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The Arthur H. Flint collection : preserving photographic objects for a private collection

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THE ARTHUR H. FLINT COLLECTION:
PRESERVING PHOTOGRAPHIC OBJECTS FOR A PRIVATE
COLLECTION

By
Samantha Wells
-August 2008-

THE ARTHUR H. FLINT COLLECTION:
PRESERVING PHOTOGRAPHIC OBJECTS FOR A PRIVATE
COLLECTION

By

Samantha Wells

Bachelor of Fine Arts, Photography
The Ontario College of Arts & Design
Toronto, Ontario, Canada 2005

A thesis project presented to Ryerson University and George
Eastman House in partial fulfillment of the requirements for the
degree of Master of Arts in the program of Photographic
Preservation and Collections Management.

Toronto, Ontario, Canada & Rochester, New York, The United States 2008

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ABSTRACT

Samantha Wells
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This paper describes an applied project relating to a small private collection of fine art photographs created by the little-known American Pictorialist photographer Arthur H. Flint (1864-1943). After suffering years of neglect, the collection was acquired in 2007 by Toronto-based photographer, collector and dealer Steven Evans. Over the course of eight months, I worked with Mr. Evans on the physical and intellectual arrangement of this collection. In addition, I researched the life of Arthur H. Flint and his significance in context to the Pictorialist movement in the USA.

This project provides a biography of photographer Arthur H. Flint; an outline of the preservation and collections management process for the Arthur H. Flint photographic collection, and includes a CD containing 234 catalogue records of the Flint collection.

ACKNOWLEDGEMENTS

I would like to thank Robert Burley, PPCM program director and thesis advisor, as well as my second reader Sophie Hackett, Assistant Curator of Photography at the Art Gallery of Ontario. I would also like to thank Grant Romer for his conservation expertise, Joe Struble for his knowledge in preservation, Wataru Okada for his registrarial advice, Assistant Curator of Photographs Jamie Allen for all her help, and Chie Ito, a Fellow in the Advanced Residency Program in Photograph Conservation, for providing her time and skill to perform conservation analysis and treatment.

Special thanks to Tara Cuthbert, Archives Assistant at the Library and Archives Department at the Brooklyn Museum, Andrew Eskind, editor of the *Index to American Photographic Collections* and Verna P. Curtis, Curator of Photography, Prints and Photographs Division at the Library of Congress, for her correspondence regarding the Clarence H. White holdings.

I would also like to thank my classmates for being wonderful colleagues and my parents, David and Linda Wells, whose unwavering love and support has been the catalyst of my achievements.

And finally, I would like to thank Toronto photographer, collector and dealer Steven Evans. Without his generosity, knowledge and passion for the medium, this practical project would not have come to fruition. Thank you.

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INTRODUCTION

This applied project focuses on the preservation and management of a private collection belonging to Toronto photographer, collector and dealer, Steven Evans. Mr. Evans proposed the Arthur H. Flint collection be utilized as an applied thesis project. In late September 2007, Robert Burley, director of the Photographic Preservation and Collections Management program, contacted me as I had expressed interest in working on an applied project of this scale.

I met with Mr. Evans in October 2007 to view and discuss the Flint collection and agreed to chronicle the life and career of Arthur Flint, create a digital database and inventory of images, document the existing condition, prescribe a course of conservation, produce a written and illustrated thesis about the photographer and process the organization and preservation of the Flint collection, and consider the possibility of exhibition and/or publication. These requests were carried out over the course of eight months. Additionally, I provided a housing plan for this collection and coordinated conservation treatments by Chie Ito (a Fellow in the Advanced Residency Program in Photograph Conservation at George Eastman House) for two of the photographs in the collection.

Mr. Evans acquired the Flint collection in the summer of 2007 from the new owner of a home in Picton, Ontario. This home once belonged to Arthur Flint's grandson, Rodger Grieg, who had attained the collection from his unwed aunts Huldah and Lydia Flint, who were living in New Hampshire (perhaps in the Flint vacation house). Rodger and his wife Mary, bore no children and when they passed away, the house and its contents were bequeathed to a distant nephew who left the home unoccupied and unkempt for over twenty years before selling the house and its contents to the present owner. Due to their neglect, the majority of the photographs have undergone severe deterioration.

SCOPE AND CONTENT

The Arthur H. Flint collection is comprised of 54 large platinum prints and 24 medium-sized platinum, gum bichromate and gelatin silver prints. The collection also includes 5 family albums and 38 loose family snapshots comprised of various photographic processes, which include tintypes, platinum, gelatin silver, salted paper and cyanotype prints. In total, there are 116 loose photographic prints and 5 photo albums containing 597 prints (418 photos in Album One, 21 photos in Album Two, 25 photos in Album Three, 25 photos in Album Four, and 108 photos in Album Five), totaling 121 photographic objects (as each album accounts for one object).

There are over seventy significant photographs in the collection by Arthur H. Flint (1864-1943), an American amateur Pictorialist from New York who was active in photography from 1900-1914. His work was exhibited in at least 22 exhibitions during this fourteen-year period in institutions such as the Brooklyn Institute of Arts & Sciences, The Art Institute of Chicago, the Albright Art Gallery in New York, the Worcester Art Museum in Massachusetts, the Stedilijk Museum in Amsterdam and the Exhibition Palace in Dresden. The majority of Flint's platinum prints are portraits taken between 1908-1913 of the Flint family, including his wife, Mrs. Elizabeth Flint, daughters Huldah, Dorothy and Lydia, and nieces Gertrude and Bernice Frisbe.

TABLE 1: Initial Inventory of the Flint Collection

PROCESS	TYPE/SIZE	NUMBER
Platinum	Large Japanese supports (46 x 38 cm)	34
Platinum	Large manila supports (46 x 38 cm)	16
Platinum	Various sized prints (17 x 15 cm – 40 x 44 cm)	13
Platinum/Gum	Re-mounted using archival matts (50.5 x 40.5 cm)	3/1 (4)
Gum	Various sized prints (15 x 16 cm – 40.5 x 30.5 cm)	4
Gelatin Silver	Various sized prints (26 x 24 cm – 40.5 x 30.5 cm)	4
Cyanotype, Platinum, Gelatin Silver, Colour	Family albums Album 1 – 23 x 33 x 3 cm, 73 album pages Album 2 – 20 x 14 x 1 cm, 12 album pages Album 3 – 20 x 14 x 1 cm, 12 album pages Album 4 – 15 x 18.5 x 1.5 cm, 49 album pages Album 5 – 16 x 20 x 2.5 cm, 51 album pages	5
Gum/Platinum	Framed prints- wood and glass Gum - 17 x 22 cm; 17 x 22 cm Platinum - 26.5 x 16.5 cm	2/1 (3)
Tintypes, Salted paper, Collodion, Albumen, Gelatin silver	Box of family snapshots (7 x 6 cm – 22 x 15.5 cm) Tintypes = 2 Salted paper = 1 Collodion = 4 Albumen = 1 Gelatin silver = 30	38
	TOTAL ITEMS =	121

NOTE: Refer to Appendix B for a short glossary of photographic processes within this collection.

RESEARCH AND RESOURCES

At the start of this project, Steven Evans and I knew very little about Arthur H. Flint other than that he was an amateur Pictorialist photographer from New York. Compiling a history of Flint was a lengthy process. In most cases, archivists do not have the resources to focus on research. Their main priority is to ensure the preservation and management of a photographic collection. I was fortunate to have the time to research the life of Flint throughout the course of eight months, thus strengthening the significance of the photographic objects within the Flint collection.

Research was conducted throughout this applied project, utilizing a variety of resources. The most convenient tools were genealogical websites such as Genealogy.com¹ and Ancestry.com.² These websites helped to flush out the life of Arthur Flint through US Census forms, newspaper articles and passenger lists which included place of residence, birth date, occupation and income information. Google™ Book Search was also a useful tool.³ Here, I was able to search for digital publications that mentioned Flint. These online publications provided further information, which included Flint's employment history and his involvement in numerous art-related organizations.

The outdated VAX database at George Eastman House was useful in locating exhibition information and photographic periodicals mentioning Flint. These periodicals are available in the George Eastman House library. Andrew Eskind, and fellow editors from the George Eastman House, created this photographic database and compiled the *Index to American Photographic Collections*.⁴ George Eastman house replaced the VAX database with The Museum System (TMS) in 2002, however, it the VAX system is still utilized in the Archives Department. Flint was mentioned in *American Amateur Photographer* (May 1902),⁵ *Camera Craft* (May 1908),⁶ *Camera Work* (1909),⁷

¹ Genealogy.com, http://www.genealogy.com/index_n.html (accessed April 1, 2008).

² Ancestry.com, <http://www.ancestry.com> (accessed April 2, 2008).

³ Google™ Book Search, <http://books.google.com> (accessed April 9, 2008).

⁴ Andrew Eskind and others, eds., *Index to American Photographic Collections: Compiled at the International Museum of Photography at George Eastman House*, (New York: G.K. Hall & Co., 1995).

⁵ John Nichol and F.C. Beach, eds., *American Amateur Photographer, May 1902* (New York: American Photo Publishing Company, 1902), 14:227.

⁶ Fayette J. Clute, ed., *Camera Craft* (San Francisco: Bolt & Braden Co., 1908), 15:193.

⁷ Alfred Stieglitz, ed., *Camera Work* (New York: Kraus Reprint of Kraus-Thomson Organization Ltd., 1969), 42.

and *American Photography* (1912).⁸ Furthermore, a file was kept on-hand in the Archives Department at George Eastman House which included photocopies of eight exhibition catalogs in which Flint was included: *The National Arts Club: Special Exhibition of Contemporary Art* (January 4-25, 1908); *Worcester Art Museum: Fifth Annual Exhibition of Photographs* (October 30 – November 30, 1908); *Internationale Tentoonstelling van Foto-Kunst, Salon* (August 1-31, 1908); *International Exhibition: Pictorial Photography at The National Arts Club* (February 2-20, 1909); *Internationale Vereinigung von Kunstphotographen* (May-October, 1909); and *The Eighth American Photographic Salon: Chicago Institute of Art* (May 1912).⁹

I also contacted the Brooklyn Museum (originally the Brooklyn Institute of Arts & Sciences) to inquire if they had any information regarding Flint or any Flint photographs in their holdings. Tara Cuthbert, Archives Assistant in the Library and Archives Department at the Brooklyn Museum, kindly photocopied the pages within the Brooklyn Institute of Arts & Sciences yearbooks from 1901-1914, which included exhibition and committee information pertaining to Flint.

I referred to publications on Pictorialism in order to better understand Flint's role as an amateur photographer. I also examined a selection of Pictorial photographs from the holdings at George Eastman House to better train my eye for critical analysis and comparison in terms of style, inspiration and technical skill. With the aid of Joe Struble, Assistant Archivist at George Eastman House, I examined the works of Gertrude Käsebier, for her choice of family subject matter, Clarence H. White, for his close involvement with the Brooklyn Institute of Arts & Sciences, and Paul Anderson, a former student of Clarence H. White, who also exhibited with Flint and used a similar method of photographic printing.

The last fragment of research was conducted to establish a connection between Flint and the prominent Pictorialist photographer and teacher, Clarence H. White. This research was driven by a hand-written inscription found on the back of one of the photographs reading, "Arthur H. Flint by

⁸ Frank R. Fraprie and F.C. Beach, eds. *American Photography*, (Boston: American Photographic Publishing Company, 1912), 6:366.
⁹ Please refer to the exhibition list on pages 50-51.

Clarence White?" which suggests that the photograph may have been taken by White.¹⁰ If this information could be confirmed, it would greatly increase the collection's significance. I contacted Verna P. Curtis, Curator of Photography from the Prints and Photographs Division at the Library of Congress, in regards to their extensive Clarence H. White holdings. I also attempted to contact Lucinda Barnes who wrote *A Collective Vision: Clarence H. White and His Students*, but she did not reply.¹¹ This area of research will be discussed further in the Arthur H. Flint Biography.

In terms of the execution for this applied project, most of my experience has been gained through the Photographic Preservation and Collections Management joint program at Ryerson University and George Eastman House, as well as through practical experience with photographic collections. I also utilized the expertise of George Eastman House staff including the Director of the Advanced Residency Program in Conservation Grant Romer, Assistant Archivist Joe Struble, Museum Registrar Wataru Okada, Photo Process Historian Mark Osterman, Curator of Photographs Alison Nordström, Library Director Rachel Stuhlman and Chie Ito, a Fellow in the Advanced Residency Program in Photograph Conservation.

The books I found most helpful were *Photographs: Archival Care and Management* by Mary Lynn Ritzenthaler and Diane Vogt-O'Connor,¹² *Care and Identification of Nineteenth-Century Photographic Prints* by James M. Reilly,¹³ and *A Guide to the Preventive Conservation of Photograph Collections* by Bertrand Lavedrine.¹⁴ I found these publications to be extremely useful, concise and conducive to my method of execution.

¹⁰ Refer to page 13 for further information regarding the photograph *Arthur H. Flint*, attributed to Clarence H. White, ca 1908.

¹¹ Lucinda Barnes, *A Collective Vision: Clarence H. White and his students* (Long Beach, California, State University, University Art Museum, 1985).

¹² Mary L. Ritzenthaler and Diane Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006).

¹³ James Reilly, *Care and Identification of 19th Century Prints* (Rochester, NY: Eastman Kodak Company, 1986).

¹⁴ Bertrand Lavedrine, *A Guide to the Preventive Conservation of Photograph Collections* (Los Angeles: Getty Publications, 2003).

THE AMATEUR PICTORIAL PHOTOGRAPHER

As Alison Nordström, Curator of Photographs at George Eastman House, explains “photographic Pictorialism was simultaneously a movement, a philosophy, an aesthetic and a style...that arose in opposition to the introduction of the dry-plate process” which made photography available to the masses.¹⁵ Serious photographers distinguished themselves from the new popular mass amateur by creating Pictorial photographs that required both technical and artistic skill in the form of unique hand-developed platinum, gum bichromate and carbon prints. These photographs were further manipulated to look more like charcoal or pastel drawings, utilizing filters, textured printing papers and darkroom manipulation, thus separating Pictorialist works from the everyday snapshot. According to Peter Bunnell, author of *The Art of Pictorial Photography*, “the artist amateur, educated and employed usually in a business or a profession, was knowledgeable about art and photographic practice, and economically situated to afford the expense of serious photography. But most importantly, the artist amateur was interested in the intellectual and emotional interactions between peoples that is at the heart of artistic expression.”¹⁶

Furthermore, serious amateur photographers fueled the acceptance of photography as an art form. Pictorialists are known as the first fully international group of advocates and practitioners of photographic art, contributing to publications, organizations, exhibitions and competitions, thus establishing photography as an accepted medium for artistic expression. Much attention was given to the activities of photographic societies and amateur clubs, which helped shape the market and develop pictorial aesthetics.

Peter Bunnell would describe Arthur Flint (1864-1943) as an “aesthetically motivated serious artist amateur,” active in photography from 1900-1914, in the heart of New York City – one of the

¹⁵ Alison Nordström and David Wooters, *Crafting the Art of the Photograph in TruthBeauty: Pictorialism and the Photograph as Art, 1845-1945*, (Vancouver: Douglas & McIntyre, 2008), 33.

¹⁶ Peter Bunnell, *The Art of Pictorial Photography* (JSTOR: Record of the Art Museum, Princeton University, 51:1992), <http://www.jstor.org/pss/3774688> (accessed June 6, 2008).

first US cities to embrace the European Pictorial movement.¹⁷ During these years, Flint was a member of the Department of Photography at the Brooklyn Institute of Arts & Sciences and was involved in at least 22 exhibitions, exhibiting amongst well-known Pictorialists including Frederick Evans, Clarence H. White, George Seeley, Alfred Stieglitz, Alvin Langdon Coburn, Heinrich Kühn, F. Holland Day, Baron Adolf de Meyer, Robert Demachy, Edward Steichen and Gertrude Käsebier.¹⁸

Employed as an art instructor, Flint was equipped with the skill for artistic expression and excelled in Pictorial aesthetic through composition, subject matter and tone. Flint produced mostly platinum prints, a process that allows the photographer to greatly control and manipulate the final print. Furthermore, the print can be altered in tone by changing the temperature, composition of the developer or by immersing the print in a solution of uranium nitrate or gold chloride. Tones vary from red, purple, blue, green, brown, black to gray, although a silvery gray is most common. This artistic control of the final print may have been why Flint concentrated on the platinum process.

¹⁷ Peter Bunnell, *The Art of Pictorial Photography* (JSTOR: Record of the Art Museum, Princeton University, 51:1992)

¹⁸ <http://www.jstor.org/pss/3774688> (accessed June 6, 2008).

Refer to pages 82-86 for a list of exhibition catalogues.

ARTHUR H. FLINT BIOGRAPHY



1. *Arthur H. Flint*, attributed to Clarence H. White, platinum print, ca. 1908 (cropped)

Arthur H. Flint was born in Lowell, Massachusetts on March 16, 1864. Arthur's father, Joseph K. Flint married Huldah Wilder from Waitsfield, Vermont on May 30, 1847. The couple moved to Lowell, Massachusetts to raise a family of seven: Lydia Viola (eldest born; died in infancy), Joseph (referred to by his middle name, Almy), Ella, Frederick, Ida, Asa, and the youngest, Arthur H. Flint.



