Portraits, Preservation & Pedigrees: An Introduction to Photographic Portraiture, Photographs as a Means of Genealogical Research, and a Preservation Case Study of the Howard D. Beach Studio Collection of Glass Plate Negatives

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A Thesis in
Museum Studies

By Kirsten Feigel
Submitted in Partial Fulfillment
Of the Requirements
For the Degree of
Master of Arts
December 2017
ABSTRACT

Photography is an established art form that combines the knowledge of chemistry, light, and optics to render an image. Initially, the image is captured on a flat surface coated with emulsion and combined with an exposure to sunlight or another illuminating source. Today, images are captured by digital methods. Artistically, the photograph may reveal sceneries of landscapes, of treasured belongings and of people, as they are seen to the human eye.

Photographic portraiture is the oldest style of photography next to landscape imagery, due to commercial photographers setting up studios and experimenting with photography’s many cameras, plates, and emulsions. In the late nineteenth century, the dry gelatin glass plate negative emerged to replace its predecessors, and created a booming business in photographic material manufacturers. Today, museums, archives and libraries in the United States are using current technologies and knowledge of the dry gelatin glass plate negative to preserve them for long-term accessibility and research use. Of the many research uses, genealogists use these plates to identify ancestors and build upon a family history. This thesis will provide a brief history of photography, an insight into photographic portraiture, and steps to preserve dry gelatin glass plate negatives. It will also involve a background of genealogical research with the use of photographs. Lastly, this paper will contain a case study conducted by the author of the preservation and genealogical research of the Howard D. Beach Studio Photography Collection of Glass Plate Negatives, as provided by The Buffalo History Museum in Buffalo, New York.
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Chapter I. Introduction & Background

The invention of photography resulted in the union of two historical paths of inquiry: light combined with optics as the means of forming visual images, and the chemical knowledge to register and preserve the images. The experimentation of optics in relation to photography was performed as early as the Italian Renaissance using the camera obscura. The camera obscura was documented as both a phenomenon and a physical object, observed by artists such as Leonardo da Vinci, who described it as “light entering a hole in the wall of a darkened room forms on the opposite wall an inverted image of whatever lies outside”. The camera obscura was perhaps the precursor to the modern photographic camera due to its build and mechanics. It is depicted as a box with a lens on one side, an internal mirror angled forty-five degrees, and a pane of frosted glass on the other side. An image would be formed and rendered by tracing it on translucent paper.

Because photography required both an artistic and a scientific element to render a permanent image, it was not thoroughly conceptualized prior to the nineteenth century. Chemical knowledge of light sensitive emulsions, elements, and compounds were relatively recent discoveries in the beginning of the 1800s, and halogens such as fluorine, chlorine, and iodine were thought to be corrosive, toxic, and damaging to those persons unacquainted with such materials.

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One of the first individuals to experiment with these chemicals and create permanent photographs was Frenchman Joseph Nicephore Niepce. In 1816, Niepce explored the use of photosensitive emulsions and several light sensitive compounds on surfaces of paper, glass, stone, and metal. This resulted in the first success of making photographic recordings of engravings, which, after the addition of direct sunlight, appeared as “negative” images and could be used as engraving plates. In 1827, Niepce captured the earliest extant photograph, which included a view overlooking the roof of his barn to the landscape beyond. He coined this invention “heliography”, a term in the Greek language meaning “sun writing”. He captured this photograph with the use of his camera obscura, coating a flat surface with a layer of asphaltum and positioning it for a lengthy exposure in the camera. The heliographs he created required exposures of four to five days before development.

In the early 1820s, also in Paris, an architect’s apprentice attempted to fix the images produced by the camera obscura. He would later become the man who introduced photography to the world. Louis Jacques Mande Daguerre was interested in the works of Niepce, and contacted him in 1826. The two men began a partnership to introduce the sensitization of a silver plate directly with the fumes of iodine. Niepce died in 1833, and Daguerre continued to pursue this approach until his success. Using a copper plate coated with a thin layer of silver, it was sensitized with iodine vapors and exposed in the camera for three to twenty minutes. The image was developed using fumes of heated mercury, resulting in brilliant highlights and more intense detail than its predecessor. Daguerre openly introduced his daguerreotype to the world as he sold his rights to the process to the French government in 1839.\(^3\)

Additional experimenters, artists, and chemists researched photography following the worldwide accomplishment and fame of the daguerreotype. William Henry Fox Talbot of England succeeded in capturing permanent photographic images with silver chloride-sensitized paper. In 1841, Louis Desire Blanquart-Evrard used paper and egg-white to produce albumen paper, which received backlash for his lack of accreditation to Talbot for the idea. Niepce de Saint-Victor invented the albumen plate in 1847, and Frederick Scott Archer introduced the first glass plate negative process in 1851: the wet-collodion process.

Archer’s wet-collodion process included an emulsion mixture of guncotton, alcohol, and ether, added to a compound of potassium iodide or bromide, and poured evenly over the surface of the glass base material. As this process drew the attention of commercial photographers for its improved techniques over its predecessors, it faced criticism and drawbacks from the photographic community. For one, the fluidity of the emulsion on the glass plate had to be smooth and even to prevent irregular image registration. This was done by ensuring the emulsion was poured onto the plate and not brushed on. Secondly, collodion was very sensitive to light, forcing the photographer to expose and process the image while the plate was still wet. Photographers were required to carry the processing chemicals and trays with them into the field, and many traveled with a portable dark tent.

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In 1871, Dr. Richard Leach Maddox published a letter in the *British Journal of Photography* that described gelatin as an emulsion for photographic use. Gelatin, a highly-purified animal protein, remains stable when kept in a dry environment, and thus became the component for the “driest of the dry processes”, according to the journal’s editor. The process featured many of the same steps as Archer’s wet-collodion plate, but utilized different sensitizing, fixing, and development solutions. Maddox soaked the gelatin in water, added cadmium bromide to chemical solution and added silver nitrate to the mix. The emulsion was coated on glass and allowed to dry. Maddox was led to the use of gelatin in response to the strong odor emitted when conducting the wet-collodion process. As the dry plate process involved fixing the gelatin to the glass plate and allowing the plate to dry before being exposed to a camera, manufacturer curiosity sparked around the world. Between the 1870s and the first quarter of the twentieth century, photographic material companies could produce these plates in-house and sell in quantities to photographers. In 1879, John Carbutt of Philadelphia, Pennsylvania produced and offered for sale the gelatin dry glass plate. George Eastman and the Eastman Kodak Company of Rochester, New York, was soon to follow.

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Due to the ease of use of the gelatin dry glass plate, most professionals dropped the wet-collodion process. Amateurs had time to learn the new technique and did not require the chemical knowledge needed to prepare the plate. Hand-held cameras were beginning to appear as early as 1881, and by 1888, the first successful Eastman Kodak roll-film camera was marketed\(^8\). Today, digital cameras and mobile devices can capture any photograph at any given time or moment. Those utilizing these materials require the least amount of scientific knowledge to press a button and take a still image. As the twenty-first century continues with professional academic

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portraits, wedding pictures, and the infamous “selfie”, photography continues to be a growing field in the world’s culture.

A. A History of Photographic Portraiture

At the time of photography’s discovery, photographic portraiture was one of the most difficult forms to implement. The daguerreotype, though well received and celebrated by the artistic community, was perhaps the least suitable process to render portraits due to its long exposure time. The photographer and the subject were both forced to gain a sense of patience and self-control as the photographer was required to wait and the subject was made to hold a pose for as long as thirty minutes. However, one of the most appealing aspects of photographic portraiture is that it is one of the few areas of photography in which it is possible to have everything under the photographer’s control. The commercial photographer could position his model however he liked, and in a studio, he had control over lighting, backgrounds, and props⁹.

The sitters in early photographs were typically posed based on the photographer’s Victorian ideals of Renaissance artist Titian and eighteenth century British painter Sir Joshua Reynolds:

“The eyes should be directed a little sideways above the camera, and fixed upon some object there, but never upon the apparatus…Stout persons should be placed at a certain distance from the apparatus, turning towards it a little sidewise; whilst people of slender make should be made to sit full in front, and nearer the apparatus…The hands should rest easy on the lap, neither too high nor too low; or one hand may be placed on the table, the other holding a book or some other objects…In the case of ladies, a shawl or boa, or similar article of dress, thrown lightly

over the shoulders, and arranged in a manner to hide some defect, and to properly distribute light and shadow, will mostly tend to produce a pleasant impression.”

Portraiture flourished in the latter half of the nineteenth century, as chemists, artists and scientists globally attempted better ways to modernize photography. Frederick Scott Archer invented the wet-collodion process in 1851, and a year later, displaced the daguerreotype altogether due to inexpensive materials and simpler manipulation. The gelatin dry glass plate negative in turn produced both booming portraiture as well as flourishing business services.

Photographic portraiture is a process of self-discovery, personal review, and classification. The effects of aging on the human body is a phenomenon that all experience, and photographing the upbringing of subjects from infancy to adulthood captures the naturalistic approach of the aging process. In photographing groups of people, the individuals may stand out to reveal their own personality traits by body gestures or clothing choices, but they are also absorbed into a collective identity. The presentation of the power through belonging and the strength in numbers coincides with group photographs, especially those of family members or friends. There is a commonality of thoughts, beliefs, and experiences that group these subjects together.

