Canadian Conservation Institute
Institut canadien de conservation

CCI Notes 16/1

Care of Encased Photographic Images

Introduction

The term "case photograph" describes three types of 19th-century photographs that were generally kept in cases, which were both decorative and protective. They are the *daguerreotype*, named after its inventor L.J.M. Daguerre; the *ambrotype*; and the *tintype* or *ferrotype*. Daguerreotypes were introduced in 1839 in Paris, France, constituting for some photo-historians the beginning of photography. Ambrotypes and tintypes, made by the wet collodion process, originated in the 1850s. Daguerreotypes continued to be made into the 1860s. Ambrotypes were made for a little while longer. Tintypes survived into the 20th century in modified form as a type of instant portrait photograph.

The mention in one breath of these three types of case photographs does not suggest that they have similar properties. Whereas a daguerreotype is made by a unique photographic process that differs from any other silver halide process, ambrotypes and tintypes are made by the wet collodion process, which was the principal negative process in the second half of the 19th century.

The support material of daguerreotypes is a silver-plated copper sheet. The image consists of microscopic particles of silver amalgam (an alloy of mercury and silver) located on the silver surface. Owing to the presence of a metallic silver layer in a daguerreotype, it has been called a "mirror with a memory" with a "jewel-like appearance." This property helps to identify it. A daguerreotype is, photographically speaking, a negative. This can be observed if the careful viewer turns the daguerreotype in the horizontal plane to change the angle of light striking its surface: in certain positions, the picture appears as a negative.

Ambrotypes and tintypes, on the other hand, have definite layer structures: a collodion layer on a sheet of either glass (ambrotype) or iron (tintype). These two types of photographs are often referred to as collodion positives. Wet collodion is a solution of cellulose nitrate in a mixture of ether and alcohol.

Ambrotypes are negative images. They are always on a glass support that has a black backing of either paint or, more rarely, dark cloth or felt. This makes the image appear to the viewer as a positive. A black backing of paint can be found either under the collodion layer or on the non-image side of the glass plate. When, in the absence of a black backing, the glass itself is dark-coloured (e.g. red), the resulting picture is called an *amphitype*. The tintype support, which is coated with a black lacquer, is made of iron and, therefore, will be attracted by a magnet. This can be used to identify the support. Ambrotypes and tintypes are low-contrast pictures. With a little practice, they can be easily distinguished from daguerreotypes. Daguerreotypes and collodion positives are sometimes hand-coloured, especially to create flesh tones and to emphasize jewellery in portraits.

The common feature of these three types of photographs — the case — may be made of wood or cardboard covered with leather and embossed paper. Sometimes a black plastic material was used to make what is known as a Union case. Inside the case is a package that can be removed in one piece. It often consists of four parts: an image-bearing plate, a window mat or spacer, a cover glass, and a gilt frame made of pliable brass to hold the package together (see Figure 1). Packages with different arrangements are possible.

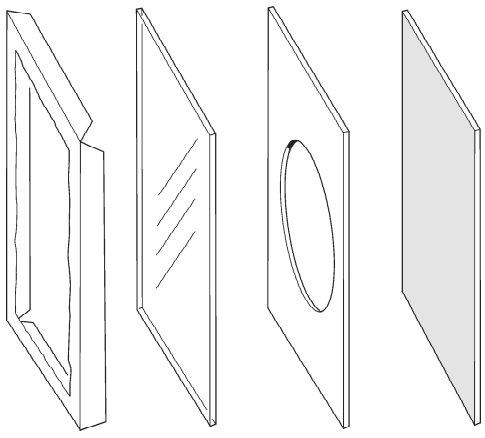

Figure 1. A dismantled daguerreotype (Gill 1974).

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Tintypes can also be found in simple cardboard frames or in albums with special cut-out windows. They cannot be removed through the window in the album page, but must be slid out toward the top or bottom of the page. Many times, tintypes are found unmounted.

Preservation and Storage

As is often the case with photographs dating from the first four decades or so of photography, little is known about optimum storage conditions for daguerreotypes, ambrotypes, and tintypes. While many general accounts have been published that describe the making of these photographs, the exact procedure by which an individual photograph was made is usually unknown. That many case photographs have survived in good condition for over a century attests to their stability. In the absence of specific recommendations based on experimental data for the storage of these photographs, it is reasonable to assume that recommendations and standard specifications made for the storage of contemporary photographic pictures apply equally to case photographs.

