

DOUBLE VISION

Seeing the World in Stereoscopic View





*Made possible by the collaboration of
The Public Library of Cincinnati and Hamilton County
and the University of Cincinnati Libraries.*



Visit ThePreservationLab.org for more information.

CONTENTS

Introduction.....	5
The Lab.....	6
Conservation of Books, Paper, and Photos.....	6
Causes of Damage.....	7
Examination of the Photographs.....	8
Description.....	8
Types of Stereoview Photographic Papers.....	10
Condition.....	13
Treatment of the Photographs.....	14
Surface Cleaning.....	14
Tape Removal and Mount Repair.....	15
Torn Paper Repair and Fill of Photographic Loss.....	18
Digitization of Steroscopic Slides.....	19
Rehousing the Stereoview Photographs and Original Boxes.....	21
Additional Examples of Stereoviews.....	22

INTRODUCTION

As the world swiftly leaves behind the golden age of photo snapshots and albums, preferring digital cameras and now smartphones to capture photographs, take a step back in time and look at one of the most fascinating and innovative accomplishments in photographic history—the Stereoscopic Slide.



Immensely popular in the early 1900s, stereoscopic slides were often made as the result of world travelers taking snapshots of exotic international destinations. Stereoscopic photography became known as the world’s “first visual mass media.” In this exhibit, we explore the history, production, conservation and digitization of Stereoscopic slides from the collections of the Public Library of Cincinnati & Hamilton County. A special focus on the work of the Public Library of Cincinnati & Hamilton County’s Conservation Lab and Digital Services will reveal modern preservation and digitization techniques, while sharing the historic beauty of the world’s first large-scale foray into 3D visualization.



Beginning in January of 2012, the Public Library of Cincinnati and Hamilton County (PLCH) and University of Cincinnati Libraries (UCL) began a long-term collaboration to provide conservation and preservation treatments in an

equally-managed, staffed, and equipped preservation lab situated on the University of Cincinnati's main campus.

The Preservation Lab performs a variety of treatments on a wide range of damaged materials in order to increase their longevity and make them usable to scholars.

Conservation of Books, Paper, and Photos



Library collection materials treated at the Preservation Lab include archival documents, historical photographs, works of art on paper, ancient manuscripts, architectural drawings and maps, parchment, printed books and photograph albums.

Causes of Damage

There are four basic categories of damage to library materials. These include damage by inherent vices, environmental conditions, handling, and storage.

Inherent Vices

If a material is made with an unstable component that has a tendency to chemically deteriorate, it is considered to contain an "inherent vice."

For example, cellulose acetate films break down over time and release acetic acid gas that smells strongly like vinegar. Therefore, cellulose acetate film at this stage of deterioration is known to have "vinegar syndrome." Unfortunately, there is nothing that can be done to stop this deterioration from occurring, however, storing these materials in a cool temperature helps to slow down the degradation process, thus extending the "life" of these films.



Environmental Conditions

As described above, temperature plays a big role in the rate of chemical decay, especially of organic materials. So does humidity. Materials deteriorate faster in warm and moist environments; therefore, it is better to store materials in cool and dry conditions.



Insects also play a big role in damaging library materials. Silverfish, beetles, and

THE LAB

book lice are all threats to paper-based collections because they eat cellulosic material which leaves holes in the paper. Often, books will have worm-like holes that are created by beetle larvae which have been given the misnomer of “book worms.”

Handling

The way materials are handled by scholars and staff affects their condition. Spines on books fall off if they are not pulled carefully from the shelf, book covers become detached, paper can tear, and materials that are taped or placed in a dirty environment can become stained.

Storage

Materials should be stored with regard to their inherent vices.

For example, handwritten manuscripts sometimes contain inks made out of iron gall. Iron gall ink is a problematic medium because the iron in the ink can corrode. This corrosion can disintegrate paper. Luckily, because conservators know that corrosion occurs in the presence of water, we are able to reduce the chances of corrosion from occurring by recommending manuscripts be stored in a dry environment with low relative humidity.



On the other hand, environments with too low of humidity can be problematic to materials such as parchment covered books. Parchment collagen shrinks and becomes stiff at relative humidity lower than 20%. The low moisture content in the vellum causes the cover boards to distort and curl.