B. Photographic Preservation and Collections Management

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The American Institute of Conservation of Historic and Artistic Works (AIC) characterizes preservation as “an activity encompassing preservation and restoration”. This includes the initial processing of the negative or print for long-term stability, displaying and storing the photographic artifact in appropriate exhibition and storage environments, and the systematic duplication of originals by means of photographic reproduction.

i. Collections Management

In the process of photographic preservation there are multiple operations that museums, libraries, and archives must consider providing the necessary environment for stabilizing their photographic collections. Collections management can be the simplest operation that all institutions offer. To manage the collections, the collections manager and other museum staff are responsible for being knowledgeable about the number of photographs in the collection, the types of photographic processes that the materials represent, the general condition of the photographs and if conservation is necessary. They should also be familiar with the space they currently hold available for the collection and the equipment they have and may need in the future. Financial planning comes into play through the operations department of the museum, especially as there is a dire need for conservation materials, conservators, and advice from consultation institutions.\(^{12}\)

Periodic inspections should be done of the collection to deter deterioration of photographic materials. Making this a habit for museum staff saves time and money, provided they detect issues before damage becomes irreversible. Professional filing and cataloging

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procedures should be followed, labeling archival materials accurately with name, accession or file number, as well as the correct identification of the negatives and prints.\(^{13}\)

**ii. Reasons for Photographic Preservation**

Photographs serve many purposes by providing evidence of the activities of persons, historical and journalistic documentation, and source materials for research. While new sciences are becoming readily available to museums, enhancing the process of photographic preservation and access will benefit the needs of the larger public. One of the technologies that cultural institutions take advantage of is the act of digitization.

The practice of digitization for online viewing offers many benefits, which primarily involve helping to preserve the original photographs or negatives. Original light-sensitive prints, negatives, and transparencies can be duplicated for specialized research. Digitizing images increase outreach programs and promotes fundraising activities. Mutually interested museums can collaborate on digitization projects in order to fulfill the public’s desire for historical information.\(^{14}\)

**iii. The Legal and Ethical Considerations for the Reproductions of Photographic Collections**

Cultural repositories for historic materials and documents are engaging and taking advantage of the growing change in technology. These advancements are beneficial for public

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access, utilization, and preservation techniques. Duplicating, copying, and adding enhanced digital surrogates online, based on physical collections, are actions that can face legal issues if not handled properly.

According to Diane Vogt-O’Connor, Chief Conservator at the Library of Congress, archivists are required by their institution to balance the rights and concerns of key constituencies, each of which holds a fundamental stake in collecting photographs. As it is the democratic right to fulfill society’s need for rapid and unlimited access to creative works for aid in research of education and news reporting, it is the creator’s right, under law, to control how their works are used and are being compensated by the institution that exhibits them. The needs of the donors are to be satisfied to ensure that the works they provide to a museum, archive, or library are properly maintained and made accessible while honoring agreed-upon donor restrictions. The final constituency is for the repository to respect the individual’s and group’s interest in controlling how their private images and sensitive information about themselves are used and contextualized. The following significant laws passed by the United States Congress provide the protection of privacy to those involved in the above constituencies, and relates to access and use of photographs in museum collections.

The Visual Artist’s Rights Act (VARA) was passed in 1990 by the United States Congress, and serves as both a private and public justification to the Copyright Law. The aim of the Act is to encourage visual artists to make and display works of art with the protection against destruction or damage to the art. The artist also has the right to disclaim any of the works that

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have been modified or mutilated that would hurt the reputation of that artist. However, VARA does not protect against damages occurred during conservation practices and public presentations.16

The United States Copyright Act of 1976 is present in the United States Constitution Article I, Section 8, and states that its purpose is “to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries17”. Specifically, this Act protects any original material in fixed form, whether published or unpublished, amateur or commercial, from the moment of creation. To avoid infringement, museums may require professional legal help, consult with the appropriate discipline specialist, and display copyright notices online and in-house on copy machines18.

C. Genealogy and Pedigrees

Initially, genealogy served the purpose of documenting royal lineages in Europe, with the oldest surviving genealogies dating back to the 6th century AD. After the European colonization of America, the American colonies would adopt the traditions of conducting family history, however, the type of expertise remained largely in London and Madrid.

By the mid-nineteenth century, “sober and practical America was the largest present producer of genealogies”. The number of family records kept by Americans was much larger than those kept in aristocratic England. British genealogist Sir Bernard Burke stated that: “Massachusetts [was] more genealogical than Yorkshire”. The city of Boston published and maintained a magazine devoted exclusively to genealogy.

As tensions of the ever-changing economic and family settings grew in America, the practice of family history allowed citizens to deal with the distress. Pedigrees helped Americans understand their local and national history and reinforce the sense of self as individuals and citizens. Colonials relied on genealogy to build and reinforce a world of kin. Genealogy became a family-related activity, and the majority of the genealogists in America were women.

American women in the mid-eighteenth century were stewards of family memory. They were trained in painting and embroidering and would create works of art that represented coats of arms and other genealogical symbols. Symbols like vines, touching hearts or links eventually led to the creation of the family tree. The tree was originally a genealogical symbol in Europe, and Americans did not adopt the tree until the early 19th century.

Today, genealogical development in America is based off three stages: a period of oral tradition, committing collected information and pedigrees to writing, and attempting to record all

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members of a family who were not merely higher-class citizens\textsuperscript{22}. As technology advances, most genealogical research can be conducted on the Internet, through online archival databases presented by libraries and genealogical societies. Communication between family members has become more accessible through phone calls, text messages, e-mail, and other forms. Oral histories are being collected for institutional purposes and museum exhibitions. Discovering photographs of ancestors can provide an insight of how they lived, what they looked like, and how relationships grew on a lineal scale.

**D. An Introduction to the Howard D. Beach Photography Studio Glass Plate Negative Collection**

In the spring of 2011, The Buffalo History Museum in Buffalo, New York acquired a collection of roughly 57,000 gelatin dry plate glass negatives. These plates originated from the studio of Howard D. Beach, a local commercial photographer active for the first half of the twentieth century. The dominant theme in the collection are of portraits; subjects who were higher class citizens, business moguls, elite families and young starlets.

As perhaps the single largest surviving collection in Buffalo from that era, the collection arrived at the museum in 2012. The preservation of the glass plates was necessary for the mission of the museum, as its focus is to exhibit Western New York’s history. With the help of the SUNY Buffalo State College Research Foundation’s grant of $6,600 for student assistantship, cleaning supplies, and continued consultation with a local conservator, the collection has begun and continues to be subjected to a massive preservation process. In due

time, it is believed that the Howard D. Beach Photography Studio Glass Plate Negative Collection will be available to the public onsite and online for research and accessibility purposes.\textsuperscript{23}

Chapter II. Portrait Photography in America

Photography has had a profound influence on American society and served as a direct aid to cultural nationalism. Photography allowed provincial Americans to see people and places they would never encounter in their ordinary lives. Having been introduced to the United States in the fall of 1839, the daguerreotype became an influential invention in preparing photographic portraits, those of which would become a commonplace object of middle-class life.24

Due to the popularity in the United States, predominantly in New York City, daguerreotype portrait studios emerged on upper floors of buildings on and off Broadway. The number of working photographers grew and expanded from Boston to San Francisco. The portraitist duo of Southworth and Hawes produced perhaps the finest portrait daguerreotypes in America, capturing intellectual, political and artistic figures of the time. Mathew Brady photographed presidents, military men, and business leaders.25 By 1853, the United States population grew to over 23 million, and an estimated 13,000-17,000 people across the country were making three million daguerreotypes a year.26

A. Styles and Practices of American Portraiture


Most commercial photographers in the daguerreotype-era and later took commissions from the American public to photograph them in identity-capturing ways. Portrait photographs became a social context, whether it was to collect daguerreotypes, share images with family members, or display them in galleries to promote an artist’s work. The public portrait grew in popularity with the occupational portrait and the postmortem portrait. By the end of the twentieth century and into the twenty-first century, photographs became easier to capture by oneself with the use of the photobooth and the smart phone.

i. The Occupational Portrait

As the daguerreotype flourished as a proud European invention, the industrialization of the American economy was only beginning. Unlike Europeans, Americans faced a lesser chance of possessing inherited wealth and had to earn a living to provide for their families. Middle-class American citizens took up careers as artisans, shopkeepers, carpenters, bakers, jewelers, and other occupations27.

The occupational portrait was characteristically an American phenomenon. During the mid-nineteenth century, large numbers of American citizens had their photographs taken accompanied by evidence of their trade, profession, or talent. Because these photographs documented hard work and labor, it provided a “personal and nationalistic meaning”, supporting the idea of the American Dream28.

ii. The Postmortem Portrait


In the nineteenth century, much of Europe and North America practiced Christianity and regularly attended religious services. Among the many beliefs held by Christians, the belief that the memory of worthy people would exert a positive and beneficial influence on others. Keeping one’s memory alive after death through photographs proved existence and provided remembrance of a deceased loved one.

The majority of postmortem portraits in the nineteenth century and early twentieth century featured infants and young children due to high infant mortality rates and illnesses. Photographers chose between two forms of posing the deceased: death as sleep, or alive after death. Whereas death was an ambiguous topic and sleep a more familiar and safer alternative, posing a dead child as if they were asleep provided viewers the less distressing thoughts of decay and decomposition and instead proposed a new day ahead29.

