, or any soluble resin or gum, all the above mentioned articles to be in a thin liquid and to be washed over said parts with an ordinary camel’s hair brush. The part or parts of said picture which I wish to color or tint I leave exposed or bare. I then take an ordinary or common electro-magnetic or galvanic battery, such as is used for silvering, gilding, or other purposes in the arts; then place the positive and negative poles of said battery in an open dish or saucer. If I desire to give a gold tint to the said part or parts of photographic picture, I pour into said saucer pure gold held in solution by cyanuret of potassium. I then immerse the plate or photographic picture in said saucer of pure gold held in solution by cyanuret of potassium. I then immerse the plate or photographic picture in said solution, first placing the negative pole of said galvanic battery beneath the said photographic plate or picture so immersed and in contact with said plate or picture, and hold the positive pole of said battery over the said photographic plate or picture, with the point thereof slightly immersed in said solution, until the said daguerreotype or photo-plate, portrait or picture shall have acquired the requisite tint, color, or hue by a longer or shorter immersion, which being obtained, I wash off the plate by
steeping it in boiling lye.

If it is desired to give any other color, hue, or tint to any other part or parts of said picture, the said plate is prepared, as above and before described, by covering up those parts already colored and leaving exposed those to be colored, and producing the different tints or colors with the aid of said galvanic battery, as above and before described, by immersing said daguerreotype or photo-picture, portrait, or plate in any of the metallic solutions either in their pure chemical state or mixed together in such proportion as the color or hue to be given may require and as they will produce said colors as known in the Arts.

U. S. PATENT NO. 4,369
Issued Jan. 30, 1846, to F. Langenheim, assignee of Jn. B. Isenring, of the Canton of St. Goll, Switzerland.

The nature of my invention consists of coloring a daguerreotype picture by agitating a quantity of highly pulverized mineral or other suitable color in a box and then placing in said box the plate to be colored, leaving only such parts exposed as are to receive the color, the rest being covered by a stencil or other similar device, where it remains until the color settles upon it in sufficient quantities.

In order to use my improvement to the best advantage, the plate on which the daguerreotype is taken is put into a frame, the edge of which projects up all around even with the surface of the plate, which is fastened into it by short pins. Over this is then placed a plate of glass, which is fastened to it by short pins. Over this is then placed a plate of glass which is fastened down by pins or wax at the edges. Then by means of a fine camel's hair pencil and india ink the outlines of the parts to be colored are drawn on the glass, after which a piece of tracing paper is laid over the glass and held in its position by means of weights or other suitable device and the outline that is upon the glass is transferred to the paper by a lead pencil. The paper and glass are then removed, and the parts indicated by the outline on the paper are cut out with a knife, and those parts of the picture on the plate that are not to be colored are covered with the stencil-paper thus formed and cut out to correspond exactly with the picture on the plate, which protect the portion not to be colored, and prevents the settling on them. The frame and plate thus partially covered are then placed in a box in which the pulverized color is previously stirred up, and just after the coarsest particles have settled there it remains until a sufficient quantity of the fine color is deposited on the plate. After this has been accomplished the picture is taken out of the box, the paper is carefully removed from the plate, and the picture shows beautifully colored on those parts that were exposed.

U. S. PATENT NO. 4,370

In the invention of Isenring for coloring plates, for which Letters Patent have been obtained, a difficulty arose in making the colors adhere, and it was found in practice that after a little handling the color came off, and the picture was thus defaced. To remedy that defect is the object of my improvement.

Either before the plate receives the color or at the same time I cause an impalpable powder of gum-dammar, or other suitable resinous gum, to cover the parts to be colored in the manner described in the patent granted to me, as the assignee of Isenring—viz., by placing the plate in a close vessel, face up, with those parts covered that are not to be colored, and then filling the atmosphere contained in said vessel with the powder of gums above named and allowing a sufficient quantity to settle for the purpose intended. After the color is laid on the plates I submit it to a sufficient degree of heat to fuse the gum, which causes the color to adhere.