2, 3. Arthur's parents, Joseph King Flint and Huldah Wilder Flint, ca.1887

Arthur's father, Joseph King Flint, was employed as an expert pattern maker in Lowell, Massachusetts. Four of the six Flint children spent most of their lives working in their hometown. Almy became an artist, Ella died at a young age (late-teens to early twenties), Ida was an instructor of needlecraft in the city schools, and Asa became the treasurer of the Institution of Savings in Lowell. Frederick became the president of the National Bank of Minneapolis and Arthur moved to New

Hampshire to teach.¹⁹ Arthur Flint's parents spent the rest of their days in Lowell, Massachusetts. His father passed away in 1893 and his mother Huldah followed in 1894.²⁰



4, 5. Arthur Flint and his roommate Boyd painting in the studio, ca. 1900

Arthur Flint did not attend college or university, but rather followed in the footsteps of his father and older brother, pursuing artistic endeavors by becoming an art instructor. By the age of 21 Arthur retired from the Bombay City Social Education Committee in New Hampshire and moved to New York to work for the New York Department of Education. The Dover School Committee Annual Report stated, "Mr. Arthur H. Flint was employed during the summer term as instructor in this branch. His work was especially valuable and his decision not to return this school year was deeply regretted by all who were familiar with his success."²¹

Throughout his life, Arthur focused much of his time and effort to improve art education within the New York City school system. In 1891, Arthur H. Flint was employed as a drawing instructor at Commercial High School in Brooklyn, New York.²² In 1894, Flint was listed as one of the few teachers devoted to public schools and educational interests in an article written in the *Brooklyn Daily Eagle Almanac*.²³

¹⁹ William E. Connenlly, *A Standard History of Kansas and Kansans: Frederick Louis Flint* article (1918; transcribed by Cody Leal, student from USD 508, Baxter Springs, Kansas, 2000), <http://www.accessgenealogy.com/scripts/data/database/cgi?file=Data&report=SingleArticle&ArticleID=0023075> (accessed April 2, 2008).

²⁰ William E. Connenlly, *A Standard History of Kansas and Kansans: Frederick Louis Flint* (1918; transcribed by Cody Leal, student from USD 508, Baxter Springs, Kansas, 2000), <http://www.accessgenealogy.com/scripts/data/database/cgi?file=Data&report=SingleArticle&ArticleID=0023075> (accessed April 2, 2008).

²¹ Google™ Book Search, *Annual Report by Dover (N.H.) School Committee, Bombay City Social Education Committee, New York Department of Education, 1885*, <http://books.google.com/books?id=LBcTAAAAIAAJ&pg=RA5-PA54&dq=annual+report+arthur+flint> (accessed April 22, 2008).

²² -----Annual Report, College Entrance Examination Board, 1901, <http://books.google.com/books?id=BLEWAAAAIAAJ&pg=RA6-PA35&dq=annual+report+commerical+high+school+arthur+flint> (accessed April 22, 2008).

²³ Google™ Book Search, *Brooklyn Daily Eagle Almanac*, American Almanac Collection, 1886, <http://books.google.com/books?id=fMIWAAAAIAAJ&q=arthur+h+flint&dq=arthur+h+flint&pgis=1> (accessed April 22, 2008).

In 1895, Flint married Elizabeth Stowell (born February 10, 1864 in Staceyville, Iowa) and moved with her to 459 Macon Street, Brooklyn, NY. Their first daughter Huldah was born in 1896.²⁴ By this time, Flint was a member of the New York State Art Teacher's Association and in 1897, their second daughter, Dorothy joined the family.²⁵ It was in and around this time that Flint was the president and treasurer of the American Federation of Arts in Brooklyn, New York.²⁶ The family spent most of its time in New York City and may have spent their summers at a vacation home in Groton, New Hampshire.²⁷



6. Arthur Flint, ca. 1895



7. Elizabeth Stowell, ca. 1895



8. Arthur and Elizabeth Flint, ca. 1930

It appears that Flint became particularly interested in photography around the turn of the century. In 1901, Flint became a member of the Department of Photography at The Brooklyn Institute of Arts & Sciences (BIAS). That same year, Flint entered a photograph into the Eleventh Annual Exhibition at BIAS, and by 1902, Flint was on the Committee of Exhibitions and Prints, and acted as the chairman of the Committee in charge of Exhibition. Throughout his years Flint served on various committees within the Department of Photography at BIAS and exhibited Pictorial works in BIAS annual exhibitions from 1901-1914.

²⁴ Ancestry.com, 1900 United States Federal Census for the Flint household, http://search.ancestry.com/cgi-bin/sse.dll?rank=1&new=1&MSAV=1&...ROOT_CATEGORY&recid=43994729&recoff=1+2&db=1900usfedcen&indiv=1 (accessed April 2, 2008).

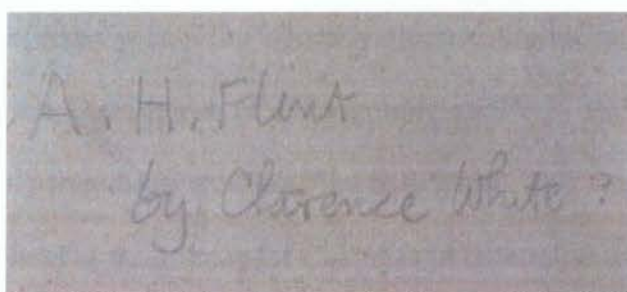
²⁵ The New York Times On-line Archive, *Teachers will discuss Art* (New York: The New York Times, February 25, 1896), http://query.nytimes.com/mem/archive-free/pdf?_r=2&res=9E0DE0DC143BEE33A25756C2A9649C94679ED7CF&oref=slogin&oref=slogin (accessed March 28, 2008).

²⁶ Google™ Book Search, *American Art Directory, 1903* (R.R. Bowker Company, American Federation of Arts), <http://books.google.com/books?id=S7OJ4ZrSQnwC&pg=PA267&dq=american+art+directory+1903+arthur+flint&lr=> (accessed June 3, 2008).

In 1909, Arthur and Elizabeth Flint's third child Lydia was born. In the same year, the *Annual Prospectus* article of 1909, published by the Department of Education at the Brooklyn Institute of Arts & Sciences, contained written association between Clarence H. White and Flint in regards to a photography course, stating: "For further information concerning this course (photography course), address Mr. Clarence H. White, Columbia University or Prof. Arthur H. Flint, Chairman of the Committee on Art Instruction in Photography, Beech Street, Forest Hills Gardens, Borough of Queens."²⁸ This piece of information is important because there is a photograph in the Flint collection that has been attributed to White.



9, 10. Recto and verso of *Arthur H. Flint*, attributed to Clarence White, ca. 1908



11. Detail of the inscription written in pencil on the verso of *Arthur H. Flint*

Throughout his years in photography, Flint was presented with many awards and honorable mentions. The *Society News* section which covered the *Twelfth Annual Exhibition of the Department of Photography at the Brooklyn Institute* in *American Amateur Photographer* (May 1902) states:

²⁸ Google™ Book Search, *Annual Prospectus, 1909, Department of Education, Brooklyn Institute of Arts & Sciences*, <http://books.google.com/books?lr=&id=jiATAAAIAAJ&dq=arthur+flint+and+clarence+white&q=arthur+flint+&pgis=1> (accessed April 22, 2008).

“Arthur H. Flint showed eight pictures, these of which, “Huldah,” “A Portrait,” and a winter scene with a quotation from Lowell as its title, deserve more than passing notice.”²⁹ Refer to Appendix D for a list of awards Flint received at the Brooklyn Institute of Arts & Sciences.



12. Mrs. A. H. Flint, baby Lydia, Huldah (L) and Dorothy (R), Arthur H. Flint, platinum print, 1909

In 1913, Flint transferred jobs from Commercial High School in Brooklyn to Richmond Hill High School in central-southern Queens and moved to 92 Beechnoll Rd., Forest Hills, Queens, New York.³⁰ It is important to note that Flint produced the majority of his work between 1908 and 1913, the same years Clarence H. White taught photography courses at BIAS. In 1914, White founded the Clarence H. White School of Photography in New York City and discontinued teaching at the Brooklyn Institute.³¹ In the same year, Flint abruptly stopped producing Pictorial photographs and resigned as a member of the Department of Photography at BIAS. Further research is needed to determine if there was ever a friendship between Flint and White. This would involve researching the Clarence H. White papers held at the Library of Congress to determine whether this photograph was taken during a class or during a private moment between Flint and White. It is also important to note that Flint did not receive any honorable mentions in the last two years of his membership at BIAS.³²

²⁹ John Nicol and F.C Beach, eds., *American Amateur Photographer*, (New York: American Photo Publishing Company, 1912), 14: 227.

³⁰ The New York Times On-line Archives, *Public School Teachers: Appointments, Transfers and Promotions by the Board* (New York: The New York Times, October 23, 1913), http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9504E5DF173DE633A25750C2A9669D946296D6CF&oref=slogin (accessed May 2, 2008).

³¹ The Palmer Museum of Art website, *Pictorialism into Modernism: The Clarence White School of Photography*, <http://www.psu.edu/dept/palmermuseum/past/pictorialism/pictorialism.html> (accessed April 4, 2008).

Flint exhibited eight pictures during this period leading one to speculate that this lack of recognition had a profound effect on his artistic production.

By 1917, Flint was an art instructor at the Boys High School of New York City, and by 1928, he had returned to Commercial High School as a drawing instructor.³³ As of 1930, Flint was listed as the director of a boy's camp in Forest Hills, New York.³⁴ Arthur's wife Elizabeth died on December 1, 1937 at the age of 73.³⁵ Flint spent the remainder of his life in Queens, New York and died at the age of 79 on September 10, 1943.³⁶

Two of Flint's daughters, Huldah and Lydia, never married and spent the remainder of their lives in New Hampshire.³⁷ Flint's middle child, Dorothy, married Melville Grieg in 1926.³⁸ The couple lived in Middletown, New York before moving to Toronto in 1940 when Melville was hired at Southam Press.³⁹



13. Huldah, 1910



14. Dorothy, ca. 1913



15. Lydia, 1911

³³ Google™ Book Search, *Annual Report of the City Superintendent of Schools to the Board of Education, New York*, <http://books.google.com/books?id=8rQWAAAAIAAJ&q=annual+report+of+the+city+superintendent+arthur+flint&dq=annual+report+of+the+city+superintendent+arthur+flint&pgis=1> (accessed May 2, 2008).

³⁴ Acestry.com, *1930 United States Federal Census: Arthur Flint*, http://search.ancestry.com/cgi-bin/sse.dll?rank=1&MSAV=1&---QT_CATEGORY&recid=74819217&recoff=1+2+3&db=1930usfedcen&indiv=1 (accessed April 22, 2008).

³⁵ Italian Genealogical Group: *NYC death index results*, <http://www.italiangen.org/NYCDdeathresults.asp?kind=exact&Esurname=Flint&Efirst=Elizabeth&StartYear=&EndYear=&County=Q&B1=Submit> (accessed May 23, 2008).

³⁶ <http://www.italiangen.org/NYCDdeathresults.asp?kind=exact&Esurname=Flint&Efirst=Arthur&StartYear=&EndYear=&County=Q&B1=Submit> (accessed May 23, 2008).

³⁷ Steven Evans, telephone conversation with author, June 2008.

³⁸ Ancestry.com, *1930 United States Federal Census: Dorothy Grieg*, http://search.ancestry.com/cgi-bin/sse.dll?rank=1&MSAV=1&---QT_CATEGORY&recid=74819217&recoff=1+2+3&db=1930usfedcen&indiv=1 (accessed April 22, 2008).



16. Huldah Flint, 1941



17. Dorothy Grieg, 1940



18. Lydia Flint, 1941



19. Rodger and Robert Grieg, 1933



20. Rodger Grieg and his mother, Dorothy, ca 1950



21. Robert Grieg, 1949

Dorothy and Melville had two children: Rodger Grieg, in 1928 and Robert Grieg in 1931.⁴⁰ According to the nephew who sold the Grieg home to its present owner, Robert Grieg was institutionalized later in life.⁴¹ Flint's grandson, Rodger, who like his grandfather became an art teacher, came to be the owner of the home in Picton, Ontario, where the collection was discovered in 2007.



22. Untitled [Arthur Flint with camera], gelatin silver print, ca. 1915, 9.5 x 6.5 (from album, 2007.1.7.7)

⁴¹

Steven Evans, telephone conversation with author, June 2008.

A Selection of Arthur H. Flint Photographs



23. Untitled, Arthur Flint, platinum print, ca. 1910, 45.8 x 38.4 cm (cropped)



24. *Commercial High School, Brooklyn*, Arthur Flint, platinum print, ca. 1913, 45.7 x 38.1 cm (cropped).



25. *Reflections (Bernice Frisbe)*, Arthur H. Flint, platinum print, ca. 1910, 45.8 x 38.1 cm (cropped)



26. Untitled, Arthur H. Flint, platinum print, ca. 1912, 46 x 38 cm (cropped)



27. *In The Museum*, Arthur H. Flint, platinum print, ca. 1911, 46 x 38.4 cm (cropped)



28. Untitled [Toil], Arthur H. Flint, platinum print, ca. 1906, 40.5 x 44 cm (cropped)



29. *Hearthstone, Groton, N.H.*, Arthur Flint, gum bichromate print, ca. 1907, 50.5 x 40.5 cm

STEP 1: EXAMINATION AND DOCUMENTATION



30. Collection in a box



31. Smaller objects in collection



32. Loose photographs in the collection

According to George Eastman House Archivist David Wooters, before starting any project, it is important to be aware of the collection's purpose, contents and use while being conscious of the resources available such as time, space, and money as these factors determine the way in which a collection will be preserved and made accessible.⁴²

My documentation involved four steps: (1) dusting the photographic object, (2) photographing the front and back of the object, (3) labeling each photographic object with an initial tracking number, and (4) filling out an identification record for the object. It is important to document the collection as soon as possible, in the order in which the objects come out of the box, to ensure no photographs are overlooked or misplaced.⁴³ According to Gerald J. Munoff in chapter 4 of *Archives and Manuscripts: Administration of Photographic Collections*, it is best to become familiar with the collection as opposed to prematurely imposing physical arrangement or conservation treatment.⁴⁴ When working with photographic objects, it is also important to make sure you are working in a clean, spacious and well-lit environment, using clean tools throughout each process.

DUSTING THE SURFACE OF A PHOTOGRAPHIC OBJECT

Before each object was photographed, the front and back of each photograph was dusted using an air bulb and a sable brush. This is done not only to remove debris that could scratch the print, but also to ensure that no debris will be photographed and mistaken as a flaw in the reproduced image. It

⁴² David Wooters, "Photographic Preservation" (lecture, George Eastman House, Rochester, NY, Fall 2007).

⁴³ Mary Lynn Ritzenthaler and Diane-Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006), 237-238.

⁴⁴ Gerald J. Munoff, Margery Long and Mary L. Ritzenthaler, *Archives & Manuscripts: Administration of Photographic Collections* (Chicago: Society of American Archivists, 1984), 80.

is best to remove debris with the air bulb first and then use a sable brush to remove remaining dust and fine particles. Make sure the brush is clean and free of debris. It is best to NOT dust the surface of a photograph if the emulsion is cracked or has edge frills as this could result in further damage.⁴⁵

PHOTOGRAPHING THE OBJECT

After the photographic object had been dusted, the front and back of each object was photographed using a 10.2 mega pixel camera (recorded at its highest resolution) and a copy stand. I photographed each album page rather than each photograph on each page to save time as well as to keep the pasted photographs within their context of the album pages.

INITIAL TRACKING NUMBER

Next, the object was given a tracking number. For example, the first object was labeled 1; the second object was labeled 2, and so on. This initial tracking number was lightly written on the lower left corner of the back of the photographic object, using a 2B pencil (soft lead) to ensure the physical order of the collection. Each loose photographic object (mounted or un-mounted) was given its own tracking number. I gave each album a tracking number and numbered the pages in order to record any loose or detached album pages and/or photographs. These initial tracking numbers will later be replaced with accession numbers.

INITIAL WRITTEN DOCUMENTATION

It is wise to create rules for recording the information of each object. This may depend on the size of the collection and the amount of time available to concentrate on a particular collection. Most institutions will have their own style manuals, which are specific guidelines to follow when documenting an object. Since I am working with a private collector who does not have a database management system and accompanying style guide, I have created a manual to follow. I chose to study the George Eastman House Object Module⁴⁶ and The Library of Congress Prints and

⁴⁵ Mary Lynn Ritzenthaler and Diane-Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006), 237-238.
⁴⁶ Del Zogg, *George Eastman House Cataloging Style Manual* (n.d.), revised by Laurie Soures and David Wooters, August 2007.

Photographs Online Catalog website at (<http://www.loc.gov/rr/print/catalog.html>) in order to determine my style guide standards. My initial fields are as follows:

Initial Tracking Number
Photographer
Title
Date
Process
Size
Description
Print Condition
Mount
Inscription
Notes

This written information was then transferred to a Microsoft Excel spreadsheet, using the same fields: *Initial Item Number, Photographer, Title, Date, Process, Size, Description, Print Condition, Mount and Notes* section and later transferred to a customized Filemaker Pro database. I decided against creating a condition-rating field as the collection was of a manageable size. A condition rating would categorize the physical condition of a photographic object as being in poor, fair, good or excellent physical condition. This system can pose problems because this type of rating system is subjective.

ANALYSIS OF THE COLLECTION

Once the collection had been examined and documented, I separated any objects that may harm the rest of the collection or those objects that could be damaged by the weight of other objects. There were two photographs (2007.1.3.7 and 2007.1.3.8) that appeared to have mold around the print edge.