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Adults were also posed in sleep-like positions, though photographers restricted physical movement of the body to placing the arms and hands on tops of bedcovers. In the 1850s, Parisian photographer André-Adolphe Eugène Disdéri regarded the seated pose to the success of securing a lifelike appearance in postmortem photography. This trend was popular in parts of southern Italy during the nineteenth century, and would be followed up with a retouching of the print to make the eyes appear open.30

Postmortem photographs would be distributed among friends and family, and portraits of deceased celebrities took on a tiny minority of retail trade. Postmortem photography continued

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through the first half of the twentieth century, but declined due to the taboo of death in the latter half. Death portraits lost their meaning and individuals stopped commissioning them. The living community distanced themselves as death became less of a natural, common event and grew into a foreign and morbid reality\textsuperscript{31}.

By the end of the twentieth century, postmortem photography started to rise once again. In the 1970s, images of portraits of stillborn and neonatal infants suggested and encouraged a belief that they would help the parents recover from the loss of their child. “Postmortem” became a term less used as it was replaced with “bereavement”\textsuperscript{32}. By the twenty-first century, bereavement photographs became and continue to be a trend in modern photography in America and throughout the world.

\textbf{iii. The “Photomatton” Automatic Portrait}

One of the first successful automatic photographic processes delivered eight fast-actioned, rapid drying, sepia-tinted positive images on a single strip of paper without the need for a photographer or negative. Russian-born immigrant Anatol Josepho displayed his invention of the photo booth in New York City in September 1925, and it was widely received by the public as a means of taking a quick and cheap self-portrait.


In the first years of commercial use, the photo booth was run by attendants. The sitters would deposit a quarter and the attendant would tell the client how and where to look. With the
use of four lightbulbs and a white background to reflect the light, eight black and white photographs would be printed and presented in eight minutes. The client then would be able to choose their favorite portrait of the eight to have enlarged and tinted at a Photomaton studio.

In 1929, the Surrealist artistic movement was at its peak in France, and the Photomaton drew interest. Publications such as the *La Révolution Surréaliste* featured articles praising the Photomaton, and for the first time, the photobooth portrait was identified as an artistic medium. American artists such as Andy Warhol and Gerard Malanga used the photobooth to create artistic portraits, and celebrities took advantage of the new technological photography machine.

iv. The “Selfie” Self-Portrait

After the handheld Kodak camera was introduced in 1888, the role of amateur photographer rose, and portraits were taken in the form of “snapshots”. In today’s society, it is safe to conclude that the rise of technology paired with the knowledge of picture taking is no different than it was before. The photographic self-portrait is perhaps more widely documented with a cellular device, coining the activity as “taking a selfie”. In 2010 Apple Inc. released the iPhone 4, which included a higher-quality front-facing camera than its predecessors. This made it possible to take a photograph outside or without a flash where a burst of light would dominate the picture. Some individuals may perceive this act as self-obsessed or tacky, but media scholars believe that the “duck-face” pose is remaking the global self-portrait.

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Each selfie is the performance of a person as they hope to be portrayed by others. They can pose themselves in the most flattering ways possible, and easily dispose of images they don’t find to their liking. As portraits taken in the mid-nineteenth through the twentieth century may have documented more men than women, statistics reveal that most selfies today are taken by women. Celebrities such as Kim Kardashian post their selfies on social media to maintain and extend their role as celebrity, and others use artificial filters to portray a better likeness of themselves.34

Photographic portraiture in America has since blossomed due to technological advances in how communities communicate with one another. In the digital age, it is easier to send photographs of oneself to others, may it be the Internet or smart phone applications. Artistic composition in portrait photography in the twenty-first century relies mostly on computer image editing software and artificial filters on phones. Preservation of these photographs rely on hard drives, the Internet and its sharing tools, and even still, printing images directly from phones by wireless printers and kiosks.

B. Composition in Early Photographic Portraiture

To be a professional portrait photographer in the early twentieth century typically meant the use of a studio. The photographer would have been trained in both the technical and artistic aspect of capturing an image to document a pleasing likeness of the subject\textsuperscript{35}. The photographer would acknowledge the importance of light, pose, expression and lines. To make any design successful, an idea must be present, the artist must have technical knowledge, and must know the fundamental principles of design, or composition\textsuperscript{36}.

Exposure, angle, and amount of lighting present in a photographic studio is perhaps the most principal factor in portrait photography. To capture a sitter in the best likeness possible, the studio fixtures, skylight angle, the sitter’s exact placing, and the relative position of the camera are all factors that can make a photographer successful in his work.


Art and photography critic Sidney Allan spoke on his own account of the best way to light a subject for a portrait. In his opinion, the use of simple lighting techniques: lighting that is soft and pleasing, and even more so, natural, provide the best effectiveness to capture the likeness of a subject. All photographers are different in the choices they make to record an image of a person. However, one similarity of early commercial works features lighting techniques made famous by the Old Italian Masters. Artists such as Van Dyck and Rembrandt were known for their strong highlights upon a subject’s forehead and nose, and less vigorous on the cheek bones, upper eyelids, mouth and chin.\(^{37}\)

Posing the subject for a photographic portrait, the photographer has total control of how he prefers the model sit, stand or face, leaving the rest to the camera. The subject may be of an individual, a group of individuals, children, elders, family members, and each photographer will have a certain position they may place them in.

Line is possibly the most basic element of visual composition, as it occurs naturally in nature. In photography, lines draw the eye to the focus point, and in portrait photography, the focus point is the face. In portrait painting, the art provides flowing movement of the paint strokes, whereas in portrait photography, the photographer must mirror that fluidity through lines. The arm or hand of the man, or the dress and form of the woman reveal lines that can draw and lead the eyes to the focus point.\(^{38}\)


C. A Look Into the Studio of Howard D. Beach, 1911

In 1911, Sidney Allan visited the working studio of Howard D. Beach in Buffalo, New York. Allan was met with a combination of the irregular colors of the studio, hand-picked furnishings and elaborate props. The illumination of electric bulbs amidst the skylight proved profitable for Beach and other commercial photographers as the control of lighting was, and arguably still is, an important feature in portrait photography. Speaking on behalf of his photographic lighting, Beach was quoted:

“I look for the most favorable light. Every face has one side which is more favorable to depiction than the other. In exactly the same light one side will look infinitely better than the other. I select the one that looks best. Then I experiment with the angle of light and the distance, until I discover the most perfect illumination that seems to me possible for the particular sitter I am dealing with at the time.”

Beach also believed that the eyes were the window to the animation and character of his subject; that they ought to dominate the entire composition he captured. The face is always well modeled and is the main interest in the portrait. Allan notices this in the way Beach keeps a large part of the body out of focus, mirroring a technique called the binocular technique that painters and other artists use. Because the eye is naturally drawn to clear lineal definition, faces are more prone to be focused in pictorial works of art.

Chapter III. The Preservation of Gelatin Dry Glass Plate Negatives

The first noted suggestion of capturing images on glass was shortly after Talbot’s inventions and was primarily proposed to replace oiled and waxed papers of calotypes\textsuperscript{41}. The use of glass as a photographic base was not experimented with until 1848, as photographers noted

\begin{flushright}
1911, pp. 457–459.
\end{flushright}

the advantage of a cheaper base for sensitive coating on copper plates. Another advantage was the transparency and the possibility of duplication. In 1847, inventor and photographer Niepce de Saint-Victor provided his knowledge of the use of gelatin as a photographic emulsion. “I have tried the gelatins. They also give picture with fine detail…but they dissolve too easily in water.”

Preserving gelatin dry glass plate negatives in a museum setting requires specific knowledge. Restoring, transporting, digitizing, and storing photographic plates properly is beneficial for the museum, its affiliates, and the community.

A. Steps for Glass Plate Negative Photographic Preservation

The International Organization for Standardization (ISO) is an independent and non-governmental organization whose members come together to market relevant International Standards that support global innovation. Formed in London in 1946 and operated world-wide since February of 1947, the members of the ISO agreed that the objective of the organization would be “to facilitate the international coordination and unification of industrial standards”. Today, the ISO comprises 89 countries and promotes not only environmental standards, trade regulations, and food safety, but promotes and propagates photographic standards on a world-wide basis.

ISO 18918, “Imaging materials – processed photographic plates – storage practices”, calls on experts in the field of photo-conservation to continually provide information in

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magazine articles, periodicals, textbooks, and other forms of literature to inform the public and other experts of the preservation and conservation techniques of glass plate negatives.  

i. Restoring Glass Plate Negatives

Deterioration is defined as any physical or chemical change in the condition, appearance, or appeal of the original. This can be caused by poor processing, changes in the environment, adverse storage conditions, and mishandling of the material. It is not uncommon for photographic collections to face signs of deterioration over time, even when meticulously processed and preserved. For those in the photo-conservation field, there are preliminary steps to follow to begin a treatment process with any photographic material. Documenting the condition, examining the object, making a photographic copy, and cleaning are crucial in the restoration process.


SUBJECT NAME: Coppins, F.J. - truck          NEGATIVE NUMBER: 42586

ORIGINAL BOX
Box number: 42500          Manufacturer: Hammer
Lot number:              Brand: Hammer
Size: 8x10

CARD CATALOG
Date: 7/20/1917          Photographer: Beach

NEGATIVE
Description: Truck with sign that reads “Painting by Coppins.” Rest of the image has been painted over so only the truck is visible.