U. S. PATENT NO. 4,423
Issued March 14, 1846, to Wm. A. Pratt, of Alexandria, D. C.
After having taken a picture according to the usual method and having gilded it, I proceed with varnish colors (mixtures of different coloring substances with mastic or copal varnish) to paint on the glass which is intended to cover the picture any design—such as clouds, plain black walls, curtains, chairs, couches, or any desirable accessories; also working up the daguerreotype itself to a degree of finish similar to oil painting with the same colors; then laying the daguerreotype on the glass a complete junction is formed from the sticky adhesive nature of the varnish color used. It is then submitted to pressure until perfectly dry, when I proceed, by the aid of nitric acid, to reduce or dissolve the copper backing to any desirable thickness. After this is done any part of the picture may be cut away at the pleasure of the operator and a new picture, prepared as before, attached. When it is wished to attach the portraits of two individuals to the same plate of glass all that is necessary is to cut away with a graver all the first plate attached on the side of the portrait to which the additional figure is to be appended, and then joining on the second plate, concealing the joint by means of which may be colored.

The same process may be successfully used in making very large portraits of the same individual, as the dress may be attached to the head and a chair to that in the same manner, or the dress may be painted on either the glass or plate, as may seem best to the operator. By this means we may produce any size picture that our glass will allow, and protect them by afterward covering the whole back with varnish and lamp black.

The method above described of joining two or more portraits or portions of portraits together, and the producing artificial backgrounds on the glass, which form they cement themselves and the glass on which they are painted to produce any size picture that his glass will allow with even a small-sized instrument, which last has many advantages which will in course of practice suggest themselves, the whole producing a beautiful enameled appearance and perfectly protecting the delicate picture from contact with either air or damp.

U. S. PATENT NO. 7,160

Issued March 12, 1850, to Aaron O. Dayton, of Washington-Alexandria, D.C.

Color—paper or any transparent or translucent substance.

If picture on paper—soak in water some hours, character of paper. If water hot when poured on twenty four hours sufficient. I then pour off water and place paper between sheets of blotting paper until nearly all water absorbed—leaving moist. I then attach it to a plate of glass (the face of picture next to glass) with some adhesive substance such as Canada balsam, If this used balsam glass should be heated and the balsam until it flows freely or mix with a little ether or spirits or turpentine and apply without heat. When balsam sufficiently hard to adhere paper to the glass—the paper is slightly moistened with water, and is rubbed off with fingers until nothing remains upon glass—thin film having the photographic picture on it... After film perfectly dry a coat of hard white varnish renders it transparent. When varnish dries the colors, finely ground in oil, are spread upon it, and are seen through the glass.

The principal point of invention is coloring these pictures from behind, and to effect this upon paper...preparatory process.

U. S. PATENT NO. 15,341


New mode coloring daguerreotypes or other photographic pictures on glass, metal or other material.

The nature of our invention or discovery consists in providing and applying both mineral and vegetable coloring matters in solution to the daguerreotype or any other photographic impressions, introducing the said coloring matters either into the plate after the
impression is “fixed,” by hyposulphite of soda or the cyanide of potassium, or by any other means.

The several coloring substances—e.g., red saunders, alkanet, dragon’s blood, etc.—can be used separately or in conjunction or compounded with various mineral substances, or with any coloring matters obtained from other roots, woods, gums, or other vegetable matter, the proportion or quantity employed being varied or regulated by the lightness or depth and strength of tone which may from time to time be required. The desired or similar results may be obtained from different formulae. The following answers for all practical purposes, but may be varied at pleasure.

Digest for two or three days red saunders (Pterocarpus Santalinus), half a pound in three pints of water, to which aqua-ammonia has been added. Then pour off the solution and precipitate by the addition of nitric acid. Wash the precipitate thoroughly with water and dry it. Then dissolve it in strong alcohol and dilute with the same as required to produce the tone or tint that may be desired. Alkanet (Anchusa tinctoria) may be prepared in the same way. Dragon’s blood dissolved in alcohol and treated in the same manner will produce the various shades of yellow.