33. Image of 2007.1.3.7, *Lydia*, Arthur H. Flint, ca. 1909



34. Detail of mold on upper left corner of 2007.1.3.7

As a preventative measure, these two prints were removed from the box and placed in a separate folder to prevent the spread of mold to the other objects (these two photographs were later treated by Chie Ito) and separation sheets replaced the objects that were removed from the box to maintain the order of the collection. A separation sheet is a piece of paper that describes the removed object as well as the new location of the object that has been removed (written in 2B pencil).⁴⁷ I also placed a flaking silver bromide photograph (2007.1.6.4) on the top of the pile to prevent further bromide loss.



35. Example of a separation sheet in place of the removed object

⁴⁷

Mary Lynn Ritzenthaler and Diane-Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006), 140-142.

Style Manual: Cataloguing Mr. Evans Collection

INITIAL TRACKING NUMBER:

As mentioned above, the *Initial Tracking Number* is the number written on the lower left corner on the back of a photographic object. This number is used to help keep track of the object should it be removed from its original order.

PHOTOGRAPHER:

The *Photographer* field is used to record the name of the person(s) associated with the object. Works by unknown photographers are entered as **Unknown**. The name of the photographer is written exactly as it is on the photographic object. If the name is spelled incorrectly, [sic] is used to show that there is a spelling error. I have chosen to use Photographer rather than artist or constituent as this collection belongs to a private photography collector.

Example: David Smith

Inscription: David Smithh [sic]

TITLE:

A single object may have multiple titles. George Eastman House assigns a Title Type to each title such as Title on Object, Published Title, Descriptive Title, Translated Title (from non-English), and Extended Title. The preferred Title Type is the title on the object. For my purposes, I have chosen to transcribe the title as it appears on the object. If there is no title on the object, I have written in a descriptive title in brackets in the *Title* field. Again, if there is a spelling mistake, [sic] is placed directly after the incorrect spelling.

Example: The frst [sic] day of Srping [sic]

DATE:

The *Date* field is used to record the most complete date available for the object. If an exact date is known, use the standard form of month, day, and year. I have entered the month (not its number).

Example: October 1994

Not 10/94

If the date is unknown, a circa (**ca.**) date is assigned using the best available information to establish this date. Circa dates are usually represented within the range of ten years. Through my research, I have tried to attach a date as close as possible to the date of creation. During the initial inventory, I used a question mark (?) so I could go back to these objects once I had researched the collection and had become familiar with the Flint family.

PROCESS:

George Eastman House uses Medium as a field as this museum deals with a wide variety of materials. I chose to label this field as *Process* since I am working with a photographic collection, which includes various photographic processes. During my initial inventory, if I were unsure of a process, I would enter a question mark (?) in the field so that I could determine the process in question at a later date.

SIZE:

Measurements are recorded in centimeters, to the nearest millimeter and height is preceded by width. Depth (thickness) follows width if applicable (for example, a large three dimensional object such as a photo album). George Eastman House uses measurements for framed and/or matted images; both the overall measurements and image measurements are recorded. For my purposes, I have measured the overall measurements as these are photographic objects and are treated as a whole (from the mount or photo edge). This also ensures the proper measurements are available when it comes time to create a housing budget plan. If the object has an irregular shape, the object is measured from the longest part of that shape. For example, if you were to measure an un-mounted oval shaped photograph, measure the longest height and width of the photograph. Be sure not to place the ruler or measuring tape directly on the photographic object but rather outside of the object. If you must measure on top of the object, place a clean piece of Mylar over the photograph to ensure that the print is not damaged.

DESCRIPTION:

The *Description* field is used to describe either the content of the photograph or its physical characteristics, particularly if the photograph has a non-descriptive title such as *Study* or *Untitled*. This field is especially useful in order to recall particular photographs within a collection.

PRINT CONDITION:

The *Print Condition* field is used to record the condition of the photographic print. Condition remarks such as crease, foxing, scratch, silver mirroring, abrasions and loss were used to describe such issues.



36. Foxing



37. Loss of corner



38. Loss of emulsion



39. Scratches



40. Silver mirroring

MOUNT:

I also included a *Mount* field to record the type of mount and its condition in the event that the photographs are to be removed from their mounts after conservation analysis.



41. Insect damage



42. Loss of frame



43. Discolored edges



44. Exposed glue



45. Print detached from mount

INSCRIPTION:

This field is used to record the inscriptions, notations, stamps and markings on the front (recto) or back (verso) of the photographic object. The location of the inscription is written first, followed by the transcription and the medium used for the inscription in brackets. If there is no inscription, I entered *No inscription* to ensure I did not overlook an inscription.

Example:

Inscribed on back: Lydia Flint [pencil]

NOTES:

The *Notes* field is used for relevant information that does not fit into any of the above fields. This area is a great space to write questions or make observations.

*Please note that the cataloguer would usually include their name in each catalogue record he or she has entered into the Filemaker Pro database. Since I am working with a private collector, I have chosen not to include my name in the Flint catalogue records.

STEP 2: ORGANIZATION, ARRANGEMENT AND ACCESSIONING

It is important to study and research the collection in order to determine the best arrangement possible. When working with photographs, the original order is often retained in intellectual arrangement rather than physical arrangement to ensure that photographic objects are stored using the best possible standards. Physical arrangement refers to the actual photographs that can be found, tracked and used while intellectual arrangement refers to conceptual groupings of related photographs, allowing researchers to easily find images that are of particular interest.

Provenance and original order are important to the arrangement of a collection. Original order not only tells researchers how the collection was organized but also provides clues about the collection's purpose and function. When imposing order on a collection with no apparent order, it is best to consider the content such as subject, date, people, and location, while at the same time anticipating the needs of the user. This process may involve further research. Since the collection was no longer in its original order (as found) when I received it, I was able to arrange the collection to utilize both physical and intellectual control. I chose to create a timeline and family tree to determine subjects and dates for those photographs that included little or no written information. The objects were physically separated into lots by process, type, and size to provide better preservation for the collection.

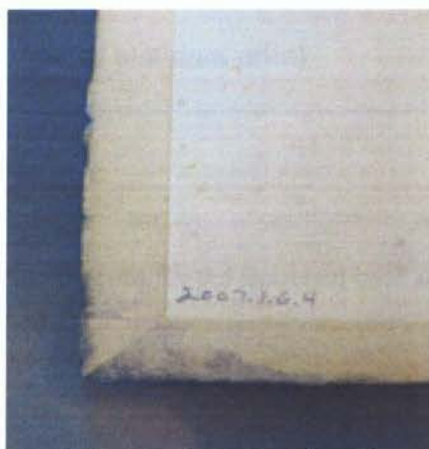


46. Group of platinum prints on 48 x 38 cm manila supports (lot 2007.1.2.1-16)

The Flint collection was divided into 13 groups as follows: 34 large platinum prints on Japanese style mounts (46 x 38 cm), 16 large platinum prints on thin manila supports (48 x 38 cm), 13 various sized platinum prints on varying mounts ranging from 17 x 15 cm to 40 x 44 cm in size, 3 large platinum prints (48 x 38 cm) and 1 large gum print (48 x 38 cm) re-mounted on archival board (re-mounted by Steven Evans), 4 various sized gum prints on varying mounts ranging from 15 x 16 cm to 30.5 x 40.5 cm, 4 various sized gelatin silver prints ranging from 26 x 24 cm to 40.5 x 30.5 cm, 2 framed gum prints and 1 framed platinum print, 38 family snapshots, and 5 family albums.

Once the collection was arranged into groups, I created a numbering system to uniquely identify each object within the collection. I erased the initial tracking numbers using a clean white eraser and wrote an accession number on the lower corner of the back of each photographic object using a 2B pencil. When developing an accessioning system, it is important to consider the type of control needed. For this collection's particular use, I decided to use a numbering system that included the year the collection was acquired; followed by the collection number (1st collection in the database), lot number (number assigned to a group with the collection) and sub lot number (individual number given to an object within a group). In total, there were 13 groups (lots) assigned to the Flint collection. Please note that due to the limited time spent with the collection, each album page was assigned an accession number rather than assigning each of the 597 photographs included within the albums.

Example: 2007.1.1.1 (year acquired.collection number.lot number.sub-lot number)



47. An example of an accession number written using a 2B pencil

TABLE 2: Lots Assigned to the Flint Collection

2007.1.1.1-34 (34 platinum prints on large Japanese mounts)
2007.1.2.1-16 (16 platinum prints on manila mounts)
2007.1.3.1-13 (13 platinum prints of varying sizes)
2007.1.4.1-4 (3 large remounted platinum prints and 1 large remounted gum print)
2007.1.5.1-4 (4 various sized gum prints)
2007.1.6.1-4 (4 various sized gelatin silver prints)
2007.1.7.1-75 (Album One. 73 album pages plus the front and back cover)
2007.1.8.1-14 (Album Two. 12 album pages; interior of the back; back cover –front cover missing)
2007.1.9.1-15 (Album Three. 13 album pages; interior of the back; back cover – front cover missing)
2007.1.10.1-52 (Album Four. 49 album pages; front cover; interior of the back cover; back cover)
2007.1.11.1-53 (Album Five. 51 album pages; front and back cover)
2007.1.12.1-3 (2 framed gum prints and 1 framed platinum print)
2007.1.13.1-38 (38 various family snapshots)

NOTE: I made a catalog record for the front and back of each album cover.

STEP 3: CATALOGUING AND DATABASE MANAGEMENT

Cataloging prevents people from browsing through boxes and folders, which could otherwise cause harm to the collection. Cataloging also keeps track of objects that are susceptible to theft and/or misfiling while drawing on connections within the collection. Descriptive cataloging builds on the work done during the documentation and arrangement process. Finding aids, catalogue records and other access tools allow the private collector (or staff/researcher) to easily search for, discover and locate items to study or reproduce. Access tools can supply missing information such as dates, names of photographers, places and subjects. Furthermore, searchable databases allow for the retrieval of object dimensions, making the housing process much easier.⁴⁸

I used FileMaker Pro (Version 9) Microsoft database software as requested by the private collector. FileMaker Pro is easy to use, equipped with searching tools, and allows the user to customize tables and upload images with ease. FileMaker Pro allows the user to search for photographic records by typing in a given field. Additionally, this data can be shared with others on a network or via web publishing.

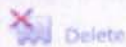
I customized the catalog record template to include: *Photographer, Title, Date, Process, Size, Description, Print Condition* and *Mount*. Filemaker Pro is equipped with general fields at the top, which are as follows: *Title, Name, Date, Artist, and Notes*. Accession numbers were entered in the *Name* field, the title of the collection was entered in the *Artist* field, and the date the record was created was entered in the main *Date* field, and the object inscriptions and personal notes were entered into the *Notes* field. In addition, a reproduction of the front and back of each loose photograph was included in each record. In total, there are 234 catalogue records included on the enclosed CD (to view these records, use Filemaker Pro Version 4 and up). Please turn the page to view an example of catalog record 2007.1.1.3.

⁴⁸

Mary Lynn Ritzenthler and Diane-Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006), 164-167.

Photo Catalog

View Last Import



2007.1.1.3

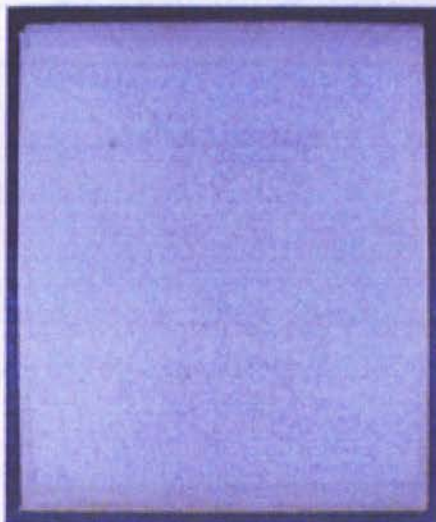
21/03/2008

2007.1.1.3

21/03/2008

Inscribed on back: "Mrs. A.H. Flint and Lydia" [pencil]

Arthur Flint Collection



Insert Picture

Export Picture

Photographer: Arthur Flint

Title: Mrs. A.H. Flint and Lydia

Date: ca. 1909

Process: Platinum

Size: 45.8 x 38 cm

Description: Mrs. Flint holding baby Lydia (medium shot)

Print Condition: Foxing, abrasions, discoloration (bottom)

Mount: Foxing, brittle corners with loss, back is dirty (graphite?)

48. Copy of catalogue record in Filemaker Pro (Version 9) for item 2007.1.1.3 of the Flint collection

STEP 4: CONSERVATION TREATMENT

There were two platinum photographs (2007.1.3.7 and 2007.1.3.8) within the Flint collection that appeared to have mold around the print edge. These two photographs were separated from the collection in order to prevent any active mold from spreading to other objects within the collection. Chie Ito, a Fellow in the Advanced Residency Program in Photograph Conservation at George Eastman House, volunteered to treat these photographs during the month of July 2008. Due to time constraints, item 2007.1.3.7 was fully treated using a variety of methods while 2007.1.3.8 was treated only for mold removal. The following is a summary of Chie Ito's extensive conservation treatment to item 2007.1.3; however, Chie Ito's extensive conservation report is included in Appendix H for reference.

CONSERVATION TREATMENT TO 2007.1.3.7:

1. **Reduction of mold** was performed using a soft brush and a vacuum cleaner fitted with a HEPA filter (in a fume cupboard).
2. **Reduction of residual adhesive** was performed after the matt was removed. A poultice of methyl cellulose was applied to the paper which in turn caused the adhesive to moisten and swell, making it easier to scrape this adhesive away using a micro scalpel.
3. **Surface cleaning** of the front of the print was cleaned using a soft brush. The back of the print was cleaned using grated Staedtler Mars® Plastic eraser (fine crumbs). The front and back of the matt was also cleaned using grated Staedtler Mars® Plastic eraser.
4. **Spot testing** was performed prior to aqueous treatment in which reagents of distilled water, ethanol and a mixture of both (1:1) were spot tested in a discrete area using a fine sable brush.
5. **Humidification** was performed for one hour in a Gore-Tex® humidity chamber. This was done by placing the Gore-Tex® sheet over 2 sheets of wet blotting papers in a tray covered with Plexiglas.
6. **Washing:** the front and back of the photograph was sprayed with distilled water and placed in a bath of distilled water (pH 7 with ammonium hydroxide 10 % v/v). During washing, the residual adhesive was further removed using a fine sable brush. The print was then dried.
7. **Light Bleaching** was performed to reduce discoloration and foxing. The print was once again humidified, sprayed and immersed in a washing bath under a light unit equipped with a metal halide lamp. The tray was covered with Plexiglas and included a small opening to ensure elimination of UV, heat and condensation. Light bleaching was performed 3 times for a total of 9 hours on the front and 4 hours on the back of the photograph. The print was air-dried each time for evaluation.

8. **Localized Bleaching** was then performed on the more noticeable foxing spots using a solution of hydrogen peroxide (1% v/v) and ammonium. This procedure was performed on a suction point to ensure the solution did not saturate the print. The print was again washed in distilled water to prevent future color reversion.

9. **Flattening**: the print was humidified in a Gore-Tex® chamber and placed between non-woven polyester and blotting papers and pressed in a nipping press.

10. **Structural repair** was then performed on three areas using the delaminated pieces and wheat starch paste.

11. **Loss compensation** was carried out to enhance the aesthetic appearance of the photograph. This was done by in painting the abraded areas using a mixture of watercolours and dry pigments and a fine brush.

12. **Matting**: the print was then re-matted in an archival quality window mat. The old matt was saved to ensure the objects' historical significance.



49. Close up of 2007.1.3.7 before treatment



50. Close up of 2007.1.3.7 after treatment

STEP 5: HOUSING PLAN

Photographs are complex chemical and physical structures that break down over time. Both the physical structure and chemical nature of a photographic object is susceptible to different kinds of damage such as acidic fumes, ozone, fluctuating temperatures, humidity, insects, mold, residual chemicals in the print or damage due to poor storage conditions and/or mishandling.⁴⁹

In order to provide long-term preservation and accessibility to the collection, it is necessary to address how the photographs will be housed. The first step in this process is to assess the collection and create a budget plan for the materials needed to house the collection. The materials selected should reflect the amount of available storage space while anticipating the future growth of the storage facility. Physically housing the collection also takes time depending on the type of housings needed. For instance, custom-made housings will be more time-consuming as opposed to purchasing ready-made archival materials. And of course, the budget will dictate the quality of archival materials that will be used to house a collection.⁵⁰

The way a photograph is housed will define how the object is used and handled. It is best to provide an object with a housing that limits physical handling. Equally, the materials chosen for housing objects should be carefully considered in relationship to the photographic object's process, condition, usefulness and size. Archivists must be able to identify the processes in the collection in order to determine the best possible housing standards and handling policies as certain photographic materials are inherently unstable due to their chemical composition and require particular storage environments and housing materials.⁵¹

Archivists prefer to preserve the original format of a photographic object for as long as possible in order to maintain the object's historical significance. If the photographic object must be removed from its original mount due to conservation and/or exhibition purposes, the original mount, case or album is

⁴⁹

Bertrand Lavedrine, *A Guide to the Preventive Conservation of Photograph Collections* (Los Angeles: Getty Publications, 2003), 1-7.

⁵⁰

Mary Lynn Ritzenthaler and Diane-Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006), 210-211.

⁵¹

Mary Lynn Ritzenthaler and Diane-Vogt-O'Connor, *Photographs: Archival Care and Management* (USA: IPC Print Services, 2006), 207-216.

preserved to maintain the original context of the photographic object. Archivists must be aware of the collection in terms of condition, relative value, context and potential use, before creating a housing plan, while considering their available resources. In this case, private collector, Mr. Evans is working with limited resources and the collection is to be housed at a later date.