EXAMINATION OF THE PHOTOGRAPHS

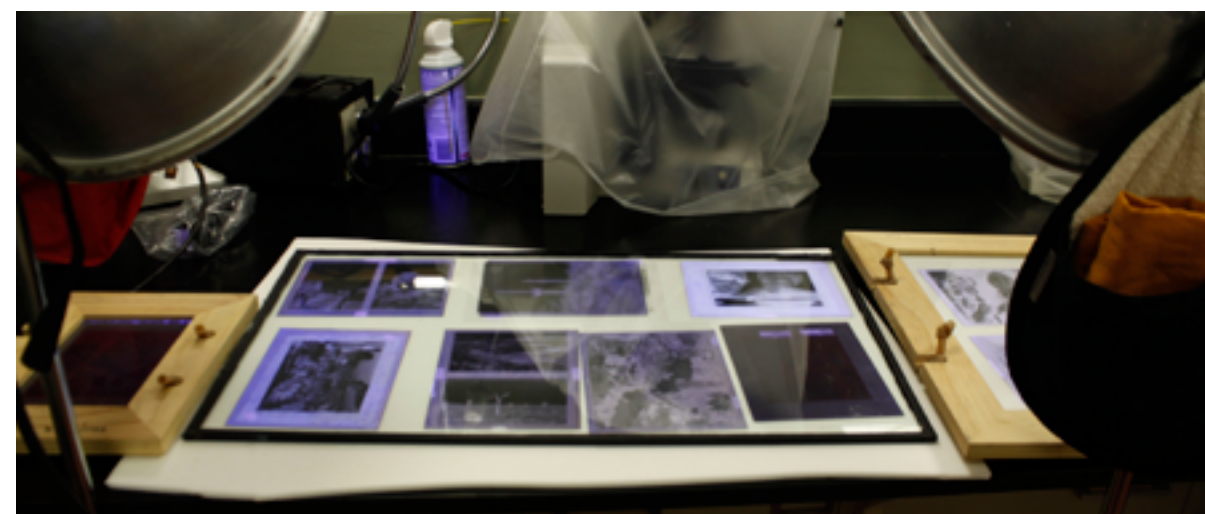


Description

Stereoview photographs were a popular form of entertainment in the late 1850's until the 1920's, much like watching TV today. Many subjects were photographed, and stereoviews became a big business. Stereoviews have a longer history of popularity than any other type of photography. In the 19th century,

stereoviews could be purchased out of catalogs, and many stereoview cards contain catalog reference numbers for ordering. Because so many stereoview cards were produced and purchased, many stereoview images have survived. Stereoview photographs are especially important to a library or museum collection because they are often the only surviving image we have of a particular subject.

During this period, stereoview photographs were printed using the “printed out process.” The printing out process is when a light sensitive paper is placed in contact with a negative and is exposed to the sun (or another bright ultraviolet radiation source, as shown below).



EXAMINATION OF THE PHOTOGRAPHS

Later in the 1890's, new types of Developing Out Papers (DOP) improved the speed of printing because they could be developed in a dark room, as opposed to contact printing in the sun. DOPs are now the standard we use in film photography today.

The printed out paper photographs were then mounted to thick boards that were slipped in front of the stereoviewer lens.

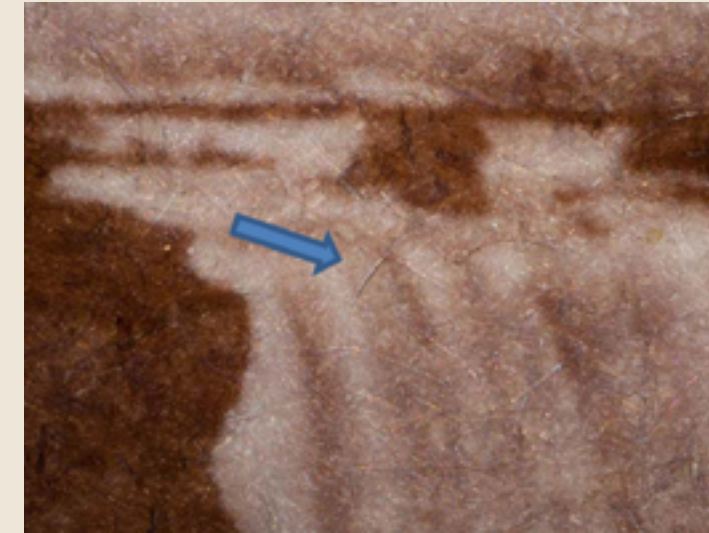
Types of Stereoview Photographic Papers

Identifying the types of the stereo view photographic coatings is extremely important when cleaning and conducting tape removal on photographs. Using a variety of techniques, a conservator conducts testing and analysis to identify the emulsion coating on a photograph before performing aqueous or solvent based treatments. This is because different types of emulsions react differently to water and solvents. Some emulsions, such as an emulsion with a collodion binder, may even permanently dissolve in the presence of solvents. Therefore, careful examination was conducted under the microscope before using a solvent to remove tape adhesive from one of the photographs.

