

Handcolouring photographs

This term refers to any method of manually adding colour to a black-and-white photograph. The practice was a respected and refined art form that was highly in demand prior to the advent of colour photography.

Not all photographs are equally suitable for hand colouring. Images with sufficient detail and weaker shadows are usually the best choice as this ensures that the colour can show through more easily.

Colour is typically added by using oil paints, oil pastels, inks, crayons or colour pencils, while the methods and techniques depend on the format of the photographic image. These materials also may be used in various combinations and applied using brushes, fingers, cotton swabs or by airbrush. In order to colour a black-and-white photograph, the plate must be prepared by washing it with a weak solution of water and ammonia.

Traditional colourists often worked on a type of table-top easel with a wooden frame placed around a sheet of clear glass. The slide then rested on the glass. The frame was set at an angle with a plain sheet of paper on the table below so that the colourist could see how the colours would appear. It was important for the colourist to keep the inks moist while working. This was most often achieved by periodically breathing gently over the slide as it was being coloured. To finish, a layer of varnish was added to preserve the work.





Liquid dyes

Aniline dyes, a synthetic dye derived from aniline or other coal tar products, were most frequently used for colouring photographs, as they can be easily controlled and quickly absorbed by the print. They also allow the image to show through and do not impair its luminosity. Properly applied colour can increase the impression of depth and add a three-dimensional quality.

Drawback: Poor lightfastness of colours.

Note: When hand-colouring with dyes, a weak solution of dye and water is preferred. Colours are often built up with repeated washes rather than applied all at once. The general approach is to stain or dye the print in multiple layers rather than to apply the colour all at once, as too much paint will obscure the photographic details.



Photo Oils

As oil paint contains particles of pigment, a small quantity of a drying oil, such as linseed, must be rubbed over the dry matte, or preferably glossy, print before application of the colour. The transparent photo oil, thinned down with turpentine, is rubbed into a uniform coat with a wad of wool, while the fine detail can be applied with a small sable brush. When the colouring is finished, the print should be left untouched for at least twenty-four hours.

As the oil paint lies on the surface of the print rather than being absorbed, the photographic image is generally used as a canvas for the painted image.

Advantage: Extremely long lasting and resistant to fading.

Drawback: Frequent changes in humidity and temperature may cause the oil paint to crack. Fine detail is relatively hard to achieve with this method, as it is generally applied with cotton wool swabs or cotton buds. If too much paint is applied, it can obscure the print's details.

Note: Photo oils differ from those oils used for painting.



Photo pencils

A one-step medium that does not require a strict order of application. It can produce a pastel-like effect.

Advantage: Simple to control and apply, making them the best option for colouring in finer details. The colour can be applied over a period of time and there will be no colour discrepancy.

Drawback: Only works with smooth matte surfaces and glossy prints cannot be used; as it lies on the surface of the print finer details can be obscured; a limited number of hues in comparison to photo oils.

Crayons and pastels

The use of crayons or pastel sticks of ground pigments with various levels of saturation is considered the domain of highly skilled colourists, as this method requires extensive knowledge of drawing techniques. As with oils, crayons and pastels generally obscure the original photograph, which produces portraits more akin to traditional paintings.

Pastels should only be used to colour matte or rough prints, which should be well washed and thoroughly dried. Large areas should be dealt with first. A small amount of pumice flour mixed with a powdered pastel of the shading colour is required. Fine details can be touched up with pencils. When all of the colouring is finished, the colours are fixed by steaming the print.



Keystone magic lantern handmade slides & crayons



Watercolours

Watercolour paint has the virtue of being more permanent than dyes, but also less transparent and so more likely to obscure details. Hand-colouring with watercolours requires the use of a medium to prevent the colours from drying with a dull and lifeless finish. Before the paint can be applied, the surface of the matte or glossy print must be primed so that the colours will not be repelled. This often includes prepping the print with a thin coating of shellac, then adding grit before colouring.

Watercolour paint used in photographic hand-colouring consists of four ingredients: pigments (natural or synthetic), a binder (traditionally arabic gum), additives to improve plasticity (such as glycerine), and a solvent to dilute the paint (i.e., water) which evaporates when the paint dries. The paint is typically applied to prints using a soft camel brush.

Watercolour paint is best applied on matte surfaced prints and carbons.



Watercolour paints made by Johnson and Sons, specifically for colouring postcards, prints and magic lantern slides

Peerless Japanese Transparent Water Colors



Materials and tools for applying and removing colour

Compounds for Pretreating Prints (also known as PMS) – Used for pretreating or precoating prints to make the surfaces more receptive to colouring agents as it softens the pencil lead. It also can remove large areas of colour from prints and can be mixed with oil for lighter tints.