OVERALL CONDITION OF THE COLLECTION

Since the collection was stored in a sealed house for almost 20 years, the majority of the collection has suffered environmental damage from temperature fluctuation and high humidity, which has caused the materials to weaken. This can be seen on the paper structures in the form of buckling, staining and foxing. When a print is washed improperly and kept in a humid environment, the image may fade, yellow, crack and develop foxing spots.⁵² The physical structure of a photographic object must also be taken into consideration as all materials eventually break down. Glass can deteriorate and break, metals can rust, paper can tear and film can shrink.⁵³ Due to the particular condition of the Flint collection, the majority of the loose photographic objects will be re-matted using archival materials, as their current acidic supports will continue to cause damage to the photographs. The original supports will be kept (separate from photographs).



51. Front and back of a tintype (2007.1.13.1)



52. Detail of the top right corner of 2007.1.13.1 with sharp edge

Tintypes were often placed in cases or thin paper folders. Today, tintypes are often found loose and many are bent due to their thin iron base. Tintypes can also be easily scratched when unprotected

⁵² Foxing is a term used to describe age-related reddish-brown spots. The causes of foxing are not well understood but are usually considered as fungal growth on the paper or the oxidation of iron, copper or other metals present in the pulp or rag from which the paper is made; high humidity is also considered a contributing factor.

⁵³ Bertrand Lavedrine (translated by Sharon Grevet), *A Guide to the Preventive Conservation of Photograph Collections* (Los Angeles: Getty Publications, 2003), 7-16.

and can damage other prints as most tintypes have sharp edges. Do not try to flatten a tintype as the emulsion can lift and crack.



53. Example of platinum transfer (from another collection)

A platinum image can transfer to other surfaces as it becomes acidic through autocatalytic hydrolysis, leaving a “ghost image” as shown above.⁵⁴ Here, the platinum print has transferred to a piece of tissue paper over the years within this book.



54. Silver mirroring

Gelatin silver prints can have silver mirroring, which occurs when the silver in the print becomes detached from the filaments and migrates to the surface. Air pollution and moisture oxidize some of the silver that forms the image and the silver ions migrate to the surface of the gelatin. When these ions come in contact with the atmosphere, they are transformed into metallic silver and silver sulfide.

Please note that the lots have been divided according to size, process and subject matter. The items are to be housed with like objects (same process) as this ensures there is no cross-contamination

⁵⁴ Conserve O Gram: *Caring for Photographs: Special Monochrome Processes*,
<http://www.nps.gov/history/museum/publications/conservoogram/14-07.pdf> (accessed April 26, 2008).

of materials that may off-gas as they degrade. Furthermore, these photographs will be stacked largest to smallest (with the largest prints at the bottom of the box) to prevent further damage from uneven weight distribution.

It is recommended that the loose photographs be housed accordingly in CARMAC L Sleeves (unless, otherwise stated). L Sleeves are archival polyester envelopes that are sealed on two sides and allows for easy insertion and removal of photographic objects. These objects do not need to be removed from the envelope for viewing, as the sleeves are transparent and the static charge clings to enclosed materials, protecting the object from both debris and shifting.⁵⁵



55. Example of L sleeve



56. Example of L sleeve and buffered tissue paper

The front of the platinum prints are to be covered with translucent lightweight buffered tissue paper. This is recommended as platinum images tend to transfer to other materials that they come in contact with and the alkaline reserve in the buffered tissue paper allows for extra protection for other materials the print will come in contact with.⁵⁶

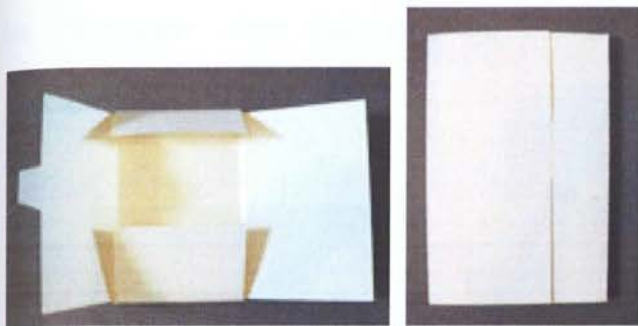
Photographs that have flaking emulsion (such as tintypes or the above bromide print) or photographs that have loose pieces can be placed in archival paper enclosures.

⁵⁵

Carr McLean Archival Preservation and Conservation Supplies Magazine, 2008.

⁵⁶

Grant Romer (Director of the Advanced Residency Program in Photograph Conservation, George Eastman House) in discussion with the author, February 2008.



57, 58. Example of a paper enclosure (opened and closed)



59, 60. Bromide coming away from the surface (2007.1.6.4)

There are a few photographic objects that will require a secondary support (matt board), to ensure the print does not crack or bend when handled and/or stored. For example, there are two platinum prints that contain a layer of wax (2007.1.2.2 and 2007.1.2.8). These photographs should have a secondary support to ensure no further wax creases are made.



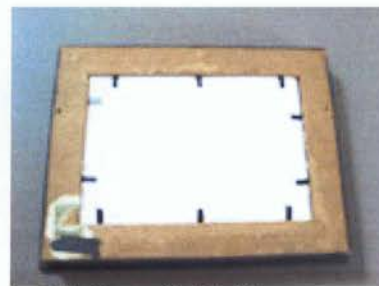
61, 62. Wax creasing and flaking from surface (2007.1.2.2)



63. Back of frame with wood



64. Acidic wood backing



65. New archival backing

There are three prints in the collection (2007.1.12.1-3) that are encased in wooden frames. These wooden backing boards (rigid board that is placed behind the matted print to hold it firmly in place) should be replaced with archival matt board (non-acidic) to prevent the acidic wood from damaging the enclosed prints.⁵⁷ These framed prints should also be stored vertically to ensure that if the glass breaks down or shatters, the prints will remain unharmed. I have chosen to house these framed prints

⁵⁷

Laurence E. Keffe Jr./Dennis Inch, *The Life of a Photograph*, Chapter 9: Wood Frames (Boston: Focal Press, 1984), 145-148.

in a Hollinger Glass Slide Negative Storage box to ensure they are stored vertically and well protected.⁵⁸



66. Hollinger box



67. Hollinger Glass Slide Negative Storage Boxes.⁵⁹



68. Album wrapped in tissue paper

The albums will be placed in Hollinger boxes to allow for easy retrieval. Each album can be wrapped in buffered tissue paper and rolled tissue paper can rest between each box edge to ensure the album is snug.

It is important to estimate the amount of space needed for the storage of the collection once it has been housed. If fully housed, the Flint collection will require approximately 61 ½" (L) x 17" (W) and 9" (H) of storage space if stacked in three piles.

Once a collection has been properly housed, it is best to place a list of the items in the box and label the outside of the box with the collection name, photographer and contents (lot; accession numbers).



69. Example of a completed collection from another project stored in Hollinger boxes with labels

The grand total, based on the Carr McLean Archival Preservation and Conservation Supplies 2008 price listings, totaled \$638 (excluding taxes and shipping charges). Refer to Appendix G for the housing plan and Appendix H for the price list.

CONCLUSION

The Arthur H. Flint photographic collection offered a wide variety of preservation issues and the opportunity to work closely with a private collector. Mr. Evans has acquired additional Flint photographs and ephemera that are to be added to the collection at a later date. He has asked me to process the newly acquired items and house the Flint collection in the near future once funds become available for the continuation of this project. I have included a few reproductions from the recent items, which have not been accessioned (scanned by Mr. Evans), which further illuminate the life of Flint.

Please note that I have not included the name of the person from whom Steven Evans obtained the Flint collection nor discussed the storage facility in which Mr. Evans' photographic collection is held, for these are private matters and must be respected. I am grateful to have had the opportunity to work with Steven Evans and look forward to working with him in the future. His knowledge, excitement and fascination for the medium offered much encouragement throughout this project.

Lastly, the Flint collection allowed me the opportunity to utilize the skills gained throughout my years in the Photographic Preservation and Collections Management Masters program. I hope that this applied project and accompanying thesis report will aid in the methodology of preserving and making accessible photographic collections not only for private holdings but also for museums, libraries and archives.

APPENDIX A: SAFE HANDLING INSTRUCTIONS FOR PHOTOGRAPHIC OBJECTS

1. Do not bring food or drinks into the workroom.
2. Please make sure your hands are clean. It is best to wash them before entering the workspace to ensure no stains or residue (from the oils in your hands or hand lotion) transfers on to the objects you will be handling.
3. Keep a clean workstation that has a wide area of space. Only bring with you what you need. Bags should remain in a separate area.
5. Wear gloves when handling photographs (including those in plastic sleeves). If you are handling an album, it is best not to use gloves, as there is a greater chance of damage to brittle pages and worn, flaking leather.
6. You are only permitted to use a pencil when recording information. Do not use a mechanical pencil.
7. Do not drag objects over other objects or surfaces as this may cause damage. This includes pieces of clothing, a staff badge, long necklaces, etc.
8. Make sure none of the objects are hanging over the edge of the table.
9. Do not lean on the objects or attempt to flatten any objects.
10. It is okay to stack photographs as long as you do not exceed a height where they can topple over. Please keep objects in the correct order.
11. Do not take objects out of their see-through plastic sleeves or sealed housings unless otherwise necessary.
12. It is best to keep objects supported. Look at objects on the table. They have a greater chance of falling when in your hands.
13. Treat each object as you would a delicate newborn baby. Take your time. Gently remove objects from their housing - whether it is a box, a folder or a custom-built housing. Remember - these are precious objects - treat them as such.

APPENDIX B: DESCRIPTION OF PHOTOGRAPHIC PROCESSES

Albumen Print: A positive printing process invented in the 1850's by L. D. Blanquart-Evrard in which a contact print is made on paper coated with a solution of egg white (albumen) and salt, sensitized with silver nitrate and exposed to light.

Contact Print: A contact print, always the same size as the negative from which it was made, is produced by placing the negative in direct contact with the paper rather than projecting the image onto the paper through an enlarger. Contact prints have extraordinarily high resolution, that is, sharpness of detail.

Color Coupler Print: A positive print made from a color negative, involving at least three emulsion layers of silver salts sensitized to one of three colors- red, green, or blue. Unlike a dye-destruction print, the dyes are not contained within each layer prior to exposure, but are made during development by adding dye couplers, which join the silver particles to produce dyes. The result is a full color positive image formed of the three emulsion layers against a white background. This process may also be known as Ektacolor print, chromogenic color print, or Type-C print.

Cyanotype: Sir John Herschel invented the Cyanotype process in 1840. Cyanotype is a printing process based on the light sensitivity of iron salts. Cyanotypes are considered to be one of the most stable and long-lasting prints.

Gelatin Silver Print: The standard, black-and-white photograph printed on paper coated with gelatin and emulsions containing light sensitive silver halides/salts.

Gum-Bichromate Print: A print made by exposing a negative on a paper coated with an emulsion of gum arabic, potassium bichromate and pigment. Similar to the carbon process, the emulsion hardens in relation to the amount of light it receives through exposure, and the unexposed emulsion is washed away.

Platinum/Palladium Print: A printing process in which images are formed in platinum or palladium by placing a negative on paper sensitized, either by hand or pre-coated, with a solution of platinum or palladium and iron salts, exposed to light, and then developed in Potassium oxalate. Platinum/Palladium prints are thought to be more permanent than silver prints and allow for a very large tonal scale (numerous tones of gray).

Tintype process: method of creating direct positive images with dark enameled metal plates as a base. Also known as the ferrotype process.⁶⁰

⁶⁰

Icebox website, *A Glossary of Photographic Terms*, <http://www.iceboxminnesota.com/phototerms.html> (accessed July 20, 2008).

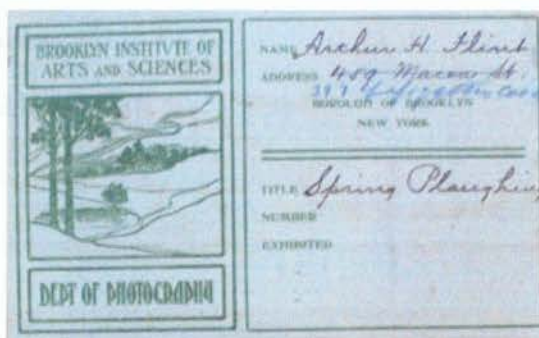
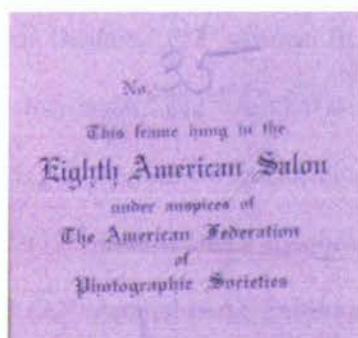
APPENDIX C: ARTHUR H. FLINT EXHIBITION LIST

- 1901 Eleventh Annual Exhibition: Brooklyn Institute of Arts & Sciences.
April 20 to May 4, 1901. No titles given.
- 1902 Twelfth Annual Exhibition: Brooklyn Institute of Arts & Sciences.
April 19 to May 26, 1902. No titles given.
- 1902 Albright Art Gallery, Buffalo. March 5 - 22, 1902.
- 1903 Thirteenth Annual Exhibition: Brooklyn Institute of Arts & Sciences.
April 18 to May 25, 1903. No title given.
- 1904 Fourteenth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 23-30, 1905.
Exhibited *The Crest of the Wave, Flower Study; Sketch* (honorable mention for all).
- 1905 Fifteenth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 29- May 6, 1905.
Exhibited *Launching the Seine Boat* (Honorable mention).
Flint was on the Executive Committee on Rooms and Appliances.
- 1906 Sixteenth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 30 to May 5, 1906.
Exhibited *Toil* (Honorable Mention).
Part of the Executive Committee on Rooms and Appliances.
- 1907 Seventeenth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 29 to May 4, 1907. Exhibited *Spring Ploughing* (Best individual picture, First award) and no title given – honorable mention.
- 1908 Eighteenth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 27 – May 2, 1908.
Exhibited *Study* (honorable mention).
Flint on the Executive Committee on Rooms and Appliances.
- 1908 Internationale Tentoonstelling van Foto-Kunst Salon, August 1-30, 1908.
Exhibited *When Morning Gilds the Skies, Our Faithful Friends, For the Early Morning Market* and *Spring Ploughing*.



70, 71. Internationale Tentoonstelling van Foto-Kunst Salon and Amateur-Fotografen-Vereeniging, Amsterdam. Exhibition stickers

- 1908 Worchester Art Museum: Fifth Annual Exhibition of Photographs. October 30 to November 30, 1908. Exhibited Labor and Elm Tree.
- 1908 The National Arts Club: Special Exhibition of Contemporary Art. January 4 – 25, 1908.
- 1909 Nineteenth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 26 to May 1, 1909. No title given.
- 1909 National Arts Club. International Exhibition: Pictorial Photography. February 2 to 20, 1909. New York City. Exhibited *Elm Trees*.
- 1909 Internationale Photographische, Ausstellung, Dresden. May to October, 1909. *Unsere treuen Freunde* (Our Faithful Friends).
- 1910 Twentieth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 23 to May 7, 1910. No title given.
- 1911 Twenty-first Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 23 to May 6, 1911. Exhibited *Light and Dark*, *Lydia*, *Sleepy-Time Stories*, *Reflections*, *In The Museum* and *A Family Group* (all honorable mentions). Flint a part of the Executive committee.
- 1912 Twenty-second Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 20 to May 4, 1912. Exhibited *Luncheon*, *Study*, *My Lady Disdain*, *The Picture Book*, *Study*, *Study*, and *Study* (all honorable mentions).
- 1912 Art Institute of Chicago: Eighth American Photographic Salon. May 1912. Exhibited *Spring Plowing*, *Our Faithful Friends*.



72, 73. Eighth American Salon and The Brooklyn Institute of Arts & Sciences exhibition stickers

- 1913 Twenty-third Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 19-30, 1913. Exhibited *Baby*, *The Demonstration*, *Study*, *Feathers*.
- 1914 Twenty-fourth Annual Exhibition: Brooklyn Institute of Arts & Sciences. April 25 to May 2, 1914. Exhibited *Grandma's Picture*, *Early Morning Call* and *The White Rose*.

APPENDIX D: AWARDS FLINT RECEIVED AT BIAS

"The Crest of the Wave," Marines section, honorable mention (14th Annual BIAS Exhibition, 1904)

"Flower Study," Flowers section, honorable mention (14th Annual BIAS Exhibition, 1904)

"Sketch," Portraits section, honorable mention (14th Annual BIAS Exhibition, 1904)

"Launching a Seine Boat," Genre section, honorable mention (15th Annual BIAS Exhibition, 1905)

"Toil," Figure studies section, honorable mention (16th Annual BIAS Exhibition, 1906)

"Spring Ploughing," Best Individual Picture, First Award (17th Annual BIAS Exhibition, 1907)

"A Study," honorable mention (17th Annual BIAS Exhibition, 1907)

"Light and Dark," honorable mention (21st Annual BIAS Exhibition, 1911)

"Lydia," honorable mention (21st Annual BIAS Exhibition, 1911)

"Sleepy-Time Stories," honorable mention (21st Annual BIAS Exhibition, 1911)

"Reflections," honorable mention (21st Annual BIAS Exhibition, 1911)

"In the Museum," honorable mention (21st Annual BIAS Exhibition, 1911)

"A Family Group," honorable mention (21st Annual BIAS Exhibition, 1911)

"Luncheon," honorable mention (22nd Annual BIAS Exhibition, 1912)

"Study," (22nd Annual BIAS Exhibition, 1912)

"My Lady Disdain," (22nd Annual BIAS Exhibition, 1912)

"The Picture Book," (22nd Annual BIAS Exhibition, 1912)

"Study," (22nd Annual BIAS Exhibition, 1912)

"Study," (22nd Annual BIAS Exhibition, 1912)

"Study," (22nd Annual BIAS Exhibition, 1912)

APPENDIX E: ARTHUR H. FLINT TIMELINE

March 16, 1864 – Arthur H. Flint born in Lowell, Massachusetts

1885 – Resigns from his teaching position at the Dover School Committee, Bombay City Social Education Committee in New Hampshire. (Annual Report- page 54)

1886 – Moves to New York City, NY and is hired by the New York Department of Education (on the school board).