The foregoing articles, and also madder, indigo, cochineal and some other coloring substances, both vegetable and mineral, alone or combined, will produce pleasing results when applied as follows, (although they may be introduced with the collodion.) We prefer first to develop the impression, then fix and dry it, and afterward to flow on the toning or tinting solution, as collodion or varnish, etc., is poured upon the plate, allowing the solution to run off the corner, and then leveling the plate to make the fluid flow uniformly over to tint the whole surface of the plate evenly. Then wash at once and thoroughly with clean water and stand the plate up to dry, after which it may be colored (the dress of any tint or color desired—the face, hands, etc. a flesh tint) with dry colors (as is usual in coloring daguerreotypes) applied to the collodion or upon the varnish.

**FEMALE FAITH**

She loved you when the sunny light
Of bliss was on your brow;
That bliss has sunk in sorrow’s night,
And yet she loves you still.

She loved you when you joyous tone
Taught every heart to thrill:
The sweetness of that tongue is gone,
And yet she loves you still.

She loved you when you proudly stept,
The gayest of the gay!
That pride the blight of time has swept,
Unlike her love, away.

She loved you when your home and heart
Of fortune’s smile could boast;
She saw that smile decay—depart—
And then she loved you most.

**TRUE GREATNESS**

Who noble ends by noble means obtains,
Or, falling, smiles in exile or in chains,
Like good Aurelius let him reign, or bleed
Like Socrates;—that man is great indeed!

**SMALL PORTION OF THE GLOBE INHABITED BY MAN.**

A part, how small, of the terraqueous globe
Is tenanted by man! the rest a waste,
Rocks, deserts, frozen seas, and burning sands;
Wild haunts of monsters, poisons, stings and death.
Such is earth’s melancholy map!
Ambrotype A ¼ plate Ambrotype from the Herb Peck Jr. collection, Nashville, Tenn. Do you have an unusual Ambrotype in your collection? If so, please send a copy of it for use in a special issue devoted to the Ambrotype process.
HISTORICAL PHOTO PRESERVATION

by Horace Brown

Photo-restoration does not always involve restoring the damaged or faded photograph to its original or new condition. It may involve making a copy of that photograph and creating, or re-creating, a new picture while removing blemishes and faults by photographic means or by artwork and retouching. Thus, complete restoration is not necessarily a part of Photo History as such and will not be dealt with here.

The deterioration that affects a photograph can be of a physical nature, a chemical one, or both. It can happen to a photograph that was made many years ago, such as a daguerreotype, or quite recently, such as a color snapshot and is usually the result of careless handling or improper storage.

Physical deterioration includes cracks, tears, breaks, pencil or ink marks, scratches, abrasions, etc. Chemical deterioration includes discoloration, fading, silver oxidation or exudation, water, fire, smoke, or dirt stains. These effects are due to exposure, dampness or moisture, the passage of time, improper processing, oxidation, or fire or flood.

Often old photographs are coated with a layer of soot, dirt or grime that can be removed, sometimes completely, by proper cleaning. While we cannot hope to be able to restore some of them completely, we may be able to improve them considerably. We say, “may be able to improve them”, because there are originals in such bad condition, so fragile and worn, that they cannot be treated or improved. We dare not do so lest they virtually disintegrate.

All originals should be examined closely for dirt, soot, or grime that covers the surface of the picture and dims the image. Often this is not obvious and a detailed examination is required. The dirt forms a layer that lies on top of the emulsion. If it is a heavy or dark layer, it will be noticed, but, if it is a light layer, it may be overlooked. With experience, your eye will detect the presence of such a layer almost instinctively.

One simple test can be made by rubbing a portion of the print area with an Artgum, a kneaded, or any soft eraser. Even the eraser end of an ordinary pencil will do the job. It will pick up or rub off any dirt and will reveal a cleaner print underneath. In testing, the use of caution must be emphasized. You must be careful while using the eraser, for there is always a danger of removing part of the emulsion by rubbing with too much pressure. To minimize this, the testing should be done along the edges or outer areas of the original, not in the center or at any point that contains a vital detail.

A simple test can be made by using a diluted solution of ammonia or liquid soap. This is applied carefully to the original with a swab of cotton. A light rubbing or swabbing, using a circular motion, should pick up any dirt or grime, which should be readily visible on the cotton, and the cleaner print beneath the dirt should become apparent. Here, too, the test should be applied to the outer, or least important, areas of the picture.