Cotton (Cotton swabs, cosmetic cotton balls, bulk cotton) – Ideal for spreading colour evenly, as well as for absorbing excess oil. For precise colour applications, wrap cotton around the toothpicks to create a miniature swab.

Brushes (Pointed sable brushes) – Ideal for fine details and works well with retouching dyes, inks and other liquid media.

Vinyl eraser – Erases pencil marks, but also requires canned air to blow the eraser particles from the print.

Draft tape – Secures the print to a work surface.



Dezső Bozóky glass slides



A set of Winsor & Newton paints for hand-colouring photographs. A bottle of turpentine can be seen on the right of the tray, with cotton wool and sticks in the bottom to be used as the 'brush'.

According to the Hungarian photographer Dezső Bozóky's travelogue (refer to *Pictures of the Past: Hungarian Photographer Dezső Bozóky in Hong Kong and Along China's Coast: Dezső Bozóky's Travel Photography 1908–1909* exhibition), he produced six hundred and eighty-nine hand-coloured glass slides when documenting his travels to the Far East.

These slides may have been coloured with water colours or oils, although the latter presented more challenges in getting the colours to be transparent enough for light to pass through when the slide was projected. Therefore, a thinning agent such as varnish or turpentine was often mixed into the colours. The limitations posed by the need for transparency also affected the range of colours used.

Gelatin dry plate process

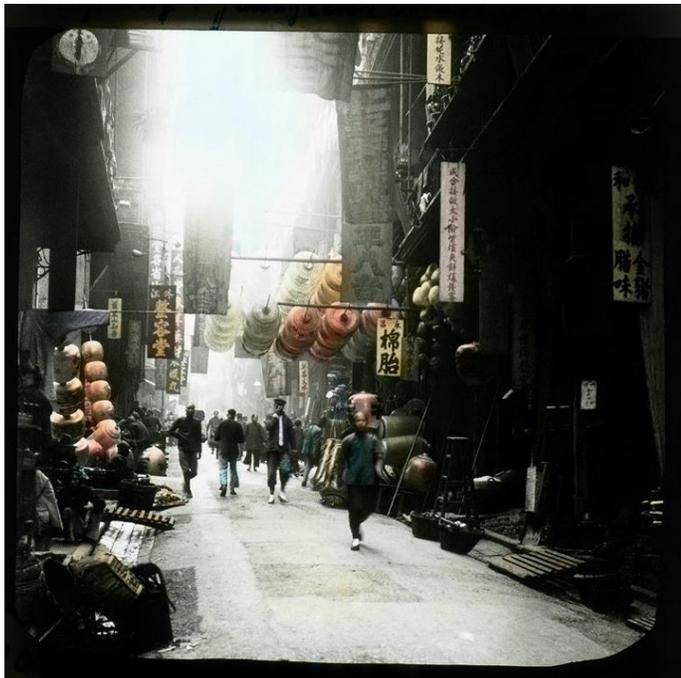
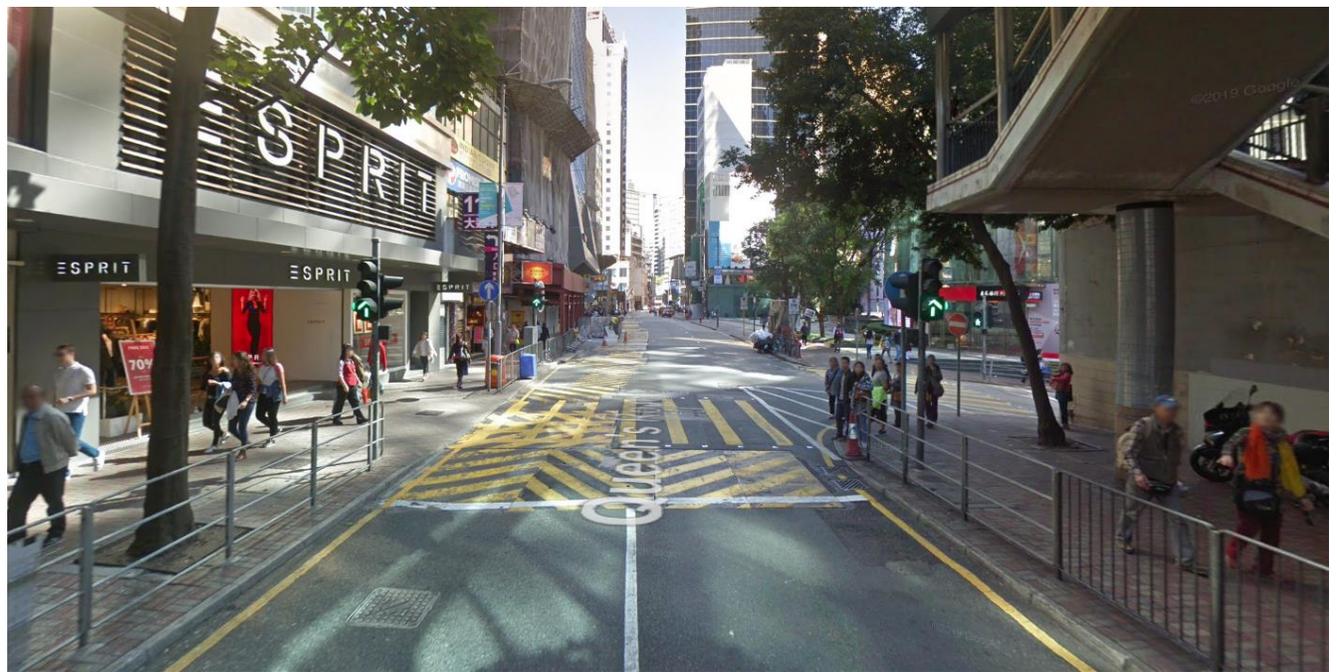
In the middle of the 19th century, nearly all processes that involve the use of silver nitrate were made in a two-step process: Coating the plate & sensitising the plate. Bozóky's glass slides were most likely made with the gelatin dry plate process, which was invented in 1871 by Dr. Richard L Maddox. This process involves mixing and boiling gelatin in water with bromide and silver nitrate, which in turn creates a light sensitive gelatin emulsion. They are then poured onto the hot glass plates and dried prior to use. This is a more practical photographic method than the **wet collodion process**, as the plate could be transported, exposed and then processed at a later date without the need for a portable darkroom. Photographers could take a package of plates on a trip, expose them and develop them when they had access to a darkroom.