1891 – Employed as a drawing instructor at Commercial High School in Brooklyn, NY (works here until 1913 and returns around 1928).

1893 – Arthur Flint's father, Joseph K. Flint, dies

1894 – Arthur Flint's mother, Huldah Wilder Flint dies

1895 – Marries Elizabeth Stowell (born February 10, 1864 in Stacyville, Iowa)

1896 – Huldah W Flint born

1896 – Listed as a member of the New York State Art Teacher's Association

1897 – Dorothy B Flint born

1900 – living at 459 Macon Street in Brooklyn (Ward 23), Kings, New York. Lives with Elizabeth, Huldah, Dorothy, Jesse E. Flint (son of Fredrick and Genovefa Flint) and border Elizabeth Johnston (US 1900 Census)

1901 – Becomes a member of the Department of Photography at the Brooklyn Institute of Arts & Sciences

1902 – On the Committee of Exhibitions and Prints and Chairman on the Committee in charge of Exhibition.

1902 – Flint presents Mechanical Drawing in High Schools at the New York Board of Education meeting and exhibits pupils' works

1906 – Part of the Executive Committee on Rooms and Appliances

1906 – A drawing instructor at Commercial High School, NY

1909 – Lydia F. Flint born, 397 living at Lafayette Ave, Brooklyn, NY

1910 – Flint family residing in Groton, Grafton, New Hampshire. Aged 46. Living with Elizabeth, Huldah, Dorothy, Lydia and Marie L. Johnson (a boarder). This could have been a summer home (home Huldah and Lydia grew old in)

1910 – Resides in Groton, New Hampshire

1913 – Transfers from Commercial High School in Brooklyn, NY to Richmond High School in central-southern Queens, NY

1914 – Retires as a member of the Department of Photography at the Brooklyn Institute of Arts & Sciences

1925 – Flint's middle daughter, Dorothy, marries Melville Grieg

1928 – Is once again a drawing instructor at Commercial High School, Brooklyn Borough, NY (from Educational Review, page 292 by Nicholas Murray Butler)

1928 – Flint's first grandson, Rodger C. Grieg is born (Dorothy's son)

1930 – Living in Queens, New York. Aged 66. Living with Elizabeth (66), Huldah (33) and Lydia (21) – single daughters. Address: 92 Beechknoll Rd., Forest Hills, Owen County, NY. Arthur's occupation: Director of a Boy's Camp, Huldah works at American Telephone + Telegraph (US Census)

1930 – Director of a Boy's Camp in Forest Hills, NY (Forest Hills Inc.?)

1930 – Port of departure on April 6th to Villefranch, France and Genoa, Italy from New York. Ship name: Roma. Passport #: 144828 Wash. 26.11.1929

1931 – Flint's second grandson, Robert William Grieg (Dorothy's son) born

1937 – Flint's wife, Elizabeth, dies December 1, 1937 at the age of 73

1943 – Arthur Flint dies on September 10, 1943 at the age of 79

APPENDIX F: FLINT/GRIEG FAMILY AND FRIENDS

FLINT

Arthur H. Flint (born March 16, 1864 in Middlesex, Massachusetts; died in Queens, New York on September 10, 1943). Resided at 397 Lafayette Ave Brooklyn, NY and 459 Macon St, Brooklyn, NY; 92 Beechnoll Rd, Forest Hills, NY.

Mother - Huldah Wilder Flint (born 1826 in Waitsfield, Vermont; died in 1894 in Lowell, Massachusetts).

Father – Joseph King Flint (born 1817 in Francistown, New Hampshire; died in 1893 in Lowell, Massachusetts).

Wife – Elizabeth Stowell Flint, born February 10, 1864 in Staceyville, Iowa; died in Queens, NY on December 1, 1937. Married to Arthur, mother of Huldah, Dorothy and Lydia.

Daughter – Huldah W. Flint (born 1896 in New York; died ?). Never married.

Daughter – Dorothy B. Flint (born 1897 in New York, died ?). “Dot” became a nurse in Toronto and married Melville Grieg in 1926 at the age of 28.

Daughter – Lydia F. Flint (born in 1909; died ?). Never married.

Sister – Lydia Viola Flint (born?; died in infancy).

Brother – Almy J. Flint (born 1877 in Lowell, Massachusetts; died ?). An artist.

Sister – Ella L. Flint (born in 1875; died ?). Passed away at a young age (lived past 17). Could be Gertrude and Bernice Frisbe’s mother.

Brother – Frederick L. Flint (born 1877; died ?). Married Miss Genovefa Edwards in 1878.

Sister – Ida J. Flint (born 1879; died ?). Needlecraft instructor in city schools of Lowell, Massachusetts.

Brother – Asa W. Flint (born 1881; died ?). Treasurer of the Institution of Savings of Lowell, Massachusetts.

GRIEG FAMILY

Melville M. Grieg (born 1900). Married Dorothy Flint at the age of 26 in 1926. Stationed at Long Branch, Ontario, September 1918, RAF # 272277. Married Dorothy Flint in 1926.

Melville’s parents – Grandma Dorothy Grieg (born January 29th, 1870; died ?) and Grandpa Grieg (dates unknown).

Melville’s brother – William (Billy) Grieg (born?; died ?). Stationed in Fredericton, NB, April 1918.

Melville's brother – Roderick Douglas Grieg (born 1895; killed Sept 29, 1917 in action WWI, France, aged 22).

Melville's sister – Marjorie Grieg (birth ?; died ?).

Melville's sister – Dorothy Grieg (born ?; died ?) Became Dorothy Grieg Wheeler when she married Bill Wheeler. An officer candidate (Oct. 1944).

Melville's son – Roger Grieg (born in Middletown, NY 1928; died ?). Graduated from University of Toronto on June 9, 1950. Took the Flint collection to Picton, Ontario, Canada.

Melville's son – Robert William Grieg (born in Middletown, NY 1931; died ?).

LIST OF FLINT AND/OR GRIEG FAMILY AND FRIENDS INCLUDED IN ALBUMS

Uncle Jim

Uncle Dan and Aunt Jessie

Angus Grieg (b. July 11, 1897; died ?)

Wickliffe and Jean

Harold

Gertrude Frisbe – Flint's niece and Bernice's older sister

Bernice Frisbe – Flint's niece and Gertrude's younger sister

Mr. and Mrs. Robert Farrington

Garnet (or Garnel?) and Claire Dainard

Arthur W. Dianard and Aunt Jennie

Albert and Mary Dianard and their boys

Wilford Whattau

P.W. Rettie Stephen (wounded)

Ella Maym

Ilda Bush

Marguerite Brown

Bea Meigs

Eleen Whyte

Marry McCleod

Bob Smith

Old Harrich

Angus and Cicely

Elizabeth

Leslie

Jane

Drucilla

Norman and Hilda Rice

Liz

Lou

Edith

NOTE: The largest album 2007.1.7.1-75 is not all in order. It appears the album 2007.1.7.1-75 and 2007.1.11.1-53 are the albums of Dorothy (Flint) and Melville Grieg. The other three albums consist of the Grieg family.

APPENDIX G: HOUSING PLAN (PER LOT)

LOT 2007.1.1.1-34

ITEMS: 34 platinum prints on large Japanese mounts

SIZE: 46 x 38 cm (thick board)

HOUSING: 34 16 x 20" L Sleeves; 1 ½ x 16 x 20" box

LOT 2007.1.2.1-16

ITEMS: 16 platinum prints on thin manila mounts

SIZE: 46 x 38 cm (thin board)

HOUSING: sixteen 16 x 20" L Sleeves; ½ of a 16 x 20" box

LOT 2007.1.3.1-13

ITEMS: 13 platinum prints

SIZE: ranging from 17 x 15 cm - 40 x 44 cm

HOUSING: one 5 x 7", one 8 x 10", one 11x14, ten 16 x 20" L sleeves; 1 secondary support

NOTE: One item (2007.1.3.2) is un-mounted.

LOT 2007.1.4.1-4

ITEMS: 3 re-mounted platinum prints and 1 re-mounted gum print

SIZE: 50.5 x 40.5 cm

HOUSING: four 16 x 20" L Sleeves

NOTE: These prints were re-mounted by the collector and have been stored separately to prevent the new mounts from coming in contact with debris from the old mounts.

LOT 2007.1.5.1-4

ITEMS: 4 gum prints

SIZE: ranging from 15 x 16 cm - 40.5 x 30.5 cm

HOUSING: One 5 x 7" L Sleeve, one 11x14" L Sleeve and two 16x20" L sleeves.

LOT 2007.1.6.1-4

ITEMS: 4 silver prints

SIZE: 26 x 24 cm - 40.5 x 30.5 cm

HOUSING: three 11 x 14" and one 16 x 20" L Sleeves, 1 secondary support

NOTE: There is one bromide silver print (2007.11.6.4) where the bromide has bubbled and flaked; will require a secondary support and placed at the top of the pile to prevent further cracking.

LOT 2007.1.7.1 75

ITEM: Album (album one)

SIZE: 23 x 33 x 3 cm (73 pages and front and back cover)

HOUSING: 1 ½" x 15" x 11 ½" Hollinger box

LOT 2007.1.8.1-14

ITEM: album (album two)

SIZE: 20 x 14 x 1 cm (12 pages and front and back cover)

HOUSING: Will share a 3" x 10 ½" x 8 ½" Hollinger box with LOT 2007.1.9.1-15.

(housing plan continued)

LOT 2007.1.9.1-15

ITEM: album (album three)

SIZE: 20 x 14 x 1 cm (13 pages and front and back cover)

HOUSING: Will share a 3" x 10 ½" x 8 ½" Hollinger box with LOT 2007.1.8.1-14.

LOT 2007.1.10.1-52

ITEM: album (album four)

SIZE: 15 x 18.5 x 1.5 cm (49 album pages; front and back cover; inside detail)

HOUSING: 1 ½" x 10 ½" x 8 ½" Hollinger box

LOT 2007.1.11.1-53

ITEM: album (album five)

SIZE: 16 x 20 x 2.5cm (51 pages and front and back cover)

HOUSING: 1 ½" x 10 ½" x 8 ½" Hollinger box

LOT 2007.1.12.1-3

ITEMS: 3 framed gum prints

SIZE: ranging from 17 x 22 cm - 26.5 x 16.5 cm

HOUSING: One Hollinger Glass Slide Negative Storage box (four slots, stores vertically)
8 ½" x 6" x 5 ¾"

LOT 2007.1.13.1-38 (38 small family snapshots)

ITEMS: family snapshots - various processes

SIZE: ranging from 7 x 6 cm - 22 x 15.5 cm

HOUSING – twenty-five 4 x 5", seven 5 x 7" and six 8 x 10" L Sleeves

APPENDIX H: PRICING LIST FOR PROPOSED HOUSING MATERIALS

CARMAC 4 x 5" L Sleeves = 25
(pack of 10 x 3 = 30 at \$12.50)
Total = \$37.50

CARMAC 5x7" L Sleeves = 9
(pack of 10 = \$15.60)
Total = \$15.60

CARMAC 8x10" L Sleeves = 7
(pack of 10 = \$19.70)
Total = \$19.70

CARMAC 11 ¼ x 14 ¼" L Sleeves = 5
(pack of 10 at \$23.30)
Total = \$23.30

CARMAC 16 ¼ x 20 ½" L Sleeves = 66 sleeves
(pack of 10 at 5+ is \$40.85)
Total = \$285.95

Hollinger Drop-front Print Boxes:

Three 3 x 20 ½ x 16 ½" boxes (at \$24.20 each) = \$72.60
One 1 ½ x 20 ½ x 16 ½ "boxes (at \$18.70 each) = \$18.70
One 1 ½ x 15 x 11 ½" box = \$13.85 (for large album)
One 3 x 10 ½ x 8 ½" box = \$11.95 (2 small albums in one box)
Two 1 ½ x 10 ½ x 8 ½" boxes (10.50 each x 2) = \$21

Hollinger Tissue Paper (interleaving)
20 x 30" at 100 sheets per package
Total = \$46.90

Millennium Clamshell Style box
(family snapshots)
3 x 12 ¼ x 10 ¼"
Total = \$ 10.35

One Hollinger Glass Slide Negative Storage Box
(with compartments for the three framed images at 8 ¾ x 11 ½ x 6")
Total = \$29.95

Acid free paper to wrap delicate objects in four flap enclosures
Total = \$30

GRAND TOTAL = approximately \$638

APPENDIX I:

Conservation Report for 2007.1.3.7 and 2007.1.3.8

By: Chie Ito

A Fellow in the Advanced Residency Program in Photograph Conservation
George Eastman House
Rochester, NY

Supervised by Taina Meller, Associate Conservator

EXAMINATION AND TREATMENT RECORD

ACCESSION NO.:	2007.1.3.7
PHOTOGRAPHER:	Arthur Flint
TITLE/SUBJECT:	Lydia Flint
DATE:	Unknown
OWNER:	Steven Evans
PROCESS:	Platinum print
SUPPORT:	Off white western wove paper Print is attached to a non archival window mat with an unknown adhesive
DIMENSIONS:	Primary support: 21.3 cm x 16.5 cm (H x W) Image (window opening): 19 cm x 13.3 cm (H x W) Secondary support (window mat): 40.6 cm x 30.6 cm (H x W)
CONSERVATOR:	Chie Ito
DATE OF REPORT:	July 24, 2008

DESCRIPTIONS

Print

- The print is a cool color, platinum print of the infant Lydia Flint, sitting in a highchair with her head turned to the right (viewer's left).

Supports

- The primary support is an off white, smooth, wove, western, medium weight paper. Four edges are trimmed straight.
- The secondary support is a non-archival quality window mat, faced with a smooth cream color paper and poor quality core exhibiting a sign of degradation (orange discoloration of the core).
- There is no back mat present.

Inscription

Verso of the mat:

- At the top center, there is an inscription, "Lydia Flint", written in graphite.
- In the bottom left corner, there is an accession number "2004.1.3.7" written in graphite.
- Four graphite registration lines for cutting the window opening are present.

CONDITION REPORT

The print is attached to the verso of the window mat along the window opening. It appears that all the corners and centers of each edge, except for the left edge, have been adhered using an unknown adhesive.

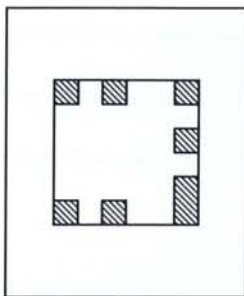


Fig 1: Diagram of verso,
showing approximate location of the primary support adhered to the secondary support.

PRIMARY SUPPORT

Recto:

Mold

- There is pronounced mold with haypae on the print along the window opening. The mold appears to be inactive, as it looks powdery under a microscope x 250.⁶¹ The presence of mold suggests that in the past the print may have had been stored in an environment of high relative humidity⁶² and temperature.⁶³
- The presence of mold suggests that the primary support might be acidic.

Foxing

- There is a vertical band of moderate foxing⁶⁴ approximately 3 cm from the left edge of the window opening. The top right, bottom right and highlight areas also show moderate foxing. The foxing is light orange and has irregular shaped haloes. Some of them have a dark center and some of them do not. This suggests that two types of foxing may be present, one iron related and the other not.⁶⁵

Surface dirt

- There is overall light surface dirt. Along the window opening, there is moderate surface dirt.

Unknown spots

- There are unknown spots on the proper left side of the sitter's skirt. It is probably intrinsic to the image, produced during processing.

Planar distortion

- The print shows overall planar distortion caused by the partial detachment from the window mat.

Verso:

Surface dirt

- Minor surface dirt is seen overall.

Foxing

- There is scattered moderate foxing overall. The foxing is light orange with scalped haloes. The location of much of the foxing is associated with the foxing and mold seen on the recto.

Local discoloration

- There is minor orange local discoloration, around the perimeter 0.5 cm to 1.7 cm from the support's edge. It is appeared to coincide with the opening of the window mat. This local discoloration suggests that hydrolysis and oxidation of cellulose has occurred, accelerated by the acid migration from the poor quality core of the mat.

⁶¹ When mold is active, it is damp and smears when brushed. [Guild, S. and MacDonald, M. *Mould Prevention and Collection Recovery: Guidelines for Heritage Collections*. Technical Bulletin No.26. Canadian Conservation Institute: Ottawa, 2004. p.4]

⁶² The germination of mold requires a minimum amount of water. The moisture available in a substrate is called water activity (a_w) expressed as a fraction of 1. Water activity is equivalent to the equilibrium relative humidity (ERH) of air adjacent to the material or within a mold's spore. For instance, ERH 90% indicates an a_w of 0.9. The majority of mold starts grow a_w 0.75.

⁶³ Most molds grow at a temperature of 4°C to 30°C (39°F to 86°F).

