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COLLECTION OF DAGUERREOTYPES

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Topics in Photographic Preservation, Volume 3.

Pages: 22-27

Compiler: Robin E. Siegel

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RESTORATION AND CONSERVATION OF THE LAMBERT GIFT
COLLECTION OF DAGUERREOTYPES

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In 1984, 129 daguerreotypes belonging to Mrs. Phyllis Lambert of Montreal were placed on loan with the National Gallery of Canada. In 1988 the collection was generously offered as a gift to celebrate the opening of the Gallery's new building. It was decided that the images would be exhibited as part of the opening installations.¹ In anticipation of the exhibition, planning for the conservation of the objects was begun.

The Lambert daguerreotypes were made between 1841 and 1857 and most -- over half, in fact -- originate in Germany. Others are the work of American, British, French or other European daguerreotypists. While generally in very good condition this group showed the usual effects of chemical and physical deterioration by the occurrence of tarnish on the image surfaces, fading and discoloration of the paper elements, leaching and efflorescence in the cover glass sheets and the normal wear that is to be expected on objects which are designed to be handled. In addition it was evident that the packages had been opened and re-sealed, several times in some cases, by previous owners. Re-sealing with new paper tape and application of new backing papers and labels had obscured the underlying original package materials.

The decision to undertake systematic examination, documentation and conservation treatment of the daguerreotypes prior to exhibition was made to achieve several goals:

re-establishment of an earlier state of the package, either by use of original material or reconstructed elements based upon clear internal evidence;

removal of obscuring and potentially damaging poor-quality cover glass sheets² and replacement with high-quality anti-reflective glass; removal of any other poor-quality, unstable and/or unsuitable materials from the package interiors;

removal of dust, particles and accretions obscuring the image;

assist research into the history and physical nature of the plates by documenting and preserving all internal evidence (such as labels, plate maker's stamps, plate dimensions, etc.).

The conservation work was performed during 1987 and 1988 by Anne Maheux, Marion Mertens and the author, all of the NGC Restoration and Conservation Laboratory, working in consultation with James Borcoman, Curator of Photographs. Steps in the procedure to treat the material included preliminary condition reporting, treatment proposals, disassembly, interim observations supplemented by diagrams and documentary photographs, physical treatments and reconstruction of selected package elements (if necessary), reassembly and treatment reporting. All of these steps were accompanied by consultation between conservator and curator.

The following description of procedures is based on a slide sequence documenting the examination and treatment of a half-plate daguerreotype made in Paris, c.1845, which is attributed to Alphonse Lamaille and which depicts a seated man and his son with their arms around one another.³ This plate is contained in a European-style package; that is, it has no case but is instead tightly held in a sandwich consisting of cover glass and decorated paper mat above the plate, and cardboard and paper backings below. The sandwich is bound together by a paper sealing tape running around all four edges which is glued down on both front and back surfaces. The colour and texture of the sealing tapes were chosen to supplement the decorative scheme of the package.

The preliminary examination, completed before any disassembly, included detailed descriptions of both the plate and its housing as well as detailed comments on observed physical and chemical deteriorations in all elements. Documentary photographs and location diagrams supplement this text. The Lamaille daguerreotype showed the routine plate scratches and accumulation of dust and debris on the inside of the package along with at least two layers of sealing tape.

Treatment recommendations were discussed and the major aims of treatment were established before proceeding. The treatment of the Lamaille daguerreotype was intended to remove any dust and particle accumulations from within the package and to re-establish the original binding edge. Disassembly began with layer-by-layer removal of the paper components. A 1:1 mixture of ethanol and deionized water was used to swell the gelatin adhesive. Paper layers were peeled back and subsequently immersion washed to remove residual

adhesive. In the course of disassembly it was discovered that the Lamaille package included a third, underlying layer of sealing tape. It was this layer which would subsequently be re-assembled on a new support and reused in the conserved package.

The daguerreotype plate itself was removed from the package at the earliest possible stage of disassembly in order to protect it from contact with solvents and adhesive. Precise measurements of all plate dimensions, including thickness, were made. Blind-stamps and other features were noted and a more precise description was made of the condition of the plate surface, now seen without an overlying glass sheet. These observations were incorporated in a supplementary report.