It is very important, before testing or cleaning, to examine the surface of the original for any cracks, holes, or breaks in the emulsion. We must know whether or not this surface is marred. If we use the eraser for cleaning, no matter how gently we apply it, some pressure must be applied. This can aggravate any break or scar, causing the emulsion to lift up and spread the damage. This same danger exists when we use the cotton swab moistened with ammonia or liquid soap. Moistening softens the emulsion, especially around the break, so that when the cotton passes over the spot, it picks up and tears away the emulsion.

If the eraser does not produce a cleaner spot, or if the moist cotton does not pick up any dirt, you can conclude that there is no dirt layer and that there is no reason to attempt cleaning. But, if the test is positive, you should proceed to attempt cleaning.

Cleaning by Eraser

Using the eraser is simple, since it merely involves rubbing the dirt off the surface of the picture. You
should have a soft rubber eraser, an Artgum, and a kneaded eraser, since it will usually be necessary to use all three. The rubber eraser, shaved to a point, can be used on smaller originals or to get into certain special local areas. The Artgum and kneaded erasers will be more helpful on wider areas of larger originals. No ink eraser or hard one of that type should ever be used, for these will scratch the picture.

A light touch is necessary. We mentioned the danger of using too much pressure. Even if the surface seems to be without any scratches or breaks, there is always the chance of damaging the emulsion and removing part of the image by rubbing too hard. You may find it necessary to go over the picture several times. Also, you may find that after cleaning the picture shows streaks that follow the strokes or direction of the eraser. This effect can be corrected by going over the entire picture with the kneaded rubber. Or, if this does not work, you can still go over the picture by swabbing with moist cotton.

Cleaning by Washing or Swabbing

When the original is of a larger size, the use of the eraser becomes impractical. Cotton that is moistened in a diluted solution of ammonia or of liquid soap is more efficient, since it covers the larger area more quickly.

The moistened cotton is applied to the print surface with a light touch. The print should be swabbed gently. If the dirt does not come off readily at first, you must not be tempted to resort to hard rubbing. This can pull off some of the emulsion. Rather, you should let the surface dry, then repeat the process with another piece of cotton moistened with the cleaning solution. Often the first attempt will serve to soften the dirt layer so that the second attempt cleans it off more easily. It is essential to allow the print to dry between the cleaning attempts so that the emulsion does not become too wet and soft.

We mentioned the instance where you have attempted to clean the original by the eraser method and are not satisfied with the results. This picture can be recleaned by washing. However, you must be more careful here. The rubbing could have created some scratches or ridges in the emulsion. You may not be able to see them, but they can be present and can allow the swabbing to pick up some of the emulsion. So, if you want to continue cleaning such a print by washing, you must do so with an extremely light touch.

A word of caution. Never try to soak these prints or immerse them in water with the hope that this will soften the dirt layer. It may only cause the paper or cardboard backing to weaken or disintegrate. And never let too much water get on the surface of the original. The cotton should contain only enough of the solution to pick up the dirt; it should not leave a puddle on the print.

Stains that have formed on a picture are not dirt. Many stains are caused by a chemical change in the actual photograph, which is often due to the simple passage of time, or it is due to improper or careless processing at the time the print was made. Stains of this type cannot be removed by cleaning.

Dampness and moisture also cause staining. This type of stain is usually brownish in tone. The dampness sets off chemical changes that cause the staining. It advances the effect of aging. If the print is mounted upon a cardboard, the cement or glue activated by the moisture will come through and stain the picture. These stains cannot be removed by cleaning, nor should bleaching, redeveloping, or toning be considered.

A number of other agents can and will stain the original print when they are brought into contact with it. These are ink, lipstick, food, paints, fire, smoke etc. To remove them or reduce their effect, you must determine what they are and what caused them. Ink stains may be reduced by cleaning with water or alcohol. Lipstick may be removed by water and soap, or by carbon tetrachloride; the same is true for food stains. Turpentine or carbon tetrachloride can help if the paint had an oil base. Smoke stains can be removed, to some extent, by water and soap or by carbon tetrachloride. Such treatment should be applied locally, by touching the affected area with
the cleaning agent. Do not get any on the unaffected area or it might create a new stain.