The European standard dimension of these glass slides is 3.25 x 3.25 inches (8.25 cm).

Over the next few pages, you will see some rare documentary images of the former colonial city, which you may hand-colour with watercolour.















Be a colourist!



Hand-colour old Hong Kong

This is a self-guided activity.

Please purchase the colouring materials at:

- G/F T.T. Tsui Building, University Museum and Art Gallery, HKU (Tuesday to Sunday)

Cost: HK\$50 (Includes two photographs and 15 colour strips)

Tools such as brushes, plastic palettes, paper towels and sponges are available in the workshop.

Hand-colouring kits were widely available in the 19th century. These kits included camel's hair brushes, mixing saucers, binders and dry pigments. The bottles of pigment were often labelled with names indicating the areas for their use, such as 'ladies' flesh colour'. In fact, several photographic manuals give explicit instructions regarding the choice of pigments to be used for specific areas of a portrait, suggesting that the practice was formulaic.



Must Read!

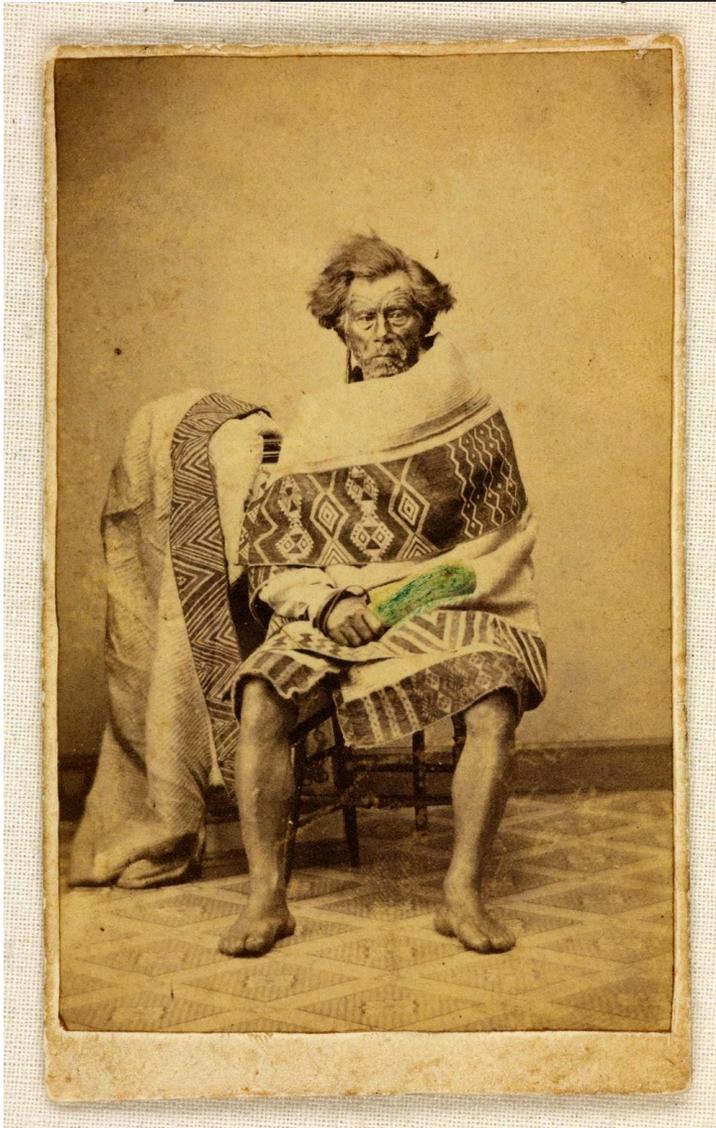
You will find more general directions on how to apply watercolours to photo paper inside the workshop space. It is advised to read the directions carefully before starting the activity.

- Store the water colour strip in a dry place.
- Think carefully before applying the colours on the photo, as the process is irreversible. **Do not attempt to get the correct shade with the first colour application. To achieve the final shade, it is required to paint the area several times with a weak wash.**
- Apply lightly but quickly.
- The colour swatch is a heavy film of very concentrated pure colour which must be diluted with water before application. You may want to test the swatch out on a sheet of white recycled paper before applying to the picture. One side of these films is tinted to show the shade of the colour while the other side contains the actual colour.
- Use a paper towel or sponge to absorb any surplus moisture.
- Apply another wash of the same colour to obtain a deeper shade.
- Leave the finer details till last, while the colour should be carefully applied with a fine brush.
- Clean the brush before using another colour.
- Colours stain very easily. Please wash your hands thoroughly after the activity.

Basic Hand-colouring Techniques

1. Wash - A broad application of colour that creates a colour base across the entire print.