DATA ENTRY
Initials: NK          Date: 10/29/14

Figure 5: An example of a condition report from the Howard D. Beach Collection. This condition report is for an image of a truck that reads, "Painting by Coppins".
With respect to glass plate negatives, physical, chemical, and biological deterioration can range from cracked plates to bacterial infestation of the gelatin binder. Cracked plates are those in which the glass support has cracked, leaving the emulsion layer intact. If the emulsion is lifting off the glass support, this may be due to elevated levels of relative humidity and temperature. This is likely detected around the outer edges due to the stress. Flaking emulsion however, is a nearly irreversible physical deterioration issue that results from the binder being chemically attacked or after extreme dryness. Conservator Gary E. Albright of the Art Conservation Department at Buffalo State College has claimed that small flakes can be reattached with gelatin, methyl cellulose, or other synthetic resins. Another stabilization technique performed to reduce more flaking is to photographically duplicate the image and conduct a sandwiching procedure to protect the emulsion.

There are multiple signs that a glass plate negative has deteriorated by a chemical nature. Forms of chemical degradation include image discoloration, image fading, and stains. Most stains occur due to an overuse of solutions, excessively high solution temperatures, the lack of adequate agitation when immersed in solution, and uniformity of treatment. Glass plate negatives have often deteriorated due to silver and silver sulfide stains caused by oxidizing agents, and often, the plate can be treated in chemical solution baths. If the conservator detects emulsion lifting from the plates, treatment should be ceased immediately.

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As former research chemist at the Eastman Kodak Company, George T. Eaton provides a step-by-step stain removal process and a table of chemical solution bath ingredients. To begin, the glass sides of the plate should be washed with water and swabbed with alcohol using a gauze of sterilized cotton; the emulsion side should be wet with tap water. This will provide a clean, damp surface to add Solution One to both sides.

<table>
<thead>
<tr>
<th>Solution No. 1</th>
<th>Ammonia Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avoir</td>
</tr>
<tr>
<td>Distilled Water</td>
<td>9.0 fl oz.</td>
</tr>
<tr>
<td>Non-detergent ammonia</td>
<td>3.0 fl oz.</td>
</tr>
</tbody>
</table>

Table 1: Solutions for Removing Stains from Glass Plate Negatives (Ammonia)

After the first solution is applied to both sides of the plate, the remnants of the non-detergent ammonia must be rinsed off before adding Solution Two. Solution Two is added with a damped cotton cloth, wiping the emulsion side lightly and repeatedly. The thiourea crystals and phosphoric acid combination will reduce the presence of tarnish on the emulsion side of the plate. Following the addition of the second solution, rinsing the excess chemicals under tap water for one minute is required.

<table>
<thead>
<tr>
<th>Solution No. 2</th>
<th>Thiourea Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Avoir</td>
</tr>
<tr>
<td>Distilled Water</td>
<td>16.0 fl oz.</td>
</tr>
<tr>
<td>Thiourea Crystals</td>
<td>0.65 fl oz.</td>
</tr>
<tr>
<td>Phosphoric Acid</td>
<td>0.35 fl oz.</td>
</tr>
</tbody>
</table>

Table 2: Solutions for Removing Stains from Glass Plate Negatives (Thiourea)
Lastly, there are biological factors that assist in the deterioration of glass plate negatives. Gelatin plates are prone to fungus and bacteria due to its chemical makeup, which is made from animal protein. Relative humidity, that of which renders a 60% influx or higher, can induce irreversible changes that produce colored spots caused by the release of spores, white filaments, and decomposition of gelatin that results in a sticky, yellow-colored, and water-soluble substance[^49].

ii. Transporting Glass Plate Negatives

Sarah S. Wagner, the Senior Photographic Conservator at the National Archives and Records Administration, published a paper in the American Institute for Conservation “Topics in Photographic Preservation” manual, providing general principles for the transporting of glass plate negatives. These advisory steps support those working in libraries, museums, and archives on cautiously moving these fragile photographic materials.

The instrument best used for transportation is a cart wrapped protectively in plastic or padded with moving blankets or foam. The glass plates should be appropriately stored in archival, acid-free storage boxes or kept flat in protective sink-mat enclosures for those that are broken or cracked. An alternative to standard boxes is a custom crate constructed with an interior foam lining and rigid dividers spaced several inches apart to eliminate any side-by-side movement that can cause cracks or further damage. When placed on the cart, these boxes should never protrude outside of the cart, as bumping or falling may occur.

If these carts are meant to transport outside of a building and onto a truck, the truck-bed must include an environment acceptable for photographic materials. Air conditioned truck beds are required during hot weather, heated truck beds are required in cold weather. Lastly, it is important to conduct a test run of the transit route before transportation to take note of the travel time, road conditions, and truck-bed stability\textsuperscript{50}.

Siegfried Rempel of the Canadian Conservation Institute also provides advice when administering transportation of photographic materials with a cart. The top of the cart should be used to transport the larger of the boxes, and hold no more than two at a time, while the bottom shelves of the cart hold the smaller boxes. Bumpers should be present on vertical cart supports to absorb any minor impact\textsuperscript{51}.

iii. Digitizing Glass Plate Negatives

Digitization is defined as the process of converting content of physical media, such as photographs or negatives, to a digital format. Libraries, museums, and archives benefit from this practice in ways that can provide both public access and preservation attempts. The digitization of large collections is not likely to be attempted more than once a generation due to costs, and thus, educated decisions about digitizing and archiving processes are imperative\textsuperscript{52}. Digitizing


glass plate negatives by either a light-box and digital camera or a flatbed scanner can provide access to these images to the public without further handling the physical glass negative.

Dr. Michael Prichard of the Royal Photographic Society in England, answered a blog post located on the institution’s website. There, he describes the safest and easiest way to digitize glass plate negatives of all qualities and quantities, providing advice for current photographers. His equipment list includes a soft brush, light-box, L-shaped black cards, a digital camera, a tripod and imaging editing software. The best method, according to Prichard, is to place the plate on the light-box and use the L-shaped black cards to mask off any extraneous light; focusing only on the image present. Because light sources are incredibly harsh to any form of photographic material, he suggests an LED light-box for this exercise. LED lights do not emit copious amounts of heat and filters out ultraviolet rays. Illuminating the plate with the LED light box also produces a monotone image compared to sunlight or an unfiltered bulb.53

Secondly, the digital camera should be mounted on the tripod attached to the light-box and hovered securely over the plate. Lights not protruding from the box below should be turned off to reduce glare and reflections. The camera’s auto-exposure feature should be used to determine the correct exposure in regards to the lighting and lack thereof present in the room. Prichard also adds that using a mid-range aperture of f/5.6 will ensure that all of the plate image, even that which may not be lying completely flat, is in focus. The emulsion side of the plate should be face-down on the box so that the image will be in the correct position. Digitization should be captured in color, and using the image editing software, the color image should then be

converted to grayscale\textsuperscript{54}. Though the negatives can be photographed in color, the images would contain the color cast of the original. Converting the image to grayscale on an image restoration software results in a smaller file than if saved in RGB format, and thus results in increased storage space\textsuperscript{55}.


TownsWeb Archiving Ltd is a company that specializes in providing digitization services and software to provide online access to archives and other cultural institutions. Based in the United Kingdom, their website contains biographies, videos, and advisory case studies of those involved in this technological advancement. One of the case studies provided on the company’s websites is the digitization of glass plate negatives with the use of a flatbed scanner.

Dependent on the model and specifications of the scanner being used, calibrating the scanner to its “transparency” mode will ensure possibly the best settings and result in high
quality images. Like with storing, cleaning, and moving glass plate negatives, it is pertinent that nitrile gloves are being used during handling. This protects the glass from contaminants, such as oils from skin, fingerprints, and scratches. The gloves also protect the handler from injury on chipped edges, broken plates, and glass shards. Before the initial scanning, it is important to clean the plates before setting them on the scanner. Dirt and dust will adversely affect the quality and clarity of the images produced when digitizing them. To remove most impurities, a hand-held bulb duster or anti-static brush can be utilized.

In conducting the digitization of glass plate negatives, one must scan emulsion side down. This is to be able to obtain the clearest image when using the scanner. If the non-emulsion side is face down, the image produced will be slightly distorted and increases the chance of damage to the plate and the scanner bed. A minimum resolution of 600ppi is standard for scanning glass plate negatives, due to clarity depending on the size of the original plate. This ensures the capturing of the most tonal information as possible. When uploaded to the scanner software, an uncompressed TIFF file should be created as the master file. From this master file, compressed lower resolution surrogate JPEG files can be produced. JPEGs are currently believed to be the most widely used file format, as it is easily accessible over a variety of platforms.

When scanning in grayscale or color, the decision should be made based on the aims for the digitization project. If the use of this digital image is to preserve the plate and allow access, grayscale will provide the clearest and most useful images. To create a truer representation of the photograph, full color is suggested.

iv. Storing Glass Plate Negatives

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Glass plate negatives are the bulkiest and most fragile of all photographic materials due to the thick glass support. Their sizes typically range from 4”x5” to 8”x10”, but can be much larger. They require extensive storage space and specific environmental regulations.

Relative humidity and temperature controls are the major factors in establishing a proper environment for glass plates, with a recommendation of temperature less than 65 degrees Fahrenheit and an ideal relative humidity of 30 percent.

The plates should be rehoused in a preservation-friendly environment within archival housing material. The use of strong paper enclosures and storing plates vertically on their long edges provide the most support when placed in strong boxes or containers. Boxes with grooved separations that keep plates in individual slots minimizes contact and should be coated with polyurethane varnish if wood; enamel finish if steel. The boxes and envelopes that hold the glass plates should be labeled as “FRAGILE”, “GLASS”, “HEAVY”, and other cautionary terms to validate the contents.

B. American Repositories for Photographic Preservation

Photography has had a profound influence on American society and served as a direct aid to cultural nationalism. Photography allowed provincial Americans to see people and places they would never encounter in their ordinary lives. Having been introduced to the United States in the fall of 1839, the daguerreotype became an influential invention in preparing photographic portraits, those of which would become a commonplace object of middle-class life.