Treatment can reduce a stain; seldom will it remove the stain entirely. Never use any strange chemicals or bleaches. These can remove the entire picture and leave you with nothing to copy.

Another phenomenon that occurs to old photographs should be mentioned here. This is a peculiar one, to which the name “exudation” has been given. What occurs is that minute metallic specks form on the surface of the old photograph. This is due to the oxidation of the silver compounds in the emulsion that form the picture.

Fortunately, these granules are on the surface of the picture and can be removed without destroying or damaging the underlying image. They can be removed in much the same manner as that used for the removal of dirty and grime. That is, the layer of grain can be removed by rubbing it off with a kneaded or Artgum eraser, or it may be washed off with a cotton swab moistened with liquid soap or a mild solution of ammonia.

Unless the original is a small one, the use of the moistened cotton will prove much more practical than the use of erasers. Here, too, the same care and caution must be exercised as with the removal of dirt and grime. The original can be coated with a layer of dirt as well as that of the exuded silver grain. The same cleaning process will take care of both layers; it may only require a little more effort and time.

Many damaged prints have holes in them. They usually go through the paper backing. We can take some simple steps to minimize the fault. This involves backing the hole with a piece of paper or thin cardboard that matches the color or tone of the picture area surrounding it. If an area that consists of black clothing is pierced, then a black backing should be used. If the surrounding area is gray, then we would try to find a matching gray backing. If the hole is in a white shirt or a white dress, then, of course, a white backing should be used.

Original photographs fall into several classes. These are daguerreotypes, ambrotypes, tintypes, mounted prints and unmounted prints.

The daguerreotype is the oldest type of original photograph. This picture consists of a photographic image that has been fixed on a silver or copper plate. These small pictures were placed into small cases and covered with glass when presented to the customer. In many instances, they are still in the same case. As long as the original is encased, it cannot be treated. To get at the daguerreotype itself, you must remove it from the case.

This is a simple task. When originally placed in the case, a metal mat had been placed on top of the metal print. Then the print, mat and its cover glass were placed into a bezel of metal foil which folded under them. This made a unit that was forced into the snugly fitting case and held there by the pressure of the sides. To remove the daguerreotype from the case, this process has to be reversed. A razor or the point of a thin penknife is forced between the bezel and the edge of the case and used as a lever to pry out the daguerreotype and glass. Once this is done, the bezel can be removed by simply unfolding it. This is easily done by hand, and no tool is necessary. Then the daguerreotype is separated from the glass. It should separate easily and should not stick to the glass. Should it stick, however, proceed no further. Just clean the face of the glass and stop.

The main reason for removing the print from the case is to clean or replace the piece of glass, which may be so dirty or pitted from age that it cannot be cleaned. If there are stains or marks, they are of a chemical nature. These usually are bluish in tone and give the impression that the picture has been scorched by the flame of a match. Do not attempt to rub them off. It is very important to remember that the surface of a daguerreotype should never be rubbed with a dry cloth, a moistened cloth, or by your hand. One peculiarity of this type of photograph is that rubbing the surface will weaken the image and may remove it entirely. Should there be dust on the surface, blow it off. Do not brush it.

Daguerreotypes, because they have been made on a silver plate, reflect light like a mirror and the image is visible only when viewed by holding the picture at a certain angle to the light. Do not make any attempt
to overcome this effect. Do not experiment with it. If you attempt to tone down the reflectiveness with a matte spray, the image can disappear. If you attempt to rub it or clean it by other means than chemical the same thing can happen.

Beaumont Newhall, in his book “The Daguerreotype in America” (Page 133) offers the following formula for chemical cleaning of these images:

Remove the daguerreotype from the case, unframe it, and wash it in distilled water to remove surface dirt. Drain and immerse, until the discoloration is washed away, in the following solution:

- Distilled water ... 500 cubic centimeters
- Thiourea ............70 grams
- Phosphoric acid (85%) ........ 60cc.
- Non-ionic wetting agent
  (e.g. Kodak “Photo-Flo” Solution)2cc.
- Distilled water to make .........1000 cc.