Early images were printed onto photosensitive papers coated with egg whites, salt, and silver nitrate. These types of egg-coated papers were invented around 1860 and are referred to as albumen photographs. This type of photographic paper became very popular because photographers could purchase the paper pre-coated. Because of their popularity, millions of eggs were used annually to meet the demands of the photograph industry. So much so that manufacturers began to advertise that "no blood eggs were used in the making of their paper."

Later in the 19th century, stereoviews were printed onto papers that were coated with collodion emulsions and gelatin emulsions.

EXAMINATION OF THE PHOTOGRAPHS



High magnification detail of Niagara Falls in an albumen coated photograph, courtesy of GraphicsAtlas.org

In this detail, you can see paper fibers through the photographic emulsion. Visible paper fibers are an indication of an albumen binder.



High magnification detail of a gelatin coated photograph, courtesy of GraphicsAtlas.org

In this detail, the paper fibers are not visible under magnification.

Another clue to identifying a particular material is through a material's characteristic deterioration.

EXAMINATION OF THE PHOTOGRAPHS

Collodion photographs can sometimes be identified by discovering a specific type of emulsion loss that appears as white scratches, as shown below.



High magnification detail of a collodion coated photograph, courtesy of GraphicsAtlas.org

In this detail, characteristic white scratches indicate the emulsion is collodion.

Historically, stereoview photography is black and white. While some photographs appear to be color images, they are actually black and white photographs with hand coloring, as shown below.



CONDITION



The stereoview slides were received by the lab in their original storage boxes. The original boxes were worn, made out of acidic board and were dirty requiring the stereoviews to be rehoused.

Due to the accumulation of settled air pollutants over time, such as black coal dust, as well as grime from handling, the stereoview photographs and mounts were coated overall in dirt. Generally, the photographs were in decent condition aside from surface dirt, with an exception of a few. There were approximately six stereoview slides that suffered from one or all of the following condition issues:



Tears in the photograph and delamination of the photograph from the mount.



Overall dirt and grime obscuring the image.



Previous repairs with yellowed pressure sensitive tape and broken mount.

TREATMENT OF THE PHOTOGRAPHS

At the request of the Popular Library Librarian, David Siders, a collection of stereo-view photos were cleaned and re-housed at the Preservation Lab in preparation for exhibition and long-term storage. To protect the photos, Preservation Lab technician Chris Voynovich, cleaned over 600 stereo-view photos and re-housed the original fifteen boxes of stereo-view images into three acid-free enclosures.

Surface Cleaning



To remove loose overall dirt that might be easily transferred to fingers during handling, the photographs were first cleaned with a vulcanized rubber sponge that gently lifts away dirt particles and traps it within the sponge.

Next, the photographs were dry surface cleaned using white vinyl eraser crumbs. This method of cleaning gradually removes more fixed dirt without creating harsh light and dark areas that are sometimes formed when erasing with a block eraser.



TREATMENT OF THE PHOTOGRAPHS



Photographs that suffered from engrained dirt and grime were cleaned with cotton swabs dampened with filtered water to reduce dark staining.

Aqueous surface cleaning conducted by technician Chris Voynovich.



Tape Removal and Mount Repair

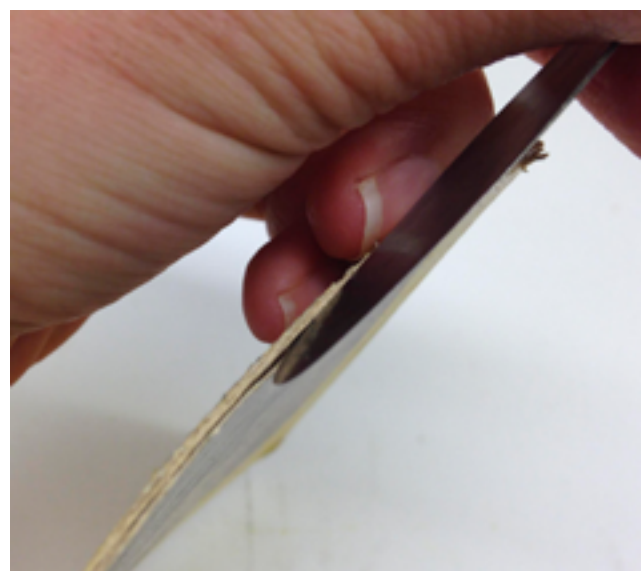
First, the plastic tape carrier was removed by softening the tape adhesive using localized heat from a Zyphyrtonics



TREATMENT OF THE PHOTOGRAPHS



air pencil. This tool allows a conservator to direct a small stream of heated air to a specific spot without causing over-drying of the entire photograph. Additionally, this tool has a variable heat dial to control how hot the air pencil gets. Once the tape carrier was removed, the adhesive residue was reduced by rolling cotton swabs, dampened with 50% ethanol in water, over the photograph.