American institutions that house photographic materials, especially those of glass plate negatives, have been known to follow standards by the International Standards Organization, museum and government regulations, and other advisory boards in their networks. Some preservation efforts in museums are heavily based on a case-by-case basis rather than a step-by-step process.

Museums such as the George Eastman Museum in Rochester, New York, and the J. Paul Getty Museum in California provide workshops in their conservation laboratories for their members, which includes preservation efforts of glass plate negatives. Lectures and other programs are widely available, as well as pre-program conservation programs for the more advanced public.

i. The Northeast Document Conservation Center

The Northeast Document Conservation Center (NEDCC) is the first independent conservation laboratory in the United States to specialize exclusively in the conservation and preservation of paper, film, and photographic collections. Founded in 1973 as the New England Document Conservation Center, this Andover, Massachusetts-based organization was initiated due to the growing issues of paper deterioration in New England libraries, museums, and archives. In 1980, the New England Document Conservation Center evolved into the Northeast Document Conservation Center to reflect its expanded region, and has continued to welcome clients from all over the United States.

With respect to photographic conservation at the Center, the NEDCC performs treatment techniques of photographic processes from daguerreotypes to Kodak film and everything in

between. Various levels of conservation treatment are available on site and are dependent on the condition of the artifact, scheduled future use, storage or display conditions, aesthetic or historic content, predicted outcome of treatment, and the client’s budget. Common treatments may include flattening of rolled or distorted photographs, surface cleaning, removal of self-adhesive tapes, and disassembling of harmful mounts. Cosmetic treatments for works with aesthetic value are non-essential treatments and are performed at the discretion of the client. Stain reduction, removal of prior disfiguring restoration work, and in-painting are some of the many options related to cosmetic preservation. The NEDCC also provides framing and matting services for photographs, based on the Image Permanence Institute standards⁶⁰.

**ii. The National Archives and Records Administration**

The National Archives and Records Administration (NARA) has branches and centers throughout the United States, but is centrally located in Washington, D.C. There, the institution exhibits and houses the founding documents of the country, including the Declaration of Independence, the Constitution, and the Bill of Rights. Established in 1934 by President Franklin Roosevelt, NARA’s major holdings date back to 1775, and as a historical repository, the interest of the archivists is to keep federal records that have intrinsic value to the United States. Such holdings include maps, charts, photographs, and reels of motion picture film, which are preserved for long-term research needs.

NARA is host to a variety of conservation laboratories, including the Conservation Division and the Photographic Imaging, Microfilm and Textual Preservation Lab. The Conservation Division at NARA is responsible for the treatment of the Constitution, the

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Declaration of Independence, and other founding articles. These articles arrive to the Lab in many formats, including textual documents, photographs, posters, artworks, architectural drawings, and printed maps. The conservation staff members monitor environmental conditions in the facilities, assess the condition of the records, and identify their compositions in order to stabilize them. The Division is also responsible for creating custom housings for large and fragile objects.\textsuperscript{61}

The Photographic Imaging, Microfilm and Textual Preservation Lab provides appropriate digital and hardcopy products to assure access to NARA’s online collections. However, this branch of conservation is not readily available to serve the public, and rather, its main shareholders are internal government officials. They work to reformat and digitize materials directly for the clients they serve.

The general philosophy among those in charge of the National Archives and libraries is that an archival record should never be available for use, but rather, that copies or duplicates serve as the research or service object for individual utilization.\textsuperscript{62}

\textbf{iii. The Image Permanence Institute}

The Image Permanence Institute (IPI) is located on the main campus of Rochester Institute of Technology in Rochester, New York, and is a nationally recognized leader in the development and deployment of sustainable practices for the preservation of images and cultural property. As a separate department within the College of Imaging Arts and Sciences, the IPI

\textsuperscript{61} “Conservation Division.” \textit{National Archives and Records Administration}. National Archives and Records Administration. Web. 02 June 2017.

offers photographic consultation services to a variety of different individuals and institutions locally and internationally.

Founded in 1985 by James M. Reilly, the IPI is a nonprofit, university-based laboratory devoted to preservation technology and research for libraries, museums, and archive materials. Their areas of expertise lie in environment and collection management, imaging and information media, standardized testing, image stability, and preservation and sustainability of cultural heritage. The staff members of the IPI also cover the nature of other forms of print media and are knowledgeable about the development of ISO standards for imaging media, preservation, and sustainable environmental management. The IPI hosts a variety of educational and outreach programs that include workshops aimed at their areas of expertise, such as “Best Practices in Managing the Environment of Preservation”, “Developing an Environmental Monitoring Program”, and “The Effect of Environment on Collections Materials”

The IPI’s Media Storage Quick Reference (MSQR), is a research pamphlet the institute offers that includes answers to basic questions and advice for collectors. The pamphlet includes frameworks for media preservation based on structure, preservation issues and other concerns, as well as follow-up advice on how clients can store their products in an environmentally sensitive and protective way. The following tables are respective to tests the MSQR recommends for photographs, especially glass plate negatives.

<table>
<thead>
<tr>
<th>Room temperature</th>
<th>Fair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool temperature</td>
<td>Good</td>
</tr>
<tr>
<td>Cold temperature</td>
<td>Very Good</td>
</tr>
</tbody>
</table>

As the above table shows, storing plates in cool temperature environments ensures greater protection from image decay. Cold and frozen temperatures offer marginal benefits.

<table>
<thead>
<tr>
<th>Type of Decay</th>
<th>Media</th>
<th>Recommended Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Silver Image Decay</strong></td>
<td>Photographic glass plates</td>
<td>30%-50% RH</td>
</tr>
<tr>
<td></td>
<td>Black-and-white film</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Black-and-white photographic prints</td>
<td></td>
</tr>
<tr>
<td><strong>Glass Deterioration</strong></td>
<td>Photographic glass plates</td>
<td>30%-50% RH</td>
</tr>
<tr>
<td><strong>Layer separation</strong></td>
<td>Photographic glass plates</td>
<td>Minimal temperature and RH fluctuations</td>
</tr>
<tr>
<td></td>
<td>CDs and DVDs</td>
<td></td>
</tr>
<tr>
<td><strong>Mold</strong></td>
<td>All media</td>
<td>30%-50%</td>
</tr>
</tbody>
</table>

The above table represents the types of decay that photographic glass plates will suffer in poor environment structures. Also included is the recommended environment based on relative humidity (RH) and temperature controls. This table has been edited to reflect only the photographic glass plate negatives and shared media.64

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iv. Case Study: The Library of Congress

The Library of Congress, located in Washington, D.C., is notably the largest library in the world, containing millions of books, recordings, photographs, newspapers, maps and manuscripts, and provides obtainable research for those in the United States Congress. While the mission of the Library is to showcase American history, they also expand their knowledge to archival and preservation techniques that have aided in their approach of keeping historic documents preserved for generations.

In 1948, the Library acquired a collection of more than two-thousand photographs that captured scenes, people, and the views of villages and cities throughout the Russian Empire. The photographs, taken by Sergei Mikhailovich Produckin-Gorskii, were dated from 1905 to 1915 and revealed the everyday life of the Empire to educate Russian schoolchildren about their country. An extensive conservation procedure began in 2000 of the fourteen albums of monochromatic photographs produced by the glass plate negative process.

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According to the overseer of the project, most of the negatives that came to the conservation department did not require treatment and were housed in archival card sleeves. Seventy-five plates were cracked or broken and placed into custom-made housings that securely held the pieces together. A small number of plates were treated for flaking emulsion, an issue that was caused by exposure to water during storage before the collection’s relocation to the Library. To reattach the flakes to the glass, a local application of moisture by ultrasonic
humidifier was administered, and the flattened flakes were re-adhered to the plates by a combination of resin and solvent\textsuperscript{66}.

This collection and its preservation successes are an excellent example of how preservation and access can be undertaken to the best of both missions. Conservation rehousing and treatment ensures the long-term preservation of the collection, as damaging and inadequate materials are replaced with longer-lasting and standard-degree housings.

v. Case Study: The Smithsonian Institution

As the world’s largest museum, education and research complex, the Smithsonian Institution exists to preserve America’s heritage through centers of culture and learning. With nineteen museums and National Zoo based in Washington, D.C., the institution collectively houses 154.8 million artifacts and welcomes 29.3 million visitors a year\textsuperscript{67}.

Since 1916, five separate locations along the National Mall housed a collection of 2,300 glass plate negatives, all of which were images of cacti and dated between the years 1900 and 1916. The photographer of these plants was Dr. David Griffiths, a researcher for the United States Department of Agriculture. In 1905, he conducted a study to determine the potential value of the genus plant \textit{Opuntia}, or “prickly pear”, as a forage crop. Over the span of eleven years, he traveled the United States, collecting 6,000 specimens and photographically recorded them. Several of the glass plates that were sent to the central conservation lab at the Smithsonian were broken beyond printability and possible repair. Conservation intern Janelle Batkin became the assistant caretaker and preservation specialist of this collection in the summer of 2012.


The goal for the conservation of the collection of these glass plate negatives was to stabilize them and to ensure no further damage would occur. When they arrived at the Smithsonian Center of Archives Conservation in 1981, the negatives were housed in the original, acidic paper envelopes, so immediate removal of the plates from these enclosures was conducted.