Treatment of the Lamaille plate itself, as with the great majority of cases, was limited to the mechanical removal of surface dust. Earlier in the project this was done using a Mini-Vac.⁴ Subsequently a No. 8 Hamilton Squirrel Mop was used.⁵ Either tool, if used carefully, will not disturb the daguerreotype image.

A limited number of plates were washed in alkalinized water.⁶ These plates showed accretions, possibly deposited from deteriorating cover glasses, which could not be removed by mechanical means and which detracted from the image. This procedure involves immersion of the plate in a bath of deionized water which has been made alkaline to pH 9.0 by the addition of ammonium hydroxide solution. The plate remains in the bath for 5 minutes during which time the bath is rocked occasionally and gently. Rinses with deionized water (neutral) followed by anhydrous ethanol complete the procedure. No mechanical action to remove accretions during aqueous immersion should be attempted. Plates which have not been gold-toned, which include all plates produced prior to 1842, may be more sensitive to image particle disruptions and thus should be screened from aqueous treatment. Radioisotope-excited X-ray energy spectrometry (REXES) can readily identify untuned plates.⁷

Various paper elements from the packages underwent treatment as determined through consultation between conservator and curator. Treatments included dry cleaning, washing, stain reduction, lining, infill, integration and other conventional techniques. In general, paper elements not destined for reuse on the conserved package were treated minimally and encapsulated. Original paper elements which were to be replaced on the package were, in many cases, lined onto strong Japanese paper. Occasionally strong internal evidence of some original paper element, now fragmented, would be found within the package structure. Reconstructions of these elements were produced which attempted to reproduce the colour, gloss and texture of these fragments. Missing leather and metal elements from the American/British style cases were also reconstructed using various papers and appropriate finishes. The curator, in all cases, made final

decisions on which elements would be used to package the conserved daguerreotype.

In most instances the plates had been held inside the European-style packages by strips of gummed or glued paper tape which held the plate to the verso of the paper mat. In others, the plate was simply held between the package layers by friction. Both means of attachment were frequently found to have failed, allowing the plate to slip and the image to appear out of register through the mat aperture. Two approaches were used for re-suspending the plates, properly registered, in the conserved packages.

The first technique involves securing the perimeter of the plate between two layers of 5.0 mil Type D Mylar. Two sheets of Mylar, larger than the package dimensions, each have rectangular apertures cut in their centres, the aperture being some 4 mm. smaller in both directions than the size of the plate. The plate is positioned precisely over the aperture on one of the sheets and the second sheet is likewise positioned over the plate. The plastic sheets are tightly held together by strips of 3M Scotch Brand Double-Coated Tape No.415 placed 2-3mm. beyond the edges of the plate. When assembled, the Mylar sandwich structure securely holds the plate and can be trimmed to package dimensions so that the image will be registered with the mat aperture. The advantage of this method is that it does not add to the final thickness of the re-assembled daguerreotype package. It is unsuitable, however, for plates which exhibit silver exfoliation at the plate edges since there may be some danger of foil loss during removal of the electrostatically charged plastic sheet.

Alternatively, a multi-layered structure of unbuffered 100% cotton board laminated together with wheat starch paste adhesive can be constructed which will hold a plate, or plates in the case of stereo-daguerreotypes, in precise register. This structure will consist of a minimum of six plies; a 2-ply backboard, a 2-ply (minimum) spacer with an aperture to fit the exact dimensions of the plate and a second 2-ply sheet, also with an aperture, to hold the plate surface away from the cover glass surface. The edges of all apertures must be painted with black watercolour to avoid reflections within the package. Again, it should be noted that this structure is trimmed to final package dimensions only when complete to ensure the most precise positioning of the image. The disadvantage of this type of structure is that it will add thickness to the conserved package which may be aesthetically objectionable or may be incompatible with the original case design.