Keep relative humidity (RH) between 30% and 50%, but never above 60%. Recent evidence suggests that an RH level of 30–35% is optimum for all photographic pictures. Avoid daily or seasonal RH fluctuations. Storage temperature should be no higher than 24°C, and ideally below 21°C. It must not fluctuate by more than 4°C daily. The storage environment must be free of harmful chemicals, notably peroxides, hydrogen sulphide, sulphur dioxide, and ozone.

Because the cases in which most of these photographs will be found have contributed much to their preservation, they too should be kept clean and protected. Daguerreotypes, ambrotypes, and tintypes can be kept in individual document boxes measured to fit each case and its contents. Each individual box can also accommodate all necessary written information. Take special care to prevent case photographs of all three types from becoming immersed in water. Water-soaked case photographs can be neither frozen nor freeze-dried. The presence of a combination of many different materials (coated and uncoated glass plates, metal sheets, brass hinges, leather covers, plastics, gold lines and lettering, paper labels inside the cover, wooden parts, cardboard, velvet linings, collodion layers, varnish, etc.) makes recovery of water-soaked items extremely difficult. Rigid polyethylene boxes with snap-on lids or storage boxes enveloped in polyethylene are ideal protection against accidental flooding. Furthermore, it is important to protect the storage facility from flooding (i.e. put doors on cabinets, raise shelves).

Handling

Like other photographic pictures, case photographs should be handled only with protective lintless nylon or cotton gloves. Take care not to damage edges and corners of cases or to scratch the glass. Open and close cases gently to avoid stress on delicate hinges. Place uncased tintypes in custom-made mounts, which are described by Swan (1978).

Minimal Cleaning

Loose surface dust can be removed with a soft brush or with pressurized air, preferably with air blown from a compressed air can. No other cleaning method can be recommended safely. The unprotected surface of a daguerreotype is sensitive to the slightest touch; such a plate should therefore be handled with utmost care. All other cleaning operations are restricted to the non-image components of the package, i.e. case, window mat, cover glass, and gilt frame. Clean the glass and frame with a cotton swab and a mild soap solution, then rinse and dry them with a warm-air dryer (e.g. a hair dryer). Cardboard window mats should not be cleaned in a soap solution, but, rather, with a brush.

Damage or deterioration in ambrotypes is often in the form of partial or complete loss of the black backing. If the image layer facing the viewer is still intact, which is to be expected in most cases, the black backing can be replaced. To do this, separate the image-bearing glass plate from the case assembly by gently bending open the gilt frame and removing the cover glass and then the window mat. Carefully avoiding scratching or otherwise damaging the image layer while it is being separated from the case assembly, place a piece of black felt cut to the exact size tightly against the back of the ambrotype plate. Replace the cover glass if the old one is broken. Reassemble the package in the order shown in Figure 1.

Display

While most photographic pictures, including ambrotypes and tintypes, are visible because light is either absorbed by or reflected from their surfaces, a daguerreotype is visible because light is scattered by the particles on its surface. A daguerreotype displayed on a wall is therefore best illuminated by a single light source placed above it in a position that allows the light to strike its surface at a 45° angle. For security reasons, daguerreotypes, ambrotypes, and tintypes are always placed in protective Plexiglas exhibition cases. No data have been gathered to demonstrate instability of these photographs when exposed to light. They may be displayed for several weeks or even for a few months at what would, in a museum context, normally be considered very high light levels (up to 1000 lux).

Suppliers

Note: The following information is provided only to assist the reader. Inclusion of a company in this list does not in any way imply endorsement by the Canadian Conservation Institute.

Soft brushes:
local art supply stores

Cotton swabs:
drugstores or grocery stores

General conservation supplies and materials:

ARCHIVAL PRODUCTS.ca
Division of B.F.B. Sales Ltd.
2957 Inlake Court
Mississauga ON L5N 2A4
Canada
tel.: 905-858-7888 or 1-800-667-2632
fax: 905-858-8586 or 1-800-616-0342
www.archivalproducts.ca

Carr McLean
461 Horner Avenue
Toronto ON M8W 4X2
Canada
tel.: 416-252-3371 or 1-800-268-2123
fax: 416-252-9203 or 1-800-871-2397
www.carrmclean.ca

Conservation Resources International
5532 Port Royal Road
Springfield VA 22151
USA
tel.: 703-321-7730 or 1-800-634-6932
fax: 703-321-0629
www.conservationresources.com

Talas
20 West 20th Street, 5th Floor
New York NY 10011
USA
tel.: 212-219-0770
fax: 212-219-0735
www.talasonline.com

Woolfitt's Art Enterprises Inc.
1153 Queen Street West
Toronto ON M6J 1J4
Canada
tel.: 1-800-490-3567
www.woolfitts.com

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