2. Detailing - Overlapping colours as well as shaping the print: adding shadows, depth and highlights.
3. Fine-tuning - Adding subtle bits of colour to eyes and cheeks or erasing stray colours.

Note: Colouring did not always involve applying colour to the entire image. In fact, it was common practice to add by hand a touch of gilding on jewellery to daguerreotypes. Left: Work by Henry Frith. Portraits of Māori featuring taonga / treasured items



Tips on colouring

- Always colour the sky first.
- **Clear blue sky** – Begin at the upper skyline with a pale wash of *Sky Blue*, diminishing the depth of colour as you paint down towards the horizon.
- **Clouds** – Leave these uncoloured and tint the space between them with *Sky Blue*.
- **Sunset** – You may still begin with *Sky Blue* for the upper skyline, but apply a diluted wash of *Deep Yellow* or *Orange* towards the horizon.
- **Mountains/Hills** – Carry the *Sky Blue* wash over as it will add the effect of distance, especially if green is used in the foreground and middle distance.
- **Tree bark** – Use a very diluted wash of Brown.
- **Weather-beaten building or fences** – Use a very diluted wash of *Pearl Gray* or *Sky Blue*, the latter can be used for old stone buildings.

	BRILLIANT YELLOW	DEEP YELLOW	ORGANGE YELLOW	FLESH TINT	GERANIUM PINK
Used for...	<ul style="list-style-type: none"> • Sky tints • Flower 	<ul style="list-style-type: none"> • Sunset effects • Foliage work to show direct sunlight effects 	<ul style="list-style-type: none"> • Decorative and interior work • Sunset colour 		<ul style="list-style-type: none"> • Flower • Figure pieces (when bright effect is wanted)
Shades after dilution	<ul style="list-style-type: none"> • Lemon yellow • Straw yellow • Tea rose yellow 	<ul style="list-style-type: none"> • Naples yellow • Cream yellow • Old-gold yellow • Brass yellow for touching up old candle-sticks / gilt frames 		<ul style="list-style-type: none"> • Copper • Nasturtium • Salmon 	<ul style="list-style-type: none"> • Carnation pink • Rose pink • Apple blossom pink • Rose madder for delicate flesh tints
Shaded over...	<ul style="list-style-type: none"> • Dense foliage before green → Gives brilliancy • Mahogany → Golden brown • Japonica scarlet → Vermilion 				
Mixed with....			<ul style="list-style-type: none"> • Japonica scarlet → vermilion for the red in neon signs or commercial photographic illustrations 		