After the tape carrier was peeled away, it became apparent that the stereoview mount was taped together because the mount was completely broken in half. Once the tape was removed, there was nothing to hold it together. Therefore, the mount was then repaired to re-join the detached parts.



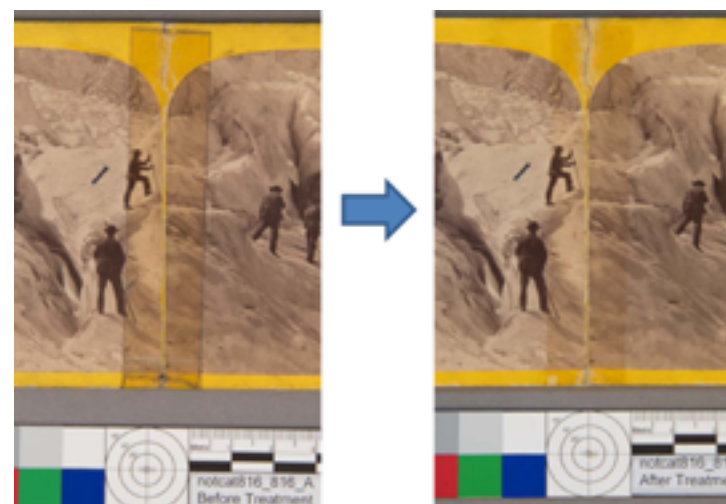
To repair the mount, a shim needed to be inserted inside the board to bridge the break. To insert a shim, a thin and sharp spatula was carefully inserted along the broken

TREATMENT OF THE PHOTOGRAPHS

edge of the mount to separate layers of the board. Once separated, a pared piece of archival, 20-point library board was adhered inside one half of the broken mount with Poly Vinyl Acetate adhesive and allowed to dry under weight.

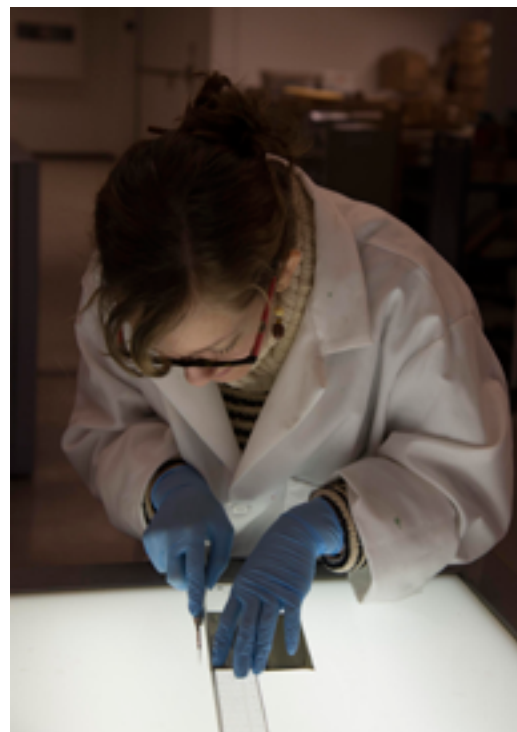


Next, the shim was inserted between layers of board along the other half of the broken mount. A protective layer of spun polyester was laid over one half of the photograph to protect it from adhesive. Poly Vinyl Acetate adhesive was fed inbetween the layers of the mount and shim with a spatula, and the mount was dried under light weight.



After treatment, the stereoview slide is now stable to handle. Also, the tape carrier and reduced tape adhesive will not cause further staining and damage to the photographic emulsion.

TREATMENT OF THE PHOTOGRAPHS



Torn Paper Repair and Fill of Photograph Loss

To treat this stereoview photograph, first the photograph and mount were surface cleaned as described before. Because the photograph was fully delaminated from the mount, the tear in the photograph was repaired from the back with wheat starch paste and a thin Asian paper called Uso Mino tissue. Asian papers such as Uso Mino are extensively used in conservation due to their long kozo fibers that gives the paper its strength. These strong papers are also manufactured to be very thin which makes them an ideal repair paper.

Once the photograph was pasted together, the loss along the upper left hand margin was filled. To fill, a thicker kozo fibered paper was toned with watercolors to blend into the blue tone of the hand-colored sky.

Using a light table, the toned paper was trimmed to fit the area of loss. The fill was then adhered to the photograph with Uso Mino tissue and wheat starch paste.