Remove plate from bath and rinse under running water. Place in a mild solution of ordinary soap and water and agitate briefly. Rinse again with tap water, then distilled water. Immerse in 95% grain alcohol; drain; dry over alcohol lamp.

Provided it does not suffer physical damage, no photograph is more permanent than a daguerreotype. The image will bear the action of light, for the light-sensitive salts were completely removed in processing. Heat, however, must be avoided, for it will drive out the mercury which, in amalgam with the silver, forms the highlights. For this reason, daguerreotypes should not be exposed to sunlight or kept near radiators or hot electric bulbs.

In appearance, the ambrotype resembles the daguerreotype and it is difficult to notice any difference. Both are usually found in the same type of case. However, the ambrotype is not made on a metal plate, as the daguerreotype is, but on a piece of glass. It can be removed from its case by the same method as was described for the daguerreotype.

The image is found on the emulsion side of the glass plate. This side is covered by a protective glass, while the back is coated with black paint, which brings up the image and makes it visible. Without the coating, all you would see is a thin, negative image when the image is held up to light.

As in the case of daguerreotype, the image surface is extremely delicate and must not be rubbed or cleaned. While we must be careful with the emulsion side, the back of the glass plate can be worked on if necessary. When the paint backing has flaked off, which is common with this type of original photograph, the image seems to have disappeared and there is an apparent hold in the picture. This can be made to reappear by scraping off all old paint and repainting the back with black tempera, water color, or any quick-drying, black paint.

Since the image has been protected by the glass, there should be no layer of dirt accumulated on it. Should there be any dust or loose dirt, it should be removed by blowing with an air brush.

The main thing to remember about ambrotypes is not to touch or handle the picture surface (the emulsion side of the glass).

Tintypes are direct positive pictures. They are found both in cases, and unmounted and many of them date from the same time as the daguerreotype and ambrotype. Here the sensitized photographic emulsion was placed upon a thin sheet of steel, or “tin.” This is the reason for the name “tintype.” In more recent years, thick paper or thin cardboard was used as a base instead of metal, but the name remained. Such pictures were made, especially by sidewalk photographers, as late as 1950.

The most apparent fault with this type of original photograph is its darkness. There are no whites. Those areas that should be white are gray and the middle tones are almost black. The image is flat, dark, and obscure and shows itself only in strong light.

The tintype image is not as delicate as that of the daguerreotype or the ambrotype. It can be treated and handled. We can touch and rub it, something we dared not do with the other two types. If dirt is present, it may be removed by cleaning. Since most tintypes have not been protected by a case, there is a good possibility of a dirt layer being present. The
cotton swab with liquid soap is good here.

Shellac can be used to brighten the image. It can be sprayed on in a solution diluted with denatured alcohol, so that it can go through an air brush. It can be applied with a fine brush. Care must be taken that no dust falls on the picture while the shellac is drying. Then you must never attempt to remove the shellac with any medium or you might remove the emulsion.

While this treatment will make the image seem to be more visible, it will not lighten it or increase the contrast.

Some tintypes will be bitted, with pieces of emulsion missing and rusted metal showing through. This will not prevent treating the picture with shellac to brighten the image. Careful application will not cause the remaining emulsion to peel off in this case. But there is no really effective way to fill in these spots or reduce their effect.

The Tintype may be bent or undulated. If the curvature affects any critical area, it should be placed on a very hard surface, covered with a piece of stiff plastic and straightened with a burnishing tool. This should be done prior to any treatment for brightening the image with shellac.

One or a combination of the above processes may serve your purposes. Many, such as wiping paper prints with a slice of fresh bread or wallpaper cleaner or rubbing gently with dry corn starch, have been tried by the writer but none are as successful as liquid soap (not detergent). I specifically recommend Fels Naphtha based on experience in cleaning several hundred prints.

**New Camera Lucida**

Take a piece of looking-glass; rest it on a table in any angle in front of the object to be copied; then, having a piece of paper placed behind the mirror, by looking into it from the upper part of the glass with one eye, and with the other making the axis of vision meet in the focus point of both, any object may be seen and sketched with singular beauty and accuracy.