⁶⁴ A descriptive term for scattered spots reddish-brown in color.

⁶⁵ The cause of foxing is not fully understood. However, it is believed that it involves fungal activity, metal particle inclusions (mainly iron) in the paper, or a combination of both.

SECONDARY SUPPORT: WINDOW MAT

Recto:

Surface dirt

- There is overall minor surface dirt. A moderate amount of surface dirt is on the rebate of the window opening.

Discoloration

- The facing paper shows overall minor discoloration, particularly along the top edge.

Abrasion

- All the corners are abraded, and the delaminated facing paper shows the core of the mat.

Foxing

- Scattered minor orange foxing is apparent on the mat.

Verso:

Surface dirt

- There is overall minor surface dirt.

Discoloration

- The facing paper shows overall minor discoloration.
- There are squares of minor local discoloration, measuring 5.5 cm x 1.5 cm (left) and 5.5 cm x 1.5 cm (right), on each side of the print located approximately 19 cm from the support's top edge.

Abrasion

- The top left and bottom right corners have delaminated facing paper. Other corners also have been abraded.

Adhesive residue

- There is an adhesive residue at the top right, located 4.7cm from the support's top edge, which may be the adhesive used for adhering the print.

Fingerprints

- There is a fingerprint near the top left corner of the print.

TECHNICAL EXAMINATION

- Technical examination was undertaken to gain understanding of the materials and prints' condition as well as to record the progress of the treatment.
- The photography was carried out with a Nikon 2D Digital SLR camera with long wave ultraviolet (UVA) lamps⁶⁶.
- Kodak 2E filter was placed in front of a camera's lens.



Fig 2: Before treatment, recto, UV fluorescence photography

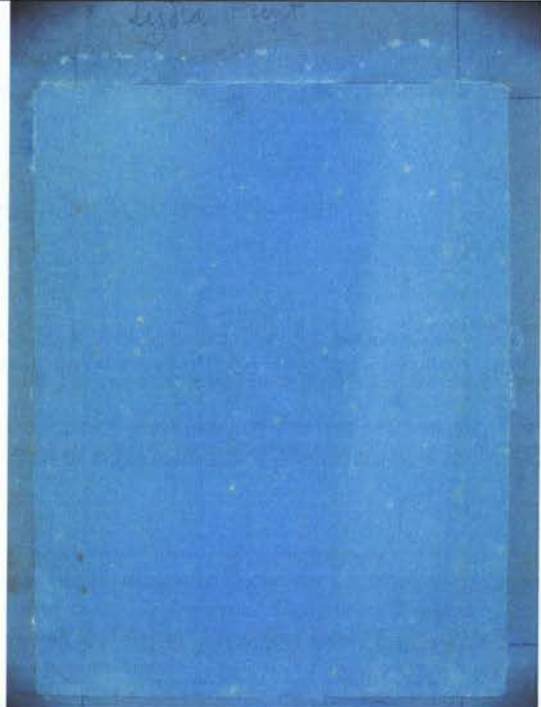


Fig 3: Before treatment, verso, UV fluorescence photography

⁶⁶ UV radiation has three regions, depending on the wavelength. 320 nm to 400 nm is long wave UV (UVA); 280 nm to 320 nm is middlewave UV (UVB); and 180 nm to 280 nm is shortwave UV (UVC). In conservation, UVA and UVC are commonly used.

	<i>Ultraviolet fluorescence photography (UVA) Observation</i>	<i>Inference</i>
Foxing (recto)	Minor orange fluorescent.	Foxing could be bull's-eye type.
Mold (recto)	Minor orange fluorescent.	Mold damage.
Recto	Image strong absorption. Minor orange fluorescent observed where it was invisible under reflected light.	Absorption indicates metal-based image. Foxing is present overall, which is not visible to the eyes.
Foxing (verso)	Minor orange fluorescent. Some of the foxing shows dark center with orange haloes.	Foxing could be bull's-eyes type. Darker center may indicate presence of metal particles.
Adhesive (verso)	Light lemon yellow fluorescent along the edges.	Lemon yellow fluorescent may be animal based adhesive.
Verso	Different reflectance/fluorescence band observed on the left.	Unknown

TREATMENT PROPOSAL

Treatment goal

To stabilize the condition and improve the aesthetic appearance.

Photo documentation

Photo documentation will be carried out before, during and after treatment to record the condition.

Micro chemical testing

Any reagents such as water; ethanol etc will be tested on a discreet area to ensure sensitivity and safe use of the reagents. The result of testing may affect the choice of solvents as well as the proposed treatment methods.

Reduction of mold

The mold will be removed using a vacuum cleaner fitted with a HEPA filter. The mold will be dislodged with a soft brush, directing it toward a vacuum nozzle held closely to the print. Mini cleaning tools, such as a mini soft brush, which are equipped to the HEPA filtered vacuum cleaner, may also be employed over a fine cleaning screen. The operation will be carried out in a fume hood.

Removal from the mat

In order to proceed with the treatment, it is necessary to remove the print from the mat.

Options:

Mechanical removal

As the adhesive appears to be brittle, mechanical removal using a thin spatula may be successful. The mat will be placed verso side up with weights on it to keep it flat. The spatula can then be inserted between the print and the mat to separate them.

Mechanical removal will likely result in skinning of the facing paper of the verso of the mat. However, it is priority to remove the print without damaging it. In addition, introduction of moisture is not preferred due to possible inactive mold presence between the mat and the print.

Gore-Tex® marination technique

Layers of small damp blotting papers will be placed over Gore-Tex®, which is laid over smooth-side down on the verso of the print where the adhesive was applied. The open pore structure of Gore-Tex® will allow moisture to pass through from damp blotting papers and help to soften the adhesive. After the adhesive becomes soft, a thin spatula will help to remove the print.

Ultra-sonic humidifier

A local humidification using an ultra-sonic humidifier could be employed on the adhesive areas of the verso of the print. The surrounding areas will be covered with Mylar⁶⁷ to protect them from the moisture produced from the ultra-sonic humidifier. After the adhesive become soft, a thin spatula will help to remove the print.

Poultice

A poultice can be applied to slowly introduce moisture. Methyl cellulose could be applied over a thin non-woven polyester, Hollytex®, to soften the adhesive. After the adhesive become soft, a thin spatula will help to remove the print.

Reduction of residual adhesive

The condition of the print will be assessed after removal from the mat. If necessary, and remaining residual adhesive will be removed from the recto of the print as well as the verso of the mat.

The choice of materials will depend on the condition as well as type of the adhesive. Local humidification, poultice, and solvents may be employed to help remove the residual adhesive from the surface.

Surface cleaning

After removal from the mat, the print and the mat will be surface cleaned with a soft brush. Grated Staedtler® Mars® Plastic erasers⁶⁸ will also be used to clean. If necessary, the image will be cleaned under a microscope with a great caution to further reduce the mold.

Washing

In order to reduce foxing, acidity and discoloration, it is recommended that the print be washed in distilled water manipulated to approximately pH 7 to 8 with ammonium hydroxide or other salts such as calcium hydroxide. Alkaline water will facilitate the reduction of acidity as well as the discoloration.

Prior to washing, the print will be humidified in a Gore-Tex® chamber,⁶⁹ followed by spraying a mixture of distilled water and ethanol (50:50) as well as distilled water.

Washing technique options

Screen washing

The print will be rested on a fine mesh of screen, which is placed in a distilled water bath as described above.

Immersion

The print will be submerged in a distilled water bath as described above.

Bleaching

After air-drying, it will probably be necessary to carry out bleaching to further reduce the foxing.

Light bleaching

Bleaching will be carried out on the recto and the verso. The print will be immersed in distilled water manipulated to a pH around 7. The tray in which the print is immersed in washing bath will be illuminated by a light unit equipped with metal halide lamps.⁷⁰ The tray will be covered with Plexiglas with a small opening to ensure the elimination of UV as well as to avoid building up heat and condensation. The pH and the temperature of the water will be monitored all the time during the light bleaching process.

The progress of bleaching will be evaluated, and bleaching will be repeated until it reaches a satisfactory level without giving an unnatural appearance. During each bleaching session, the print will be thoroughly rinsed and air-dried. Prior to bleaching, the print will be humidified in a Gore-Tex® chamber, followed by spraying a mixture of distilled water and ethanol (50:50) as well as distilled water.

Other chemical reagents

Other chemical bleaching reagents such as hydrogen peroxide (1-3% v/v) or sodium borohydride (less than 1% w/v) may be considered if necessary after the evaluation of the results of light bleaching.

⁶⁷ An archival quality uncoated clear polyester film.

⁶⁸ Staedtler® Mars® Plastic eraser is composed of polyvinyl chloride, fillers and plasticizer.

⁶⁹ A Gore-Tex® chamber is created with layers of wet blotting papers under a sheet of Gore-Tex® in a tray covered with a sheet of Plexiglas.

⁷⁰ General Electric Multi-Vapor Metal Halide Bulbs. The light bleaching will be carried out using HF Sunburst 250W MH AgroSun Gold Deluxe System with Sunrise Reflector Hanging Systems.

Rinsing (alkaline wash)

After bleaching, the print will be washed in distilled water to thoroughly rinse out any chemical residue. To combat future oxidation, the washing water will be manipulated to slightly alkaline using ammonium hydroxide or other salts such as calcium hydroxide.

Resize

If necessary, after the cycle of washing, bleaching and rinsing, the print will be resized using a thin solution of methyl cellulose to replace a weakened sizing of the primary support.

Humidification and flattening

The print will be humidified overall in a Gore-Tex® chamber. It will be placed between sheets of thin Hollytex® and blotting paper, and pressed under a sheet of glass and heavy weights.

Matting

Museum quality window mat and back mat⁷¹

The current window mat to which the print has been attached, is chemically unstable and a source of degradation. Therefore, for the longevity of the print and to provide a secure and chemically sound supporting system, it is recommended that the print be matted in a museum quality (100% cotton, un-buffered, 4 ply thickness, PAT test passed) window and back mats using triangular sleeves of paper for mounting. Window and back mats will be attached together along the top or left edges using gummed linen tape. Because of the inscription on the verso and its historical significance, the original window mat will be kept with the print.

Original window mat and new back matt

If its historical significance is emphasized, the print could be matted in a museum quality (100% cotton, un-buffered, 4 ply thickness, PAT test passed) back mats using triangular sleeves of paper for mounting with an original window mat. The back and the original window mat would be attached together to provide good supporting system. To isolate the print from the chemically unstable window mat, an isolating layer, such as Mylar® or Phototex paper would be necessary.

TREATMENT REPORT

Mold removal

Mold removal was carried out using a vacuum cleaner fitted with a HEPA filter (3M HEPA Vacuum and 99.97% efficiency at 0.3 micron filter) in a fume cupboard. In order to control suction, a variable voltage power stat was connected to the vacuum cleaner to work under 20kV, which is gentle but strong enough. A plastic pipette was cut to a 45-degree angle and inserted to the end of the hose nozzle to be able to work in small area. The mold on the print was dislodged with a soft brush, directing it toward the end of the pipette held closely to the print. The bevel of the window mat was cleaned using the 45-degree angle pipette along the surface. The mold was successfully removed from both the print and the window mat bevel.

⁷¹ Institute of Conservation. "Guidelines for Conservation Mounting & Framing of Works of Art on Paper". [online] Available at: <http://www.conservationregister.com/guidancemountingframing.asp> Accessed: May 29, 2008. American Institute for Conservation of Historic and Artistic Works. "Matting and Framing". [Online] Available at: <http://aic.stanford.edu/library/online/brochures/mattingandframing.pdf> Accessed: May 29, 2008.

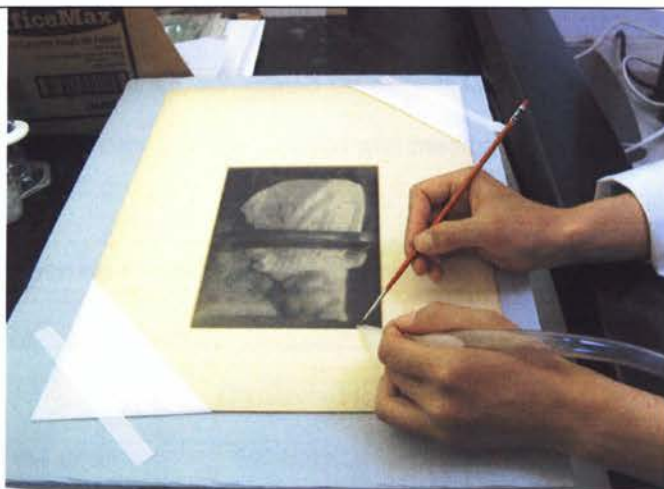


Fig 4: Mold removal using a sable brush. The print was secured to the rigid support.

Removal from the mat

The print was placed verso side up on the blotting paper and secured with weights. Several techniques were employed to help swell the adhesive in order to remove the print from the mat.

The Gore-Tex® marination technique using layers of small damp blotting papers placed over Gore-Tex® was found to swell adhesive a little but this technique was time consuming.

Local humidification using an ultra-sonic humidifier was also employed to help swell the adhesive along with the Gore-Tex® marination technique. Prior to this, the surrounding areas of the mat were covered with Mylar® to protect it from moisture produced by the ultra-sonic humidifier.

After the adhesive began to swell, a thin spatula was inserted between the print and the mat to separate them. Even though both techniques were used, the swelling of the adhesive was minor. It was thought that the thickness and sizing of the primary support and the degradation of the adhesive resulted in less swelling, which made it difficult to remove the print without minor skinning the surface of the print at the top left corner and the bottom center. Therefore, it was decided to pare away the verso of the mat in order to avoid further skinning of the print. The areas underneath the adhesive (see Fig. 1) were thinned down carefully using a micro spatula until the print came off from the mat.

Additional condition of the print

There was no mold on the edges of the print where they were concealed by the mat.

There was distinct localized discoloration along the window opening where the bevel of the window opening had been in contact with the print. This was possibly caused by acid migration from the poor quality core of the window mat.

Reduction of the residual adhesive

After the removal from the mat, the facing paper and the core of the mat were left attached to the recto of the print. A poultice of methyl cellulose (Methyl Cellulose A4C)⁷² or Laponite RD⁷³ applied to these papers moistened and swelled the residual adhesive and enabled its removal by scraping with a micro scalpel.

There were some areas without any paper from the mat. On these areas, the residual adhesive was thick crystal and some were in a thin layer firmly attached to the print. The mechanical removal with a micro scalpel appeared to disturb the surface of the print. Therefore, warm water was applied with a fine brush until the adhesive swelled. The swollen adhesive was removed with a micro scalpel. Cotton swabs were also gently rolled over to absorb the adhesive. Methyl cellulose poultices were also employed depending on the size of the crystallized adhesive to help it swell. The swollen adhesive was removed with the same method. The swollen adhesive was tenacious and gray in color, which may suggest that it was wheat starch or mixed with another adhesive.

The residual adhesive was reduced as much as possible. Although a large amount of the residual adhesive was successfully removed, the areas appear shiny due to the change in refractive index.

⁷² Obtained from the Dow Chemical Company

⁷³ Laponite RD is synthetic inert clay in the form of a fine white powder, which swells to produce a clear colourless thixotropic gel when dispersed in water. Available from Conservation Resources Intl. LLC.

Surface cleaning

The verso of the print was surface cleaned with grated Staedtler® Mars® Plastic eraser (fine crumbs)⁷⁴. The recto was cleaned with a soft brush.

The recto and the verso of the mat were surface cleaned with medium size crumbs of grated Staedtler® Mars® Plastic eraser.

Spot testing

Prior to aqueous treatment, following reagents were tested with a fine sable brush.

Table 1: Result of spot testing

Locations	Results		
	Distilled water	Distilled water: ethanol (1:1)	Ethanol
Highlight: Far left corner of the table and the skirt	No change	No change	No change
D-Max area: bottom right corner	No change	No change	No change
Mid tone: bottom center of the skirt	No change	No change	No change

Washing

Prior to washing, the print was humidified overall in a Gore-Tex® humidity chamber, which was created with the Gore-Tex® sheet over 2 sheets of wet blotting papers in a tray covered with a Plexiglas. The print was humidified for 1 hour until the fibers became relaxed (Temperature 71.8 °F ~ 72 °F, RH 54% to 83%). Followed by the humidification, distilled water was sprayed over the verso and then the recto.

The print was then immersed in a bath of distilled water manipulated to approximately pH 7 with ammonium hydroxide 10% v/v⁷⁵. During washing, the residual adhesive was further reduced by brushing it gently with a fine sable brush.

The print was washed for 1 hour and 15 minutes (Temperature 19 °C ~ 21 °C). The print was air dried after washing.

After drying, the print's condition was assessed. The paper strength was increased. Surface dirt might have been further removed since the washing water revealed some debris. Overall discoloration was reduced; on the other hand, localized discoloration and foxing did not appear to be reduced.

Bleaching

Light bleaching

To reduce discoloration and foxing, it was decided to carry out light bleaching.

Prior to bleaching, the print was humidified in a Gore-Tex® chamber, followed by spraying distilled water over the verso and the recto.

The print was immersed in distilled water. The tray in which the print was immersed in the washing bath was illuminated by a light unit equipped with a metal halide lamp. The tray was covered with a Plexiglas with a small opening to ensure the elimination of UV as well as to avoid building up heat and condensation. The temperature of the water was monitored at all times during the light bleaching process. The wash water was changed frequently. After light bleaching, the print was thoroughly rinsed in distilled water and air-dried.