As for loose glass fragments of the glass plate negatives, they were cautiously transferred to a piece of Mylar sheet atop a light-box, where the use of illumination below provided aid in assembling the pieces. Second to positioning the pieces in the proper order, the glass plate negatives were digitized with a flat-bed scanner, remaining on the Mylar sheet. Because dozens of small glass fragments cannot be physically scanned and produce an approximate digital copy, the high-resolution digital image will document the positive of the negative.

To rehouse the glass plate negatives, the negative is transferred to a custom-made sink-mat that contains ‘bumpers’. Sink-mat is a piece of acid-free cardboard that creates an indentation around the image to hold it securely. The ‘bumpers’ were used to ‘attach’ the fragments together without having the pieces rub against each other and create irreversible issues. To conclude, the sink-mat with the glass plate negative is housed in a flag-stacked position in appropriate boxes for permanent storage.68

vi. Case Study: The George Eastman Museum

George Eastman was the founder of the Eastman Kodak Company and was a patriarchal icon of modern photography in America. He moved with his family to Rochester, New York in 1860 and built his historic home at 900 East Avenue between the years 1902 and 1905. Today,
his home stands as the world’s oldest museum dedicated to photography and is a leader for film and photograph conservation. It is also renowned for its partnerships with universities such as the University of Rochester, the Rochester Institute of Technology, and Ryerson University, that provide advanced residency programs and other grant-funded educational courses. The museum also hosts a variety of classes that allows its members and the public to participate in introductory photographic preservation. 

As an Andrew Melon Fellow in the Advanced Residency Program in Photographic Conservation at the George Eastman Museum, Katharine Whitman conducted a case study that incorporated the preservation of a single broken glass plate negative. The eight-by-ten-inch plate, titled “Charlecote from across Avon”, featured an image taken in 1910 by Albany-native Catherine Weed Barnes Ward. The George Eastman Museum received the plate from Rochester’s Memorial Art Gallery in 1981, and it continues to reside in the 400,000-piece photographic collection.

Having been previously stabilized by a former member of the conservation department, Whitman was faced with issues regarding both support and binder. The six shards of the plate had been stabilized between two pieces of glass and bound with P-90 Filmoplast. A spacer, with a width of approximately 0.5 centimeters, was set between the glass and the binder side of the plate. The shards were placed in the glass sandwich in contact with each other, and thus resulted in binder loss and blind cracks. In removing the shards from the glass enclosure, discoloration and more binder loss was revealed, but the final image material was in generally good condition with some mirroring visible around the perimeter of the image.
Having removed the glass shards from the glass sandwich enclosure, Whitman placed the pieces carefully into a shallow box with the emulsion side up. The box was cushioned with Ethafoam and Teflon, both of which are strong, resilient and medium-density white polyethylene foam acceptable for the use of preserving historic objects. To begin treatment, Whitman cleaned the glass plate to remove the P-90 Filmoplast residue. The combination of ethanol and water both removed the adhesive and operated as a cleaning agent for the glass side of the plate. The shards were cleaned with acetone and inspected with a microscope to ensure a thorough cleanliness. To consolidate the lifting gelatin binder, impurities were coated with a small brush laden with two percent photographic grade gelatin and covered with a piece of silicone-release Mylar. The addition of gentle finger pressure and extra light weight was administered. To stabilize the blind cracks in the glass, warmed twenty percent B-72 in toluene, a synthetic resin, was applied with a steel wool swab. Blind cracks are defined as cracks that have not spread through the entire surface and have not broken the gelatin binder. However, they can pose a threat of further damage if not maintained immediately.

Assembling the pieces was the next call to action. In vertical formation, the shards were assembled with the help of a lightline and held in place with sticky wax. The lightline, a straight beam of light created by a fiber-optic array, generates a precise marking tool for more approximate assembling. Sticky wax is applied with a pin and warmed over the glass side of the shards. Along with the sticky wax, another application of B-72 toluene is added for sturdier support of the pieces.

After two weeks of curing, the sticky wax is removed with a heated scalpel and excess B-72 is removed. A secondary support of clear silicone is created with the repaired plate sealed atop a sheet of glass of equal size. A glass sandwich is produced with two sheets of framing
glass, both cut 0.5 inches larger than the image plate on each side, resulting in a final size of nine-by-eleven inches. Spacers, made of four pieces of Permalife paper, are placed around the perimeter of the emulsion side of the glass plate, and filler material made of Ethafoam is placed around the perimeter of the silicone and glass plate. In the end, the entire package is bound with P-90 Filmoplast\textsuperscript{70}.

C. Early Attempts at Gelatin Dry Glass Plate Preservation

The efforts for the preservation of gelatin dry glass plate negatives are expanding in a chemical nature, requiring expert photo-conservators to restore the photographs. However, in the early twentieth century, the degree of knowledge of advanced chemicals was low and machines such as humidifiers and other digital equipment had not been invented.

One of the earliest objectives of preserving photographs was to remove impurities, such as dirt and grease. A writer for the September 1917 issue of the \textit{Photographic Journal of America} suggested a rather odd solution for dirt removal: dough. A mixture of cold water and cheap flour kneaded until it no longer sticks to the fingers acts as an eraser for tough dirt, grime, and dust that could not be removed with a gentle rubbing with a soft rag or cotton wool. To remove grease, the application of benzole or ordinary petrol would remove stains and lift remaining dirt without harming the print\textsuperscript{71}.


It is not clear if Howard D. Beach preserved his own gelatin dry glass plate negatives at any time during his studio operation, but although the chemical sciences were still advancing at the time, common household objects could be used to preserve any photograph.
Chapter IV. Photographs and Pedigrees

State libraries and archives, along with many university libraries, have undertaken projects to identify, locate, and make genealogical materials available to the public. These include digitized newspapers, photographs, vintage postcards, sound recordings, and other resources. For years, genealogists have taken advantage of existing technologies and have applied them to their ongoing research. Many at-home researchers begin with the family tree and oral histories spanning generations, those of which are captured in family history books, photographs, microfilm, and audio recordings.

A. The Study of Genealogy with Photographs by Literature Standards

May Davis Hill, curator of photography at the Bentley Historical Library in Ann Arbor, Michigan, was one of the many contributors to the World Conference on Records in August of 1980. She presented her paper, “The Story Behind Your Photographs”, and reported that “photographs are more than mere illustrations of what some person looked like…photographs provide expanded information seldom available from other sources.” She suggests that the common man train himself to examine every detail of a photograph and not delve into what his eye sees first. He ought to dig a little deeper and go beyond the names and question the time-period the picture was taken, the relationships therein among the subjects, and the reason behind the photographic capture. When conducting genealogical research with the use of photographs, each photograph must be considered an original document of family history with potentially valuable information about the subjects. Within families, snapshot photographs can be ample due to the rising practice of photography by amateurs in the late nineteenth century and the ease of

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use of photography equipment, ie., the camera. This serves as an advantage in research as family snapshots often span over extended periods of time and chronicle the transition of family members, including aging, marriages, births, and other life events\textsuperscript{73}.

What most expert genealogists know to be overlooked by an amateur researcher is a small list of observations. First, the name of the photographer or photographic studio may not be mentioned or known to the relatives of the ancestors in the photograph. When cameras became easily accessible to the public, those who could afford the hobby would take photographs of their families without the financial burden of professional, private sessions. Second, the style of clothing can also be overlooked. Genealogists claim that by researching costuming and the time-period in which the style was common, an estimated year can be placed on the photograph. The style of dress can also reveal information about the ethnic origin of family members, and military uniforms with insignias, medals and badges can pinpoint a war, rank, and service of which the family member was a part\textsuperscript{74}.


The photograph above is a service portrait of Joseph Lewis Feigel, a flight instructor for the Royal Air Force during the Second World War. President Franklin Roosevelt introduced the Lend-Lease Program on January 10, 1941 which provided military aid to any country that was allied with the United States\(^7\). Thus, flying schools were assembled throughout the United States for British airmen to train without facing the horrible weather conditions and enemy attacks in

the home country. Feigel was stationed in Clewiston, Florida at Riddle Field. According to Jeff Barwick, a former curator at the Clewiston Museum, the insignia on the shoulder tops indicate his rank as Flight Officer for the Royal Air Force. This mirrors the rank of First Lieutenant in the United States Military. The badge over the left pocket is the Flight Wings; these were awarded to Feigel at his graduation from flight school.

Third, the style of hair or facial hair that a model possesses can illustrate two different things. One, the relative time in which the hairstyle was most prominent and popular, and second, the class system of which the ancestor was a part. A well-groomed and well-dressed male figure in photograph may illustrate that he was of a middle-to-higher class citizen. A disheveled, unkempt person may provide insight of the opposite. A fourth component that is often disregarded is recognizing familial bonds based on the models’ positions in the photograph. For instance, if a young child is seated on the lap of a young to middle-aged woman in the photograph, they may represent mother and child. A man standing behind a seated woman and her child may reflect that the man is the father and husband of the family, as his stance may be a metaphor for protection and dominance. The dominant figure can also be the central figure of the photograph, usually the mother, father, or most successful member of the family.

Whether the figures in the photograph resemble one another is a fifth factor that genealogists claim is unnoticed. If those posed in the photograph do appear similar in appearance, they may be of the same immediate family. If not, they may be less related in terms of extended family or friends. As common as it was for photographers to work indoors, there


77 Jeff Barwick (former curator) in discussion with the author, August 2017
have been times when photographs of family members were taken outdoors. Noticing the background of the picture may help conclude where the photograph was taken in relation to a city, landmark, or other structures that can tell where the ancestors originated from. Lastly, other objects in the photograph can tell the story of one’s ancestors. Family pets, automobiles, jewelry, and more can help define social status and wealth the ancestors belonged to.