**DAGUERREOTYPES**

S. K. Nichols (formerly Bartlett & Nichols) would call the attention of those wishing to procure a good likeness of themselves or their friends, to his large and commodious Daguerrian Gallery, where they can have sittings for portraits or miniatures, and receive them beautifully cased in Morocco, Silk Velvet, Papier Mache, and other fancy styles, or set in Lockets, Pins or Rings, in a few minutes. While your mind is on the subject and you are in health and strength, do not delay. How many have lost a father, a mother a brother, a sister, or an innocent prattling little child, and have not even the shadow of a resemblance to look upon. After the separation some “little toy” or a trifling article is often kept for years and cherished as a token of remembrance. How much more valuable would be one of NICHOLS’ perfect Daguerreotypes. Reader, while your mind is on the subject, take an hour or two and visit the gallery, then you may at some future period have reason to feel grateful for these gentle hints from S.K. Nichols, 168½ Main St., State Bank Building. Charges as low as any, and all likenesses warranted to please.

For portraits of adults by our process and improved instruments, a cloudy day is quite as favorable as clear weather. For children a clear day (between 11 and 2) is preferable; in dress avoid white, blue or light pink. Whether visitors wish pictures taken or not, I shall at all times be happy to have them call and examine specimens. Country operators will always find a good assortment of stock on hand.

S. K. Nichols

_The Professional and Amateur Photographer, January, 1901._
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PHOTO ERA

Vol 8, No 6
June 1902
SKETCH OF J. GURNEY, ESQ.

In scanning over the ground for a subject for the journal, we have hit upon one that we believe will interest the greater number of our readers.

Instead of indulging in self laudation similar to what was evinced at the Photographic Exhibition last June, and on other occasions, we propose to write the biographies of the most eminent leaders in our profession. By taking them as our models, we shall advance more rapidly in the photographic art.

At the outset, we shall concisely study the career of one of the most modest and most successful photographers in this country; a gentleman who has done as much and possibly more than any other, to improve the sunlight art, to exalt its character, and to maintain its price in the market; we refer to J. Gurney, Esq., of this city, a man extensively known, and honorably identified with the heliographic art throughout the world.

In presenting to the photographers of our country a sketch of this eminent delineator of light and shadow, we have accompanied it with his portrait, an excellent likeness, taken under his own supervision, by our request, at the Fifth Avenue Temple of Photographic Art. In doing so, we feel an assurance that we shall receive warm thanks from thousands of our brother photographers throughout the land.

Mr. Gurney, is a New Yorker by birth, and has never resided out of the Empire State. He was born on the banks of the beautiful Hudson River, in the year 1812, so that he is now 57 years of age. In his youth he learned the jewelry trade, and pursued it for a livelihood, until the year 1840, when his attention was diverted from that pursuit to the newly-discovered process of taking pictures by sunlight. At this early stage of the art, there were no photographic journals published, and no other channel through which to gain a knowledge of the new and mysterious art, excepting such crude information as was published in the French journals and newspapers. Mr. Gurney caused these to be translated into the English language, and from this source he derived the rudiments of the Helion Art.

When Mr. Gurney first attempted to produce Daguerreotypes, he did so as an amateur from curiosity, and had no intention of pursuing it as a livelihood. As he advanced step by step, the art developed under his energetic and skillful management. He latterly became deeply interested in his profession, and found it very profitable. In consequence of this, in the year 1840, he abandoned the jewelry trade, as he foresaw that the Daguerreotype would eventually supersede all other kinds of miniature portraiture. He then opened a photographic establishment at No. 189 Broadway.

In these days, the daguerreotype was a great novelty. It sprang into existence almost simultaneously in Europe and America, as the French government purchased the invention, and published it gratuitously to the world.

Mr. Gurney, was among the first to apply the new art to portraiture, and no one in the business has pursued it with more devotion, energy and success than he has done. He remained at 189 Broadway for several years, continually improving the quality of his pictures, and increasing his patronage, until it became necessary for him to look for more extensive apartments and enlarged facilities for work.

In the year 1852, he removed his business to 349 Broadway, where he had plenty of room, and better accommodation every way, than his former place afforded. He purchased the largest and best apparatus, and procured the most skillful workmen to be found, which, with his own superior knowledge of the business, and able management, placed him in the front rank of the daguerreotypists of the world.