In most cases the cover glass was replaced with a new sheet of Denglas anti-reflective glass.⁸ This material, coated on both surfaces with a mixture of metal oxides, was found to reduce the difficulty of viewing daguerreotype images under many non-ideal

illumination situations. Some original cover glass sheets are lacquered on their inner surface to provide a decorated mat around the (unpainted) image aperture. In instances where the paint or the glass itself was deteriorated, these elements were reconstructed by spraying a pigmented Acryloid B-72 solution onto the inner surface of the new Denglas sheet. Letraset Pantone 415D self-adhesive film was found to be a useful masking material for reproducing the decorative lines and aperture shapes common in these types of cover glasses.

Two-ply unbuffered 100% cotton board was usually introduced as a new backing. The sealing tape would thus be adhered to the outer surface of the cover glass and, on the back, to the outer surface of this new backing board. The original backing paper, often with a new secondary support, was pasted around its perimeter and applied over the new backing board and the edges of the sealing tape, thus completing the package. The adhesive chosen for these operations was a poly(vinylacetate) emulsion (ex.: Jade 403). This material showed sufficient adhesion to plate glass and good working characteristics for the delicate operation of establishing a tight seal around the package edge.

Watercolours were used to integrate areas of loss, particularly on the sealing tapes. Renaissance microcrystalline wax was used to adjust the surface gloss of these inpainted areas.

"After treatment" documentation included a written treatment report (in check-off format), photographs and, if necessary, a schematic diagram of the new package internal structure. All original documentation concerning each object was assembled into a dossier which is held in the conservation department. All materials that had been removed from the packages during treatment are held in the curatorial files section of the Photographs Collection.

The conserved daguerreotypes were returned to storage in Solander boxes outfitted with rigid poly(ethylene) foam (Ethafoam) blocks with wells cut to fit the individual objects. The lids of the boxes are lined with a tarnish inhibiting cloth. In these containers the daguerreotypes are easily accessed and viewed and are protected from physical and chemical damage.

In many cases the visual differences between the conserved daguerreotype and its "before treatment" state are rather difficult to detect or are virtually invisible. This is to be expected given the intimate scale and gem-like quality of the plates and their "settings". Even subtle improvements in the clarity of the cover glass and in the suppression of distracting damages will allow a more direct appreciation of the image. Furthermore, the quality of the unseen materials which constitute the "environment" of the

daguerreotype plate is critical⁹; conservation treatment of daguerreotypes should focus on identification and removal of poor-quality materials from near or direct contact with the plates.

The conservation of the Lambert Gift collection of daguerreotypes also points up the importance of close co-operation between curator and conservator at all stages of treatment.¹⁰ The highest standards of care for collections, involving both optimum preservation and respect for the physical, historical and aesthetic integrity of an object, can only result from bringing together technical knowledge, manual skills and aesthetic sense informed by historical knowledge.

NOTES

1. James Borcoman, Intimate Images, exhibition catalogue, (Ottawa: National Gallery of Canada, 1988), 24pp.

2. M. Susan Barger, William F. Stapp, "Daguerreotype: A Precautionary Discussion of Deterioration, Cleaning and Treatment," Preprints of the 7th Annual Meeting of the Committee for Conservation of ICOM (Copenhagen: I.C.O.M., 1984), pp.84.14.10-84.14.11.

3. Catalogue no.66 in Borcoman, op.cit.

4. Available from Efston Science Inc., Science and Technology Agora, 3350 Dufferin St., Toronto, Ontario, Canada, M6A 3A4. Suggestion of Tom Edmondson and Susan Barger for dry cleaning of daguerreotype plates.

5. Available from John Myland Ltd., 80 Norwood High St., London SE27 9NW. Suggestion of Ian and Angela Moor for dry cleaning of daguerreotype plate surfaces.

6. This procedure was developed following a suggestion by Tom Edmondson.

7. Thanks to Marie-Claude Corbeil and Ian N.M. Wainwright of Analytical Research Services, Canadian Conservation Institute for analyses.

8. Manufactured by Deutsche Spezialglas AG.

9. Peter J. Mustardo, "The Daguerreotype's Environment," Topics in Photographic Preservation, vol.1, 1986, pp.16-22.

10. An article examining the co-operative approach to this project will be published under the title "Conservation of a Daguerreotype Collection: Shared Responsibility," in Muse (Special issue on photography), March, 1989.