The repaired and filled photograph was then adhered overall to the curved mount with wheat starch paste. It was dried overnight to the concave shape of the mount under light weight.

DIGITIZATION OF STEROSCOPIC SLIDES

The Public Library of Cincinnati & Hamilton County is proud of its Virtual Library and Digital Services Department. Digitization expands the reach of our collections to customers everywhere. Providing a high-resolution image of an object, sometimes called a *digital surrogate*, can also reduce potential wear on fragile materials by allowing some customers to view a digital version of the object instead of the original.

The Library's Hasselblad H4D medium format camera is used to photograph objects, generally in a studio setup similar to the one shown here. Typically, multiple photographs are taken of an object, and the best images of the group are later selected for further editing.



DIGITIZATION OF STEROSCOPIC SLIDES

Experiments and test scans are often necessary before beginning a digitization project. For example, in the test scan shown here, it was discovered that the direction that the cards were placed on the scanner bed made a significant difference in the amount of glare that appeared on the resulting images - cards laid lengthwise resulted in much better scans than laying the cards parallel to the light source from the scanner. For this project, the lid of the scanner was also kept open during scanning, to avoid putting any pressure on the stereoviews' curved card mounts.

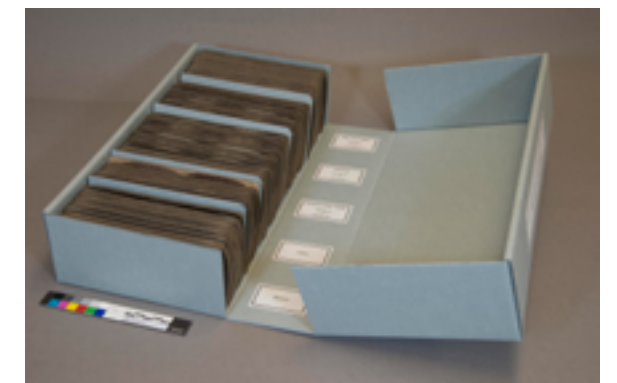
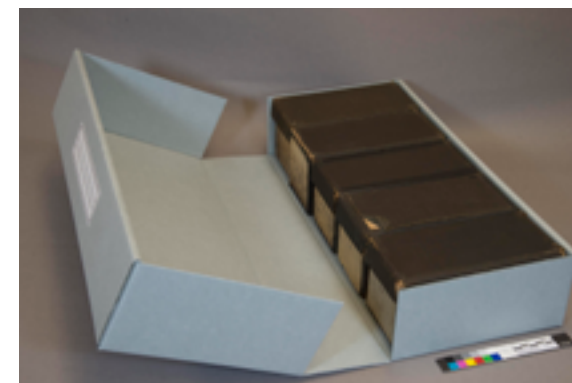


REHOUSING THE PHOTOGRAPHS & BOXES

Rehousing the Photographs and Original Boxes

Because the original boxes contained handwritten inscriptions and were important to the provenance of the stereoviews, the original boxes were repaired and saved. Because the original enclosures were acidic, they were stored separately from the photographs and placed in custom-made corrugated clam shells.

Lifting areas of cloth and delaminating paper labels on the original boxes were re-adhered back into place. A total of five corrugated clam shells were constructed by technician, Chris Voynovich.



ADDITIONAL EXAMPLES OF STEREOVIEWS

We in the lab really enjoyed viewing these fascinating photographs and hope you do too!



ADDITIONAL EXAMPLES OF STEREOVIEWS




ADDITIONAL EXAMPLES OF STEREOVIEWS



ADDITIONAL EXAMPLES OF STEREOVIEWS



Additional cards not currently on display can be viewed at CincinnatiLibrary.org/VirtualLibrary



“A new feature in the Children’s Room is the use of nickel-in-the-slot machines as educational engines. Mr. Frank B. Wiborg, at Christmas time, made a gift of \$100.00 to the room. With part of this money some stereoscopic views were bought. As it would be impractical to leave these loose on the tables to be looked at by children through hand stereoscopes, some means was sought by which a series of a dozen or more views could be turned over in succession in a properly lighted instrument. In the loft of one of the dime museums of the city were found some discarded slot machines, which with slight modification were made serviceable. For these the balance of the money was expended. It was only necessary to widen the slot so as to allow of the passage of a slug thicker than a cent or a nickel, and have made a supply of thick slugs which could be used in the library machines and not in the museum machines. These slugs are given out to the children on request, and the requests come so rapidly that the six machines are generally surrounded by an admiring crowd.” -- *Annual Report of the board of Trustees of the Public Library of Cincinnati, 1906.*