The progress of bleaching was evaluated on the recto and the verso after drying, and process was repeated 3 times.

During the third session, the light unit was lowered to approximately 40 cm from the print. In order to keep the temperature of the water cool, the wash bath tray was placed in another tray, which contained iced water.

⁷⁴ Grated eraser crumbs are available from William Minter, Bookbinding & Conservation, Inc. Woodbury, PA 16695.
wminter@pennswoods.net

⁷⁵ Ammonium hydroxide 10% v/v, obtained through LabChem Inc.

Table 2: Light bleaching

	<i>Humidification by Gore-Tex® chamber</i>	<i>Light bleaching: Recto</i>	<i>Light bleaching: Verso</i>	<i>Rinsing and drying</i>
1	1 hour Temp. 71 °F ~ 71.4 °F; RH 42% ~ 84%	3 hours Temp. 20 °C ~ 23 °C	1 hours Temp. 20 °C ~ 23 °C	20 minutes Air drying
2	45 minutes Temp. 72 °F; RH 38% ~ 78%	2 hours Temp. 21 °C ~ 23 °C	1 hours Temp. 21 °C ~ 23 °C	40 minutes Air drying
3	40 minutes Temp. 71.4 °F ~ 71.6°F; RH 40% ~ 70%	4 hours Temp. 18 °C ~ 22 °C	2 hours Temp. 21 °C ~ 23 °C	35 minutes Air drying

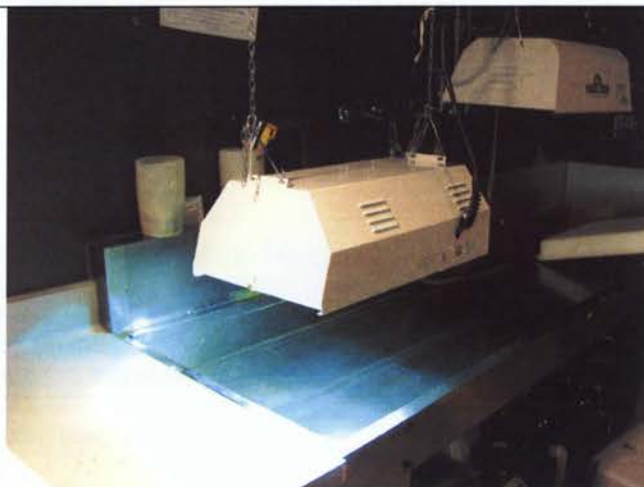


Fig 5: Light unit for light bleaching.
A tray covered with a Plexiglas was placed in a sink below the lamp.

Overall discoloration was reduced after light bleaching. The foxing did not disappear completely. It appears that the intensity of the foxing was reduced except for the large dark spots, which were still disturbing to the eye. Therefore, it was decided to carry out localized bleaching using a chemical bleaching reagent only on the most disturbing foxing spots on the recto in order to produce a uniform appearance. Overall chemical bleaching was not considered this point since the effects of bleaching reagents on platinum prints requires more research.

Localized bleaching

A solution of hydrogen peroxide 1 % (v/v) was made by diluting a 3% solution with distilled water. Ammonium hydroxide was added to the 1% v/v hydrogen peroxide solution to raise pH to approximately pH 7. Localized bleaching was carried out in conjunction with a use of a suction point. Most area of the suction point was masked off with Mylar® to expose only a small section to control the suction power in order to prevent the hydrogen peroxide expanding and also to prevent tidelines from forming. Whatman® paper was placed between the print and the suction point to prevent direct contact with the metal surface of the suction point. Working on a suction point, a 1% v/v hydrogen peroxide solution was applied locally on the intense foxing of the recto with a fine brush. The application was repeated until the intensity became similar to other foxing. The areas were air-dried each time to assess the effectiveness of hydrogen peroxide.

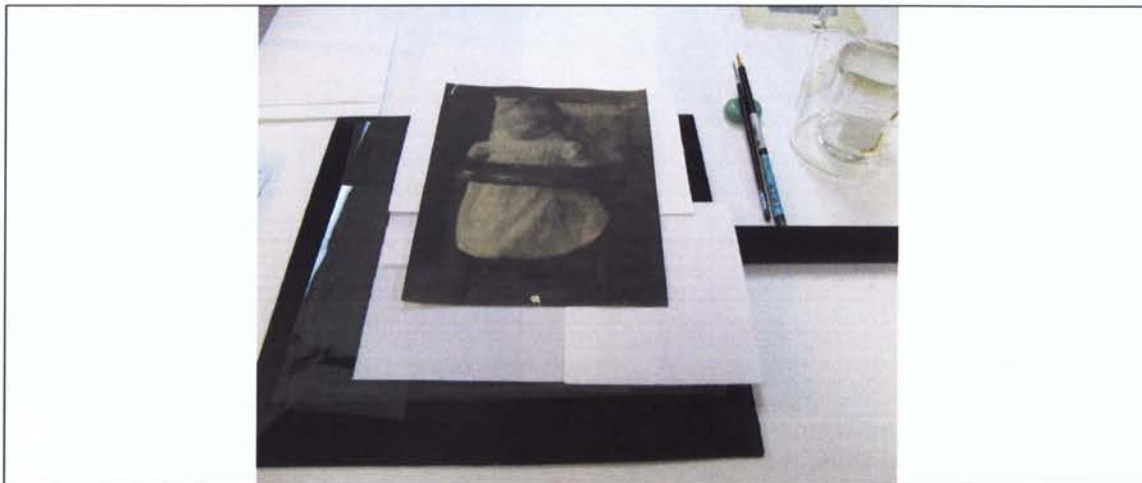


Fig 6: The print on a suction point.

A platform was created with a blotting paper and weights.
Underneath the print, Whatman® paper was placed to absorb chemical reagents.

To reduce the risk of color reversion in the future, the print was thoroughly washed overall in distilled water. The pH of wash water was manipulated using ammonium hydroxide. Alkaline salts such as calcium hydroxide were not added to the washing bath. This is because some studies suggest that the use of calcium hydroxide yields the risk of a white veil forming on the print due to the precipitation of salts on the surface.⁷⁶ It was thought that thorough washing would remove the residual bleaching agent.

Table 3: Washing after localized bleaching

Prior to washing:			
Humidification in a Gore-Tex® chamber for 30 minutes (Temperature 70.9 °F ~ 71.4 °F, RH 43% ~ 72%)			
Overall spraying of distilled water over the verso and the recto.			
	pH of wash bath	Temperature	Length of wash
1	pH 7	21 °C	30 minutes
2	pH 7	20 °C	40 minutes
3	pH 7	20 °C	1 hour 10 minutes



Fig 7: Photomicrograph of during treatment (after light bleaching), showing foxing spots located in the bottom left corner of the skirt. (65 x)



Fig 8: Photomicrograph of after treatment, showing foxing spots at the same location as Fig 7. Intense foxing spots were reduced. (65x)

⁷⁶ Barandiaran, M. "Evaluation of Conservation Treatments Applied to Salted Paper Prints, Cyanotypes and Platinotypes". *Studies in Conservation*. 45, 2000. pp.162-168. Hess Norris, D. "Eakins at Avondale: Discovery, Examination, and Treatment of His Platinum Prints". *The American Institute for Conservation of Historic and Artistic Works: Preprints of Papers Presented at the Eighth Annual Meeting, San Francisco, California, 22-25 May, 1980*. 1980. pp. 53-61.

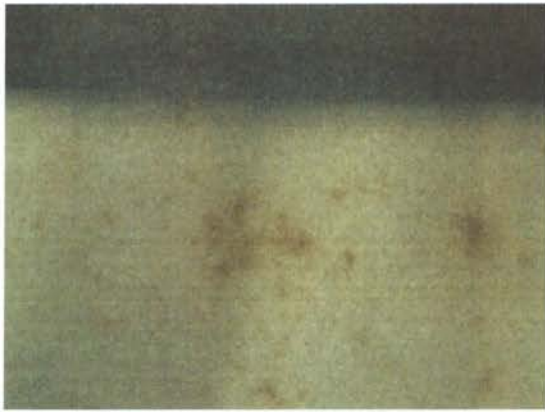


Fig 9: Photomicrograph of during treatment (after light bleaching), showing intense foxing spots at the far left under the table. (65 x)



Fig 10: Photomicrograph of after treatment, showing foxing spots at the same location as Fig 9. Intense foxing spots were reduced. (65x)

Note: The color of the photomicrographs was not representative due to technical difficulties. However, they show that localized bleaching effectively reduced the foxing.

Flattening

The print was humidified in a Gore-Tex® chamber, and placed between non-woven polyester and blotting papers. It was then pressed in a nipping press.

Structural repair

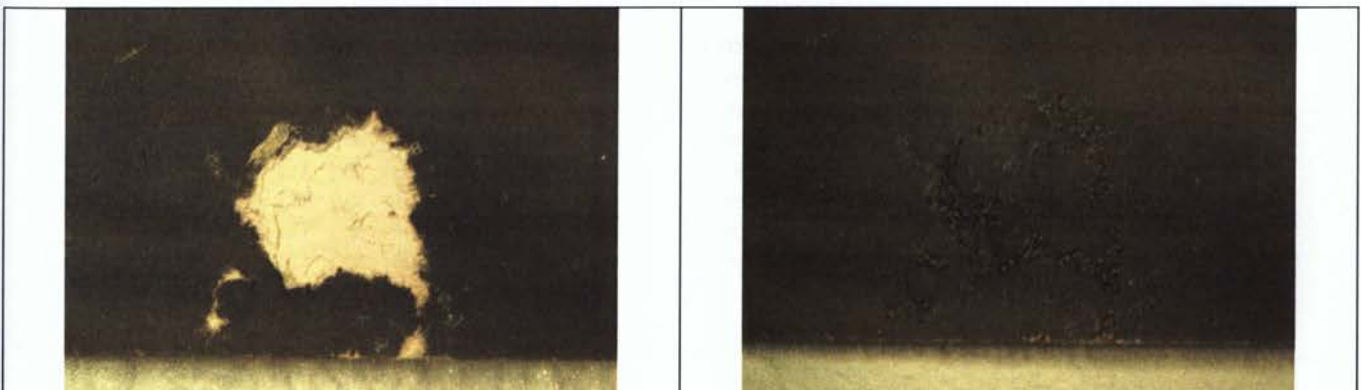
Small delaminated pieces which corresponded to the top left corner and the bottom center of the print were left attached on the verso of the window mat. They were pared down from the window mat, and the facing paper was removed by softening the adhesive with an application of water. These delaminated small pieces were aligned to the correct positions on the print and adhered using wheat starch paste. Other small delaminated areas in the bottom left corner and the edges of the bottom center were adhered using wheat starch paste.

Loss compensation

In order to enhance its aesthetic appearance, it was decided to in paint on abraded areas.

Prior to in painting, methyl cellulose (approximately 2 % w/v Methyl Cellulose 15LV)⁷⁷ was applied on the large areas as an isolating layer.

The in painting was carried out using a mixture of watercolors (Ivory black)⁷⁸ and dry pigments (either Slate gray or Manganese gray)⁷⁹ with a fine brush under a daylight stimulated incandescent light. Soft pastel was also tested to produce a matte surface; however, it was difficult to keep the particles of pastel in these areas.



⁷⁷ The Daw Chemical Company.

⁷⁸ Kusakabe Artists Watercolors.

⁷⁹ Slate Grey (K4092). Manganese Grey (K4751) Both from Sinopia.

Fig 11: Photomicrograph of during treatment located at the bottom center. (65x)	Fig 12: Photomicrograph of after treatment located at the bottom center. (65x)
A dark, rectangular photomicrograph showing a vertical, irregular, light-colored (yellowish-white) structure against a dark background, likely representing a biological or material sample during treatment.	A dark, rectangular photomicrograph showing a uniform, dark, and relatively featureless surface, likely representing the same sample after treatment.
Fig 13: Photomicrograph of during treatment located in the top left corner. (65x)	Fig 14: Photomicrograph of after treatment located in the top left corner. (65x)
A dark, rectangular photomicrograph showing a vertical, irregular, light-colored (yellowish-white) structure against a dark background, likely representing a biological or material sample during treatment.	A dark, rectangular photomicrograph showing a uniform, dark, and relatively featureless surface, likely representing the same sample after treatment.

Matting

As proposed, the print was matted in an archival quality (100% cotton, un-buffered, 4 ply thickness, PAT test passed) window and back mats using triangular sleeves of paper for mounting. Window and back mats were attached along the left edges using gummed linen tape. The size and position of the window opening were made the same as the original window mat to keep its integrity. Because of the inscription on the verso and its historical significance, the original window mat is kept with the print.

PHOTODOCUMENTATION

1. 2007_1_3_7_BT_nor_recto
2. 2007_1_3_7_BT_nor_verso
3. 2007_1_3_7_BT_nor_recto_print
4. 2007_1_3_7_BT_uva_recto
5. 2007_1_3_7_BT_uva_verso
6. 2007_1_3_7_BT_uva_recto_print
7. 2007_1_3_7_BT_uva_verso_print
8. 2007_1_3_7_DT_nor_recto_removal
9. 2007_1_3_7_DT_nor_verso_removal
10. 2007_1_3_7_DT_nor_recto_1stLB
11. 2007_1_3_7_DT_nor_verso_1stLB
12. 2007_1_3_7_DT_nor_recto_3rdLB
13. 2007_1_3_7_DT_nor_verso_3rdLB
14. 2007_1_3_7_DT_nor_recto_local
15. 2007_1_3_7_DT_nor_verso_local
16. 2007_1_3_7_AT_nor_recto
17. 2007_1_3_7_AT_nor_verso
18. 2007_1_3_7_AT_nor_recto_matting
19. 2007_1_3_7_AT_nor_verso_matting
20. 2007_1_3_7_AT_nor_corners

After residual adhesive reduction
After residual adhesive reduction
After 1st light bleaching
After 1st light bleaching
After 3rd light bleaching
After 3rd light bleaching
After localized bleaching
After localized bleaching

Normal (visible reflectography)

Manual focus, custom white balance (pre-set with gray card), flashlights 35 inches apart from the center of the copy stand and 33 inches high.

Ultraviolet fluorescence photography

Manual focus, 10000K setting, UVA light bulbs hung from ceiling each side from the center of the copy stand. A Kodak 2E filter placed in front of the lens to screen out the UV radiation.

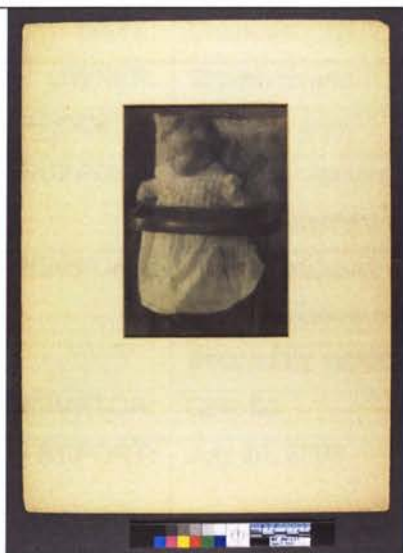


Fig 15: Before treatment, recto, normal illumination

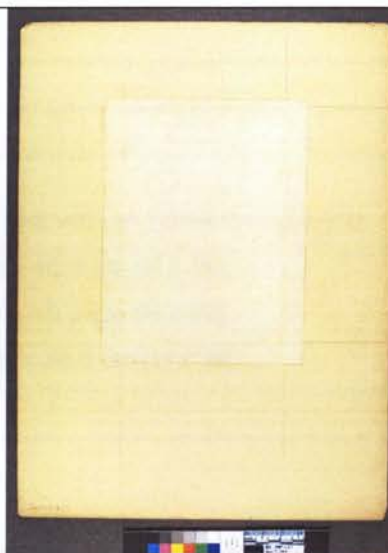


Fig 16: Before treatment, verso, normal illumination



Fig 24: After treatment, recto, normal illumination, new mat

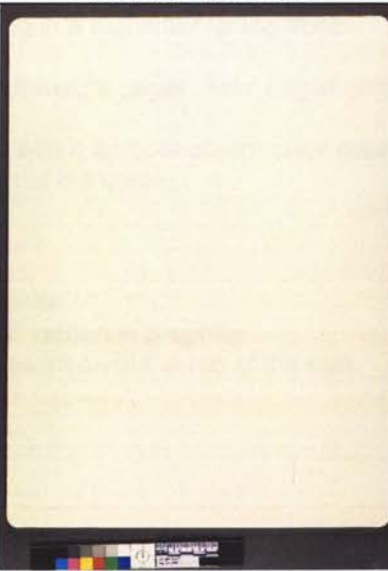


Fig 25: After treatment, verso, normal illumination, new mat

EXAMINATION AND TREATMENT RECORD

ACCESSION NO.:	2007.1.3.8
PHOTOGRAPHER:	Arthur Flint
TITLE/SUBJECT:	Lydia Flint
DATE:	Unknown
OWNER:	Steven Evans
PROCESS:	Platinum print
SUPPORT:	Off white western wove paper Print is attached to a non archival window mat with an unknown adhesive
DIMENSIONS:	Primary support: 21.3 cm x 16.5 cm (H x W) Image (window opening): 19.1 cm x 10.3 cm (H x W) Secondary support (window mat): 40.6 cm x 30.4 cm (H x W)
CONSERVATOR:	Chie Ito
DATE OF REPORT:	July 24, 2008

DESCRIPTIONS

Print

- The print is a cool color, platinum print of the infant Lydia Flint, sitting in a highchair facing front.