	JAPONICA SCARLET	ROYAL CRIMSON	MAHOGANY BROWN	SERPIA BROWN	LIGHT GREEN
Used for...	<ul style="list-style-type: none"> • Interior work • Garments • Flower 	<ul style="list-style-type: none"> • Flower tinting • Colouring of maps and charts • Interior work • Figure pieces 	<ul style="list-style-type: none"> • Landscape • Interior work 	<ul style="list-style-type: none"> • Landscape • Interior work 	<ul style="list-style-type: none"> • Foliage
Shades after dilution	<ul style="list-style-type: none"> • Strawberry red • Light red • Madder red 	<ul style="list-style-type: none"> • Rich carmine • Cardinal • Claret 	<ul style="list-style-type: none"> • Cinnamon • Chestnut • Sorrel 	<ul style="list-style-type: none"> • Forms a base for roadways, limbs of trees 	
Shaded before...					<ul style="list-style-type: none"> • Yellow → Add life to a clump of dark foliage
Mixed with...	<ul style="list-style-type: none"> • Deep Yellow or Orange Yellow → Vermilion • Mahogany → Red brown • Sepia → Venetian red 	<ul style="list-style-type: none"> • Sky Blue → Warm purple 	<ul style="list-style-type: none"> • Japonica scarlet → Terracotta brown • Royal Crimson → Madder brown 	<ul style="list-style-type: none"> • A wide range of brown shades 	

	DARK GREEN	SKY BLUE	DEEP BLUE	WISTARIA VIOLET	PEARL GRAY
Used for...	<ul style="list-style-type: none"> Foliage (deep shade) 	<ul style="list-style-type: none"> Sky Interiors Garments Flowers 	<ul style="list-style-type: none"> Flower 	<ul style="list-style-type: none"> Flower 	<ul style="list-style-type: none"> Landscape Fences Rocks Old buildings
Shades after dilution	<ul style="list-style-type: none"> Grass green Nile green Pea green 	<ul style="list-style-type: none"> Cerulean Steel Pearl blue 		<ul style="list-style-type: none"> Purple Lavender 	<ul style="list-style-type: none"> Siler gray Stone Drab
Mixed with...	<ul style="list-style-type: none"> Brilliant yellow/Sky blue → Hues and shades of green 				

Fun facts

Why was there a demand for colour photographs in the 19th century?

Photographers advocated hand-tinting or overpainting photographs to compensate for their inability to reproduce the naturally occurring colours.

What roles did women play in the industry?

Portrait studios often employed women to tint the photographs, and it was in this capacity that women started to enter the photographic industry.

How does one know if the colours are true to the original scene?

It was impossible to exactly reproduce the natural colours. Photographers would record the principal colours in a notebook, or else consult with customers, who would mark up a proof print for the colourist.

Although the hand-colouring technique was introduced in Europe, in which other country did this process gain considerable popularity?

Japan

Which invention phased out the craft of hand-colouring photographs?

Kodachrome process



Glossary

Here are some of the key words that will help you understand the photographic technology and related processes

Collodion – A solution of guncotton in ether, or alcohol and ether. The guncotton was formed by dissolving cotton wool in a mixture of nitric and sulphuric acids.

Daguerreotype – Image formed on the silvered surface of a copper plate, sensitised by iodine vapour, and developed with mercury vapour. Used primarily for portraiture.

Developing – A process whereby an invisible or latent image is made visible through chemical treatment.

Emulsion – A suspension of minute droplets of oily or other water-insoluble liquid in water. The term in photography also used to describe a suspension of light sensitive chemicals in a substance such as gelatin.

Gelatin paper – Papers coated with a layer of gelatin containing light-sensitive salts.

Relief image – In photography, an image, usually in gelatin, in which the various tones of a photograph are represented by varying thickness of the coating. Highlights are represented by a thin layer, shadows by a thick layer.

Wet collodion process – A photographic process which involved adding a soluble iodide to a solution of collodion, and then coating a glass plate with the mixture. It produced a very sharp image but required photogenic material to be coated, sensitised, exposed and developed within 15 minutes.

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