Much of Mr. Gurney's success is due to his affable and generous nature. He is warmhearted and courteous, not only to his patrons, but to all his associates.

When photographing came into existence, Mr. Gurney was among the first to adopt and introduce it. This opened a new and more extensive field for his ability and capital, which he pursued with increased energy, importing from Europe large and costly apparatus, material, operators, artists, colorists, etc., etc.
With this branch added to his business, the increased demand for more and larger portraits made it necessary for him again to change his location, and he removed to 707 Broadway, where he established an elegant gallery, and has had abundant success. Up to the present time, Mr. Gurney continues to make the beautiful Daguerreotype.

Others have cast it away, but he still clings to it; it is his idol, the object of his first photographic love, and why should he not; it is an imperishable print, in which light and shadow blend in mellow harmony on the highly polished silver tablet, in almost super-human perfection, and defies the hand of the most skillful painter to imitate it.

In addition to his extensive establishment, 707 Broadway, he has recently leased a large building on Fifth Avenue, corner of 16th Street, where he has fitted up the most expensive photographic establishment in the world, known as that of Gurney & Son.

Mr. Gurney is not known as an inventor, either in photographic chemicals or apparatus; whether this is owing to his lack of time or other causes, we cannot say; he, however, has always been among the first and most liberal to encourage the inventor, by purchasing, at whatever price was charged, any and every invention or improvement offered to him. His good mechanical and quick observing eye would often detect good qualities and advantages that most men would overlook.

Much has been said about the extreme selfishness photography ever published in this country, and I newly-discovered process of taking pictures by sunlight, several years, continually improving the quality of We might illustrate this trait in his character, by giving great statesman Daniel Webster, in connection with the writer and will do so on a future occasion. Mr. Gurney, at present, holds an enviable position not merely as a photographer, but in social life. By his industry and frugality he has become wealthy; a reward which he well deserves.

If in this brief sketch, and the accompanying superb likeness of the distinguished photographer and esteemed citizen, J. Gurney, Esq., our readers find a source of interest and pleasure and will endeavor to imitate his example, we will ask nor desire no greater compensation for the humble part we have taken in the matter.


Humphrey’s Journal 1859

ON AN INFANT SLEEPING

A Holy smile was on its face,
And sweetness on its lip;
Such innocence, such lovely grace,
Might tempt a saint to sip!

AMERICAN PHOTOGRAPHIC PATENTS

No. 15,854.—Wm. Lewis and Wm. H. Lewis, assignors to Malonzo J. Drummond.—Plate-Holder for Photographic Cameras.—Patented October 7, 1856.

The nature of this invention consists in the use of glass corners h in the frame f, which receives the corners of the glass, or other plate, to prevent the chemicals, which adhere to said glass, from coming in contact with any material that will cause discoloration; and also in the introduction of a receptacle d in the bottom of the frame, to catch my drippings from said plate.

Claim.—Forming the glass or vitrified corners h with a flanch or rim in one solid piece, the said flanch or rim taking the edges of the photographic glass or other plate, substantially as and for the purpose specified, and irrespective of the manner in which the said vitrified corners are attached to the frame.

Also, the receptacle d below the glass or other plate, to catch any drippings from said plate, substantially as specified.
TIM is a large and lofty edifice, situated on the northern bank of the river Potomac, a mile from the Capitol, the building where Congress meets. Near it are four buildings, devoted to the departments of State, War, Navy, and Treasury. It stands on a slight elevation, and commands a fine view of the Potomac and its banks. The grounds around are pleasantly laid out, and are ornamented with trees, shrubs, and walks.

The rooms in the house are large and lofty, and appear very handsome. The President of the United States resides here. Here he receives foreign ministers; and here he holds council with the members of his cabinet. His large evening-parties are called levees.

The president's house is, on the whole, handsome and agreeable, though it is very inferior to the palaces of kings and princes of Europe. When foreigners come to this country, and compare the residence of our chief magistrate with the dwellings of their own sovereigns, they think it quite mean. But when we consider that the object of government is to make the people happy, and not to pamper the pride of kings, we may be rather gratified than annoyed at the comparisons of those who are brought up to admire and worship royalty.
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