Supports

- The primary support is an off white, smooth, wove, western, medium weight paper. Four edges are trimmed straight.
- The secondary support is a non-archival quality window mat, faced with a smooth cream color paper and poor quality of core exhibiting a sign of degradation (orange discoloration of the core).
- There is no back mat present.

Inscription

Verso of the mat:

- At the top center, there is an inscription, "Lydia Flint", written in graphite.
- In the bottom left corner, there is an accession number "2004.1.3.8" written in graphite.
- Four graphite registration lines for cutting the window opening is present on the verso of the mat.

CONDITION REPORT

The print is attached to the verso of the window mat along the window opening using an unknown adhesive. It appears that the right and left edges area attached all the way. The bottom edges is attached, but detached at the center area. The top edge appears to be loose.

The adhesive used for adhesion is apparent on the mat at the bottom and lower right and along top edges.

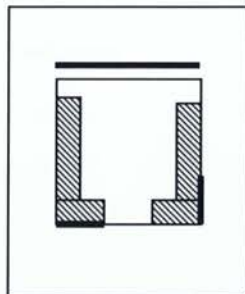


Fig 1: Diagram of verso, showing approximate location of the primary support attached to the secondary support.

Dark black lines illustrate the location of the adhesive.

PRIMARY SUPPORT

Recto:

Abrasion

- There is abrasion of the surface, creating shiny lines in the dark areas of the image.

Mold

- There is pronounced mold with hyphae on the print along the window opening of the mat. The mold appears to be inactive, as it looks powdery under a microscope x 250.⁸⁰ The presence of mold suggests that in the past the print may have been stored in an environment of high relative humidity⁸¹ and temperature⁸².
- The presence of mold suggests that the primary support might be acidic.

*Foxing*⁸³

- There is a moderate foxing overall, particularly on the top, center and bottom areas. The foxing is light orange and has irregular shaped haloes. Some of them have a dark center and some of them do not. This suggests that two types of foxing may be present, one iron related and the other not.⁸⁴

Accretion

- There is a gray accretion in the center, near the proper right arm of the sitter. Below the gray accretion, a black inclusion is present. Both have halos in lighter tone.

Verso:

Surface dirt

- Minor surface dirt is seen overall.

Foxing

- There is scattered moderate foxing overall. The foxing is light orange with scalped haloes. The location of much of the foxing appeared to be associated with the foxing and mold seen on the recto.

Local discoloration

⁸⁰ When mold is active, it is damp and smears when brushed. [Guild, S. and MacDonald, M. *Mould Prevention and Collection Recovery: Guidelines for Heritage Collections*. Technical Bulletin No.26. Canadian Conservation Institute: Ottawa, 2004. p.4]

⁸¹ The germination of mold requires a minimum amount of water. The moisture available in a substrate is called water activity (a_w) expressed as a fraction of 1. Water activity is equivalent to the equilibrium relative humidity (ERH) of air adjacent to the material or within a mold's spore. For instance, ERH 90% indicates an a_w of 0.9. The majority of mold starts grow a_w 0.75.

⁸² Most molds grow at a temperature of 4°C to 30°C (39°F to 86°F).

⁸³ The descriptive term for scattered spots reddish-brown in color.

⁸⁴ The cause of foxing is not fully understood. However, it is believed that it involves fungal activity, metal particle inclusions (mainly iron) in the paper, or a combination of both.

- There are narrow bands of orange minor local discoloration all along the edges. It measures 1.5 cm from the left, 2 cm from the bottom, 1.7 cm from the right edges. Very end of the top edge also show discoloration.
- The areas on the left, right and bottom, where the primary support is adhere to the mat show minor discoloration.

Stain

There is a pink stain in the bottom right corner, 3 cm from the right and 1.8 cm from the bottom edges.

Accretion

- There is black fibrous accretion at the top left area.

Smudge

- There is a black smudge along the bottom edge.

SECONDARY SUPPORT: WINDOW MAT

Recto:

Surface dirt

- There is overall minor surface dirt. A moderate amount of surface dirt is on the rebate of the window opening.
- Heavy surface dirt is observed on the top, left and bottom edges.

Discoloration

- The facing paper shows overall minor discoloration, particularly along the edges.

Abrasion

- All the corners and the edges are abraded, and the delaminated facing paper shows the core of the mat in the corners.

Foxing

- Scattered minor light brown foxing is seen on the mat.

Accretion

1. There is an accretion at the top center.

Stain

There is two light brown stains, probably caused by unknown liquid is in the bottom right corner.

Verso:

Surface dirt

- There is overall minor surface dirt.

Discoloration

- The facing paper shows overall moderate discoloration.

Adhesive residue

- An adhesive used for adhering the print is apparent along the bottom left and lower right edges of the print as described earlier. Transparent adhesive applied to the verso of the mat, located above the top edge of the print.

TECHNICAL EXAMINATION

- Technical examination was undertaken to gain understanding of the materials and prints' condition as well as to record the progress of the treatment.
- The photography was carried out with a Nikon 2D Digital SLR camera with long wave ultraviolet (UVA) lamps⁸⁵.
- Kodak 2E filter was placed in front of a camera's lens.



Fig 2: Before treatment, recto, UV fluorescence photography

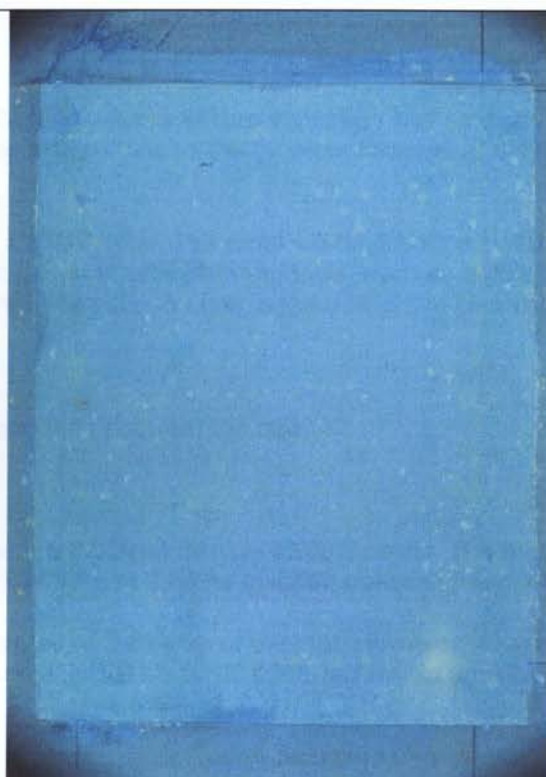


Fig 3: Before treatment, verso, UV fluorescence photography

	<i>Ultraviolet fluorescence photography (UVA) Observation</i>	<i>Inference</i>
Foxing (recto)	Minor orange fluorescent.	Foxing could be bull's-eye type.
Mold (recto)	Minor orange fluorescent.	Mold damage.
Recto	Image strong absorption. Minor orange fluorescent throughout.	Absorption indicates metal-based image. There is foxing overall.
Foxing (verso)	Minor orange fluorescent. Some of the foxing shows dark center with orange haloes.	Foxing could be bull's-eye type. Darker center may indicate presence of metal particles.
Adhesive (verso)	Whitish gray fluorescent at the top edge. Light lemon yellow fluorescent along the edges.	Whitish grey fluorescence may indicate use of starch paste. Lemon yellow fluorescent may be animal based adhesive.
Verso	White fluorescence spots throughout. Pink spots at the bottom right fluoresce minor orange.	Unknown. Mold damage.

⁸⁵ UV radiation has three regions, depending on the wavelength. 320 nm to 400 nm is long wave UV (UVA); 280 nm to 320 nm is middle wave UV (UVB); and 180 nm to 280 nm is shortwave UV (UVC). In conservation, UVA and UVC are commonly used.

TREATMENT PROPOSAL

Treatment goal

To stabilize the condition and improve the aesthetic appearance.

Photo documentation

Photo documentation will be carried out before, during and after treatment to record the condition.

Micro chemical testing

Any reagents such as water; ethanol etc will be tested on a discreet area to ensure sensitivity and safe use of the reagents. The result of testing may affect the choice of solvents as well as the proposed treatment methods.

Reduction of mold

The mold will be removed using a vacuum cleaner fitted with a HEPA filter. The mold will be dislodged with a soft brush, directing it toward a vacuum nozzle held closely to the print. Mini cleaning tools, such as a mini soft brush, which are equipped to the HEPA filtered vacuum cleaner, may also be employed over a fine cleaning screen. The operation will be carried out in a fume hood.

Removal from the mat

In order to proceed with the treatment, it is necessary to remove the print from the mat.

Options:

Mechanical removal

As the adhesive appears to be brittle, mechanical removal using a thin spatula may be successful. The mat will be placed verso side up with weights on it to keep it flat. The spatula can then be inserted between the print and the mat to separate them.

Mechanical removal will likely result in skinning of the facing paper of the verso of the mat. However, it is priority to remove the print without damaging it. In addition, introduction of moisture is not preferred due to possible inactive mold presence between the mat and the print.

Gore-Tex® marination technique

Layers of small damp blotting papers will be placed over Gore-Tex®, which is laid over smooth-side down on the verso of the print where the adhesive was applied. The open pore structure of Gore-Tex® will allow moisture to pass through from damp blotting papers and help to soften the adhesive. After the adhesive becomes soft, a thin spatula will help to remove the print.

Ultra-sonic humidifier

A local humidification using an ultra-sonic humidifier could be employed on the adhesive areas of the verso of the print. The surrounding areas will be covered with Mylar®⁸⁶ to protect them from the moisture produced from the ultra-sonic humidifier. After the adhesive become soft, a thin spatula will help to remove the print.

Poultice

A poultice can be applied to slowly introduce moisture. Methyl cellulose could be applied over a thin non-woven polyester, Hollytex®, to soften the adhesive. After the adhesive become soft, a thin spatula will help to remove the print.

Reduction of residual adhesive

The condition of the print will be assessed after removal from the mat. If necessary, and remaining residual adhesive will be removed from the recto of the print as well as the verso of the mat.

The choice of materials will depend on the condition as well as type of the adhesive. Local humidification, poultice, and solvents may be employed to help remove the residual adhesive from the surface.

Surface cleaning

After removal from the mat, the print and the mat will be surface cleaned with a soft brush. Grated Staedtler® Mars® Plastic erasers⁸⁷ will also be used to clean. If necessary, the image will be cleaned under a microscope with a great caution to further reduce the mold.

⁸⁶ An archival quality uncoated clear polyester film.

Washing

In order to reduce foxing, acidity and discoloration, it is recommended that the print be washed in distilled water manipulated to approximately pH 7 to 8 with ammonium hydroxide or other salts such as calcium hydroxide. Alkaline water will facilitate the reduction of acidity as well as the discoloration.

Prior to washing, the print will be humidified in a Gore-Tex® chamber⁸⁸, followed by spraying a mixture of distilled water and ethanol (50:50) as well as distilled water.

Washing technique options

Screen washing

The print will be rested on a fine mesh of screen, which is placed in a distilled water bath as described above.

Immersion

The print will be submerged in a distilled water bath as described above.

Bleaching

After air-drying, it will probably be necessary to carry out bleaching to further reduce the foxing.

Light bleaching

Bleaching will be carried out on the recto and the verso. The print will be immersed in distilled water manipulated to a pH around 7. The tray in which the print is immersed in washing bath will be illuminated by a light unit equipped with metal halide lamps⁸⁹. The tray will be covered with Plexiglas with a small opening to ensure the elimination of UV as well as to avoid building up heat and condensation. The pH and the temperature of the water will be monitored all the time during the light bleaching process.

The progress of bleaching will be evaluated, and bleaching will be repeated until it reaches a satisfactory level without giving an unnatural appearance. During each bleaching session, the print will be thoroughly rinsed and air-dried.

Prior to bleaching, the print will be humidified in a Gore-Tex® chamber, followed by spraying a mixture of distilled water and ethanol (50:50) as well as distilled water.

Other chemical reagents

Other chemical bleaching reagents such as hydrogen peroxide (1-3% v/v) or sodium borohydride (less than 1% w/v) may be considered if necessary after the evaluation of the results of light bleaching.

Rinsing (alkaline wash)

After bleaching, the print will be washed in distilled water to thoroughly rinse out any chemical residue. To combat future oxidation, the washing water will be manipulated to slightly alkaline using ammonium hydroxide or other salts such as calcium hydroxide.

Resize

If necessary, after the cycle of washing, bleaching and rinsing, the print will be resized using a thin solution of methyl cellulose to replace a weakened sizing of the primary support.

Humidification and flattening

The print will be humidified overall in a Gore-Tex® chamber. It will be placed between sheets of thin Hollytex® and blotting paper, and pressed under a sheet of glass and heavy weights.

Matting

Museum quality window mat and back mat⁹⁰

The current window mat to which the print has been attached, is chemically unstable and a source of degradation. Therefore, for the longevity of the print and to provide a secure and chemically sound supporting

⁸⁷ Staedtler® Mars® Plastic eraser is composed of polyvinyl chloride, fillers and plasticizer.

⁸⁸ A Gore-Tex® chamber is created with layers of wet blotting papers under a sheet of Gore-Tex® in a tray covered with a sheet of Plexiglas.

⁸⁹ General Electric Multi-Vapor Metal Halide Bulbs. The light bleaching will be carried out using HF Sunburst 250W MH AgroSun Gold Deluxe System with Sunrise Reflector Hanging Systems.

⁹⁰ Institute of Conservation. "Guidelines for Conservation Mounting & Framing of Works of Art on Paper". [online] Available at: <http://www.conservationregister.com/guidancemountingframing.asp> Accessed: May 29, 2008. American Institute for Conservation of Historic and Artistic Works. "Matting and Framing". [Online] Available at: <http://aic.stanford.edu/library/online/brochures/mattingandframing.pdf> Accessed: May 29, 2008.

system, it is recommended that the print be matted in a museum quality (100% cotton, un-buffered, 4 ply thickness, PAT test passed) window and back mats using triangular sleeves of paper for mounting. Window and back mats will be attached together along the top or left edges using gummed linen tape. Because of the inscription on the verso and its historical significance, the original window mat will be kept with the print.

Original window mat and new back matt

If its historical significance is emphasized, the print could be matted in a museum quality (100% cotton, un-buffered, 4 ply thickness, PAT test passed) back mats using triangular sleeves of paper for mounting with an original window mat. The back and the original window mat would be attached together to provide good supporting system. To isolate the print from the chemically unstable window mat, an isolating layer, such as Mylar® or Phototex paper would be necessary.

TREATMENT REPORT

Mold removal

Mold removal was carried out using a vacuum cleaner fitted with a HEPA filter (3M HEPA Vacuum and 99.97% efficiency at 0.3 micron filter) in a fume cupboard. In order to control suction, variable voltage power stat was connected to the vacuum cleaner to work under 20kV, which is gentle but strong enough. A plastic pipette was cut to a 45-degree angle and inserted to the end of the hose nozzle to be able to work in small area.

The mold on the print was dislodged with a soft brush, directing it toward the end of the pipette held closely to the print. The bevel of the window mat was cleaned using the 45-degree angle pipette along the surface.

The mold was removed from both the print and the window mat bevel.

PHOTODOCUMENTATION

21. 2007_1_3_8_BT_nor_recto
22. 2007_1_3_8_BT_nor_verso
23. 2007_1_3_8_BT_uva_recto
24. 2007_1_3_8_BT_uva_verso
25. 2007_1_3_8_AT_nor_recto
26. 2007_1_3_8_AT_nor_verso

Normal (visible reflectography)

Manual focus, custom white balance (pre-set with gray card), flashlights 35 inches apart from the center of the copy stand and 33 inches high.

Ultraviolet fluorescence photography

Manual focus, 10000K setting, UVA light bulbs hung from ceiling each side from the center of the copy stand. A Kodak 2E filter placed in front of the lens to screen out the UV radiation.



Fig 4: Before treatment, recto
Normal illumination



Fig 5: Before treatment, verso
Normal illumination

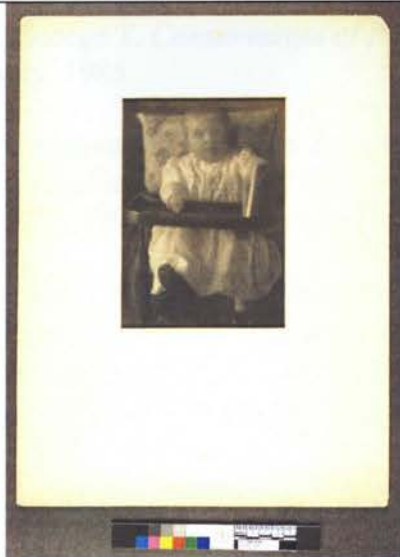


Fig 6: After treatment, recto
Normal illumination

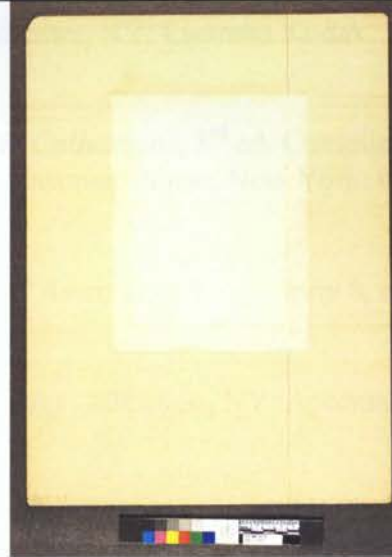


Fig 7: After treatment, verso
Normal illumination

Conservation report by Chie Ito, ARP Photo Conservation
student at George Eastman House, Rochester, NY.

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