Figure 10: "Easter Sunday at the Feigel Farm", 1941
Joseph Feigel in Royal Air Force African uniform, Mary Feigel-Welch, Frances Feigel-Schnarr, Frances Feigel, John Feigel
Photograph taken by Joseph Scharr
Digitized by author

Through oral histories it is known that the above photograph was taken on Easter Sunday in 1941 at the Feigel farm. It is known who is in the photograph and their relationship to one

another. To discuss the factors in reading a photograph for genealogical research, the above photograph is a prime example that includes all overlooked observations. First, the style of clothing worn by the figures in the photograph depicts a special occasion. The women wear dresses and skirts, and one brother wears a jacket and dress pants as the older one dons his military uniform.

The central figure in this photograph appears to be the eldest woman, Frances Feigel. Of the family, she is the mother to the other persons in the pictures. Joseph Feigel, on the far left in the photograph, has his hands clasped behind his back, standing professionally to illustrate his overall demeanor, while his brother John casually has one hand in his jacket pocket.

The “Feigel nose” is a prominent feature that can be seen on all subjects in the photograph. A wide tip and narrow bridge are two characteristics of the nose that genetically runs in the family. And lastly, though the location is known, the building that the figures stand in front of appears to be a ranch-style home with a water pump on the far left.

**B. American Repositories for Genealogical Research**

Genealogical research begins with four steps: getting organized, talking to family members, searching the United States census, and searching for vital records. The information stored within community libraries in relation to genealogical research can be ample, but those registered with online genealogical resources, such as Ancestry, develop discussions, classes, and panels to inform the public on how to conduct genealogical research with the use of online databases.

**i. The National Archives and Records Administration**

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The National Archives and Records Administration (NARA) is not only known for exhibiting and preserving national historic documents, but provides information with respect to genealogical research. Throughout the nineteenth and early twentieth centuries, genealogical repositories throughout the United States suffered fires and other natural disasters, and in 1934, historical organizations such as the American Historical Association lobbied for the creation of a facility to store genealogical government documents. Along with two archives buildings in Washington, D.C. and College Park, Maryland, eleven states throughout America are home to NARA’s regional branches that provide genealogical societies and libraries.

Of these regional branches, genealogical holdings are ample. They include federal census records, passenger manifests, naturalization records, military records, freedmen’s records, and Native American records. Genealogy guides can be found in print and online at NARA’s website, and two searchable indexes of genealogical holdings that they provide to the public.

The first database that NARA provides for genealogical research is the Archival Research Catalog, or ARC. ARC is an online catalog that links researchers with federal records held in the Washington, D.C. repositories, regional branches, and presidential libraries. As of 2008, this database remained incomplete, supplying fifty percent of NARA’s complete records. Of the available information, ARC is linked to digital copies of NARA’s records and holds data about individuals who were not well-known. The second database is Access to Archival Databases (AAD), and much like ARC, this database will link to digital copies of NARA’s records. AAD is a tool for searching records that were both born digital and digitized. This repository contains 475 databases, some of which contain digitized WWII enlistment records.

In a digital project collaboration, NARA teamed with Footnote.com to ensure more record availability at NARA’s regional branches. Footnote digitizes record sets from NARA and
NARA in turn is given free access to the Footnote database. Today, Footnote is known as Fold3 by Ancestry, and continues to collaborate with NARA to digitize historical records from all eras in American history.

ii. The National Genealogical Society

Another American repository for genealogical research is the National Genealogical Society. Located in Arlington, Virginia, the non-profit society’s mission is “to serve and grow the genealogical community by providing education and training, fostering increased quality and standards, and promoting access to and preservation of genealogical records.” The organization fulfills its mission by providing both member-only and non-member online courses on how to conduct successful genealogical research. Some of the titles of these courses include “Introduction to Civil War Research”, “Genetic Genealogy”, and “Researching Your Revolutionary War Ancestors”. The National Genealogical Society also offers subscription-based periodicals such as the National Genealogical Society Quarterly and special publications that pertain to genealogical resources in individual American states. History conferences, research trips, and family reunions are events that they hold throughout the year that allows researchers the chance to dive deeper into their history and familial roots.

iii. National Society Daughters of the American Revolution

The National Society Daughters of the American Revolution (NSDAR) is an all-female, non-political volunteer service organization whose members all claim lineal descent from

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American patriots who served during the American Revolution. Founded in 1890 and incorporated by Congress in 1896, the institution houses a museum, library, and archives department to educate, establish patriotism, and preserve historic documents.

With respect to genealogical research, members of NSDAR must be able to provide proof that their ancestors were a part of the fight for independence, may it be through historic documentation or word-of-mouth oral traditions. NSDAR supports genealogical research by providing volunteer assistance for individuals, including a variety of free databases on their website, and hosting membership-only events in identification of family members in photographs and paintings.

iv. The Family History Library

Family history holds a major place in Mormon theology. Mormons believe that church members can convert their dead ancestors to the Mormon faith, and thus, church members conduct genealogical research for religious purposes. The Library was established in 1894 under its former name, the Genealogical Society of Utah. At that time, the Society housed a small library that collected published family histories and other reference materials. In 1938, the library began to microfilm original records held by other institutions and sent experts to repositories worldwide to photograph genealogical documents. In 1987, the Genealogical Society of Utah was renamed the Family History Library (FHL) and remains in Salt Lake City. The FHL holds a massive collection of published and unpublished genealogical material, in addition to 2.4 million reels of microfilm, 310,000 books, and 4,500 periodicals.

On their website, the FHL provides online databases for genealogical researchers to add, download, and purchase familial submissions. The International Genealogical Index, or IGI, is a database that holds compilations of extracted names from FHL’s collection of microfilm and allows researchers to contribute their own genealogical information, leading them to original source records. In 2008, the IGI stored 400 million entries, which were primarily birth and marriage records from 1550 to 1885. The Vital Records Index (VRI) is similar to the IGI in that it too extracts genealogical information from microfilmed manuscripts held by the FHL. However, most of the information stored on the VRI is accessible only by CD-ROM, which the FHL provides for a fee on their website. The Ancestral File at the FHL was a collection of electronic pedigree charts submitted to the FHL, but was created with unverified material from unknown sources. The FHL employed the database from 1989 to 2001, when it was replaced with the Pedigree Resource File, which is also available only by CD-ROM.

As technology continues to advance and provide wider access to genealogical information, the FHL has scheduled projects to correlate with the newer resources available. In 2008, the FHL announced a major digitization program titled Project Scanstone, which will provide digitized copies of their microfilms and make them accessible on the web. More name extraction and software invention is projected to occur at the Library, and the introduction of a new software called Record Search will allow researchers to view all digital components of the Library, from microfilm to photographs and manuscripts83.

C. Families in the Beach Studio

During his studio’s operation, Howard D. Beach photographed thousands of subjects, including family portraits and children. He built relationships with his clients, and in due time, photographed multi-generational families. He photographed his wife, Catherine and their daughter Margaret, documenting their relationship as mother and daughter. Beach also included servicemen in uniform in his portfolio, as well as Native Americans from the Pan-American Exposition in their cultural dress.\textsuperscript{84}

Determining familial relationships from photographs can be a separate aspect in genealogical research, or not included at all. The latter can be due to lack of photographs from the ancestor’s life, and may be supplemented with civic records, military accounts, and other primary documentations.

\section*{Chapter V. The Preservation and Genealogical Research of the Howard D. Beach Studio Collection of Glass Plate Negatives}

At the start of the twentieth century, Buffalo, New York began to play a significant part in establishing photography as an art form. The Photo-Pictorialists, a group formed in 1906, included eight men who shied away from the more traditional Buffalo Camera Club techniques to create their own form of art photography. Their arm was to utilize soft-focus carbon and

platinum prints for their portraits, landscapes, and still lifes. One of these members was the photographer, inventor, and artist Howard D. Beach.

![Figure 11: Howard D. Beach (1867-1954) "Beach Office 1919"
Courtesy of The Buffalo History Museum](image)

Beach was born in New Britain, Connecticut in 1867 and moved to Buffalo, New York in 1884 to apprentice under the photographer Andrew Simson. Simson was notably “Buffalo’s oldest photographer”, and was accredited to the photographic documentation of the Pan-American Exposition of 1901. Simson and Beach worked together in partnership in 1896, as Beach continued his studies in chemistry and photography at local colleges.
In 1900, Beach purchased the remainder of Simson’s interest in the “Simson and Beach” photography studio and opened his own at the same location, 456 Main Street in Buffalo. In 1908, Beach bought photographer Eleck F. Hall’s studio, and moved his business to 469 Virginia Street. Hall continued to work at his studio until 1913 when Beach took over the remaining building. Beach often photographed famous and the wealthy Buffalo community. He also invented a variety of assorted products including the universal-focus lens.85

A. Case Study: Selecting Glass Plate Negatives

As enrolled in professor Wiedemer’s Digital Museum Collections class, I, among peers, was introduced to the Howard D. Beach Studio Collection of Glass Plate Negatives. This collection was stored in the basement of the Reinstein building, a turn-of-the-century home owned by The Buffalo History Museum. The plates were stored in their original glass plate manufacturing boxes, some of which were dirty, old, and water-damaged. The use of particle masks and gloves was encouraged as transportation of these boxes was conducted to the first floor.

Once in the desired space, the contents of the banker boxes were laid out on a large work table. The old, deteriorating dry glass plate negative boxes each held a different amount of glass plates of varied sizes and subjects. These subjects ranged from studio portraits of families to onsite school groups; to soldiers in uniform, exterior shots and historic documents. We were encouraged to choose between eight and ten plates to begin with, focusing on a theme within the plates. I chose to work with portraits of children ranging from newborns to fifteen years of age, cautiously selecting plates with a sole child or a small group of children. The reason for this was

due to the challenge of identifying children during the early twentieth century, and being aware that the collection held a photograph of an eleven-year-old F. Scott Fitzgerald, I hoped to discover more of him.

After selection, cleaning was done. Given limited supplies: anti-static brushes and a portable HEPA vacuum with a screen overlay, our only concern as young professionals was to remove surface dust and dirt. We were also made to record any scratches, chips, and damages to the emulsion side.

One plate I worked with contained a slab of dry red paint that coated the emulsion side. The paint was strategically placed around the image of the child’s head, resembling a halo-like anomaly. A few theories surrounding the addition to the plate were mentioned, ranging from an early “photoshop” edit to a cropping mechanism for use in a small frame or locket.
After the maximum amount of cleaning could be done on the plates, the photographs were digitized with a light box and a Nikon camera supported above. Both plate and catalog card were photographed and uploaded to Dropbox for student accessibility. The digital negative image was converted to a positive gray-scale image using Adobe Photoshop and saved as a TIFF file. The digitized plates were then housed in previously marked white acid-free archival envelopes and stored.
B. Case Study: Genealogical Research

Beach had recorded meticulous notes in a card catalog in regard to his clients, including names, dates, and plate numbers within a handwritten card catalog system. The system had been digitally remastered on a Microsoft Excel spreadsheet to deter issues in deciphering Beach’s handwriting and for continued future use. My colleagues and I worked with both the spreadsheet and the card catalog, as the spreadsheet did not hold all records and was still being created. Collected from the card catalog and spreadsheet was the name associated with the photograph, the date it was taken, the photographer and the type of print ordered.

Figure 13: Card Catalog Entry for Katharine and Howard Bissell
Photograph by Noelle Wiedemer
Courtesy of The Buffalo History Museum

After collecting the information from the card catalog and matching it with the spreadsheet, research of the child or children in the photographs commenced. Many resources
were available: The Buffalo History Museum Research Center and the Buffalo & Erie County Public Library’s Grosvenor Room were repositories for primary sources including local histories. Journals, address books, deeds to homes, marriage and death certificates, and other newspaper clippings were readily available. Both the Research Center and the Grosvenor Room had card catalog systems, alphabetized by last names and businesses, that would link to page numbers of journals and newspapers on file for additional information.

The Grosvenor Room at the Public Library was home to the Local History Department, providing its patrons with access to genealogical websites via subscriptions. Ancestry, a notable genealogical website equipped with family trees, digitized materials such as photographs and draft cards, was selected in my research as secondary source research materials. Other sources such as microfilms, local history scrapbooks, military histories and rosters, and how-to books were also used in the Grosvenor Room.
For example, Grosvenor William Bissell, as photographed above, was roughly three to four years of age when he posed for this photograph in 1919. As his position suggests, the calm clasping of his hands resting in his lap provides a comfortableness, and his folded legs are viewed as a natural position. Due to the findings of my research through Ancestry, local history
scrapbooks, and Old Fulton Postcards, Bissell was the son of a bacteriologist and a housewife, and would later become an assistant professor of medicine at the University of Buffalo\textsuperscript{86}.

Below, brother and sister duo Katharine and Howard H. Bissell, Jr., ages eight and five respectively, are seated together in a comfortable position to suggest their familial relationship. Born to a banker and the step-daughter of a well-known insurance broker, the two children grew up on Hodge Avenue in Buffalo, New York. Howard Jr. became a graduate of Yale and was wed to Maria Love Cary, also a native of Buffalo. Katharine was presented at dances by her parents, hosted memoriam tea parties, and was married to Elisha Perkins Dodge of Boston, Massachusetts\textsuperscript{87}.


As my research suggests, there is no indication that these three children were biologically related.

C. Case Study: Interpretation and Analysis

To present the research collected, I created an online repository that included the digitized images of the glass plate negatives and corresponding historical information regarding name of the subject, the subject’s life in Buffalo, family members, and where they are laid to
rest. Some photographs did not have biological information available, which may have concluded that the subjects in the photographs were children of families passing through Buffalo, or, as with the case of Edward Hubert Butler, III, passed away shortly after the photograph was taken. Another reason some information may have not been available was due to incorrect deciphering of Beach’s handwriting by researcher or recorder when copying information onto the Microsoft Excel spreadsheet. However, those whose stories were told on the website have provided life-long services to the city during the twentieth century and beyond.

Figure 16: Online repository created by author to showcase digitized glass plate negatives and biographical information researched. Screen capture of howardbeachphotos.weebly.com

D. Case Study: Future Work

In the summer of 2016, the Howard D. Beach Studio Collection of Glass Plate Negatives was moved to the SUNY Buffalo State College Butler Library for higher quality preservation attempts and updated storage conditions. Training workshops and detailed preservation procedures continue to be offered for Museum Studies faculty and graduate students at the
college. Through volunteer work and hands-on learning, the Howard D. Beach Studio Collection of Glass Plate Negatives continues to be cleaned, rehoused, digitized, and identified.

**E. A Contemporary: The William R. Gray Studio of Glass Plate Negatives**

Howard Dwight Beach may continue to be a name not widely recognized in the United States, or even Western New York, but the impact he made as a commercial photographer, inventor, and artist remains notable throughout Buffalo, NY. The Howard D. Beach Studio Collection of Glass Plate Negatives is possibly the single largest surviving collection of glass plate negatives from the early twentieth century, and were produced in the last extant commercial portrait studio that opened during Buffalo’s golden years.

Beach became an accredited photographer for the Pan-American Exposition of 1901, and invited Native Americans who participated in the Indian Congress exhibit to his studio to photograph them. Studio portraits of Native Americans were rare at the time, and Beach collected images from forty named individuals of Native Americans. He was also known to use the art of photography as a Photo-Pictorialist to appeal to the emotions and nostalgia of clients, affirming familial lineage through portraits of children and multi-generational relationships.

As Buffalo State College has been granted accessibility to these glass plate negatives for practice of photographic preservation with the help of library staff and professional conservators, there are other collections throughout the United States that have been unearthed and served as materials for volunteer preservation efforts.

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A contemporary of Beach, William R. Gray, also worked as a commercial portrait photographer around the same time. Gray worked out of his portrait studio home in St. John, Kansas, documenting life in central Kansas in the early years of the twentieth century until his death in 1947. His collection of over twenty-nine thousand glass plate negatives is notably the largest collection specific to one geographical location. His subjects ranged from families to individuals, named and unknown.

Figure 17: William R. Gray (1865-1947)
“Miller and Manderscheid families – Mr. and Mrs. J.W. Miller’s family including a little boy, a little girl and a baby are on the right, and Mr. and Mrs. E.J. Manderscheid’s family including a little boy and baby are on the left”, 1906
Courtesy of the Stafford County Historical Society
In 1986, Gray’s daughter Jessie donated her father’s work to the Stafford County Historical Museum in Stafford, Kansas. Like Beach, Gray numbered most of his negatives and kept meticulous records with dates the photograph was taken and the name of the client who ordered the photograph in eleven ledgers. With financial grants from the Kansas Humanities Council, the Midwest Energy, Inc., the Walmart Foundation and the Golden Belt Community Foundation, the museum raised the necessary funds for archival cleaning and preservation materials.
The preservation techniques differed from those of the Beach collection. With the help of volunteers, the emulsion side of the negative would be brushed with an anti-static whisk brush, and shiny glass deterioration would be washed with a cotton ball dipped in distilled water. After the negative dries, it would be assigned a new catalog number and inserted into an acid-free four-flap folder and placed in an acid-free archival box. Digitization methods are also applied through a collaboration with the Fort Hays State University’s Forsyth Library in Hays, Kansas\textsuperscript{89}.

\textsuperscript{89} Hathaway, Michael. "Windows to the Past: The Story of the Gray Studio Glass Negatives."
F. A Reflection

To reflect on the work completed for the class, there was nothing I enjoyed more than selecting the plates and researching the child posed in the image. I have always been fascinated by genealogical research and taking time to put the pieces together in order to identify the subjects. I personally believe that making the time to learn about individuals who either originated or passed through a specific location, gives a sense of what life was like during that time period. It is looking at a glimpse of history, of recognizing our ancestors, at any age, and determining their place in the fabric of time.

Chapter VI. Conclusion

Photography was introduced in 1839 as the result of a chemical experiment including chemical compounds and a direct light-source. After the success of the daguerreotype, inventors worldwide competed to create a better and faster way of taking a photographic image. As chemical knowledge soared with the collaboration of new discoveries and apprenticeships, advancements in the practice were made, from using surfaces of stone to glass plates, to cutting exposure times in half, to differentiating the professionals from the amateurs.

Collecting portraits of family members, celebrities and other personnel grew with the interest in photography and the way the models were captured in a precise moment. From snapshots to professional studio portraits, these collectables were made historical documents at the time of capture. It is more than important to have the right equipment and knowledge to be able to preserve all photographs for purposes that photography was made for; to capture a still image of a point in time.

To reflect upon the case study involving the preservation and the genealogical research of the Howard D. Beach Studio Collection of Glass Plate Negatives, the knowledge gained from this experience undoubtedly will continue to grow within more students and faculty at Buffalo State College for years to come.

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