photographic CANADIANA

Journal of the Photographic Historical Society of Canada

Volume 46 • Number 1 May • June 2020

Photograph courtesy of Lorne Shields

$15.00 CDN

photographic CANADIANA

103

Journal of the Photographic Historical Society of Canada

Volume 46 • Number 1 ISSN 0704-0024 Date of Issue: May 2020 May • June 2020.

Canada Post Canadian Publications Mail Sales Product Agreement No. 40050299 Postage Paid at Toronto

IN THIS ISSUE

Photograph Courtesy of Lorne Shields

OUR COVER: With tongue-in-cheek our caption might read: "Speeding down the highway." But this unidentified picture is from 1867 when the gentry were thrilled to go as fast as their legs would peddle. Lorne Shields contributed this image from his special archive. Lorne comments: "These early velocipedes were amongst the first cycles to have pedal-driven cranks mounted to the front-wheel hub that led to the practical bicycle. These appear to be quality blacksmith-made examples produced by the same person. The man at the right is leaning back which is an accurate portrayal of a contemporary rider's positioning. It is highly unusual to find photographs of multiple velocipedes of that era with riders mounted." ❧

Photographic Canadiana is published four times a year by The Photographic Historical Society of Canada.

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CLINT HRYHORIJIW

PRESIDENT'S MESSAGE

portrait by Robert Lansdale

Better Days Ahead!

This is probably the fourth or fifth version of this president's message. My first efforts back in March, after gentle urging from Editor Bob Lansdale, were all gloom and doom along the lines of burning old-box-cameras for warmth and fuel or beating old Nikons (certainly not old Canons) into plowshares to grow our own food.

But if you believe anything they tell us, things seem to be getting better. Perhaps not today, the day after Mothers' Day, with an inch of snow on the neighbour's bright red tulips, but this week is better than last week.... which was better than the one before. Fewer people are coming down with C-19; these are unprecedented times for the world as well as for us at the PHSC.

The management of the PHSC continues almost uninterrupted. Thank goodness for our newly-minted Program Coordinator and Zoom-Meister Celio Barreto for getting our executive meetings on-line, and helping out those of us who were Zoom-challenged.

We've had to cancel events, lots of them, like our March auction, May Photo Fair and monthly speaker programs. We're not sure when we'll be able to get back to normal. Watch our website, www.PHSC.ca and the PHSC Newsletter for updates.

That's why our communications platforms are so important now. Our social media on *Facebook* is enjoying an uptick, while our *Instagram* has shot through the roof. And nothing can stop the email *Newsletter*; your May edition will be arriving shortly. Most importantly, for the sake of safety in reducing the physical contact involved in producing a hard copy, this very publication, our quarterly PHSC Journal, has been sent to you, our members, as a PDF file. Please enjoy the interesting and inspiring content, along with all the colour that such on-line publishing allows.

We're pretty sure you'll want to share this edition of the journal with friends, relatives and colleagues, and we would encourage you to do so. At the same time, please remind them that at $35 per year, the membership which gets them this information-packed journal four times a year is the best deal in town.

Until we meet again in person, *inveniam viam aut faciam [I shall find my way or make one.]*

CLINT HRYHORIJIW, PRESIDENT
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The PHSC was founded in Toronto in 1974 for those interested in photographic history. It is incorporated as a non-profit organization in Canada. All activities are undertaken by unpaid volunteers. We help camera and image collectors and those interested in the diverse aspects of photographic history, share in their enthusiasm and knowledge. We promote public interest in photographic history through talks, awards, publications, fairs, auctions and on-line. Our members are camera or image collectors, photographic researchers and writers, and photographers in Canada. Included are many libraries, archives, museums and other photographic societies.

A subscription to *Photographic Canadiana* is included in PHSC membership fees of $35.00/year and $100/3 years – PayPal payments for U.S. and International Membership is $45. (CDN). Toronto area fee includes free educational meetings.

TORONTO NOTES

JANUARY and FEBRUARY 2020 MEETINGS

Reported by Bob Carter

Chris Luckhardt has travelled the world photographing ruins and posting to social media. Chris began to photograph his travels some eighteen years ago using a digital camcorder. From the recorder, he moved on to a digital camera.

Photograph by Robert Lansdale

CHRIS LUCKHARDT

He now focuses on Instagram, YouTube, and his website that will relaunch this year (chrisluckhardt.com). Before posting, he may crop a bit or correct for tilt, but that is usually all he does. His prints are sold via his website as electronic files.

He explored and photographed as he traveled around the upper Great Lakes. He showed slides of one popular site - an abandoned Rochester subway station. In another image, he snapped abandoned cars and buses in a field near Milton. While he explored and photographed, he learned to make better images. For example, he showed some Buffalo images where he used a tripod to keep the camera steady. By 2007, (five years later) Chris took an image of the bay in San Francisco while going by boat to Alcatraz. As it was displayed, he noted that birds flying close by with the city in the distance makes the shot.

The revenue from his photography leads to trips and conferences which open avenues for photos of foreign abandoned places. For example, he discovered dozens of abandoned Edsel cars in the midwest in a field. His first film image was an abandoned truck in the snow of spring. In another, the image he projected showed a military tank on an active New Jersey training airbase. Chris said he snuck in, took some photos, and got out. In this case, he used Ilford HP-5 film.

Explorers like Chris try to visit all the abandoned spots in the world. He has explored in 18 countries, every US state, and every Canadian province. He hasn't explored Chernobyl yet but is hoping to visit the legendary site later this year.

In October, Chris and three photography partners planned a visit to China and its abandoned theme parks, cities, and parts of the Great Wall. One abandoned theme park they visited was massive, but it was built on unapproved land and so was forced to close. Chris showed one image outside a Chinese abandoned mall with city buildings in the background. While its design was not especially significant, it was an important place to visit because of its sheer size!

Closing his talk, Chris showed images he took in Russia. Chris and a partner visited the abandoned Soviet Space shuttles there. They hiked 75km over rough desert terrain at night carrying heavy supplies for a multi-night stay. There's a 50/50 chance of being caught by Russian military patrols armed with AK-47s.

The Soviets built three shuttles, basically as a carbon copy of the NASA program with added outboard booster rockets. The Buran shuttle, called Blizzard in English, worked and flew although it had no one on board. A second was about 95% built while the third was for training cosmonauts. All were built in Kazakhstan back in the days when it was part of the USSR. The location was also used to build MIR, the space station.

The older Russian shuttles were very expensive to house and maintain. Buran was destroyed in 2002 when the giant hanger housing it suffered a collapsed roof. The other two shuttles were in a second hanger while the boosters were in a third. All three hangers are without power or staff today. Tours are available to see some parts of the spaceport, but the shuttles are off-limits.

The team of four did six months of planning before the trip. Chris did 12 weeks of intense gym training as preparation. Only two of the team ended up going to the shuttle hangar making no noise at all. Ran, a 160 cm tall Chinese explorer, carried gear that weighed about half of her body weight! The pair understood they were trespassing on Russian territory in Kazakhstan half-way around the world with no support. If they were caught, their SD cards and images would be destroyed, and even their cameras erased. All images were taken by natural light filtering through the hanger windows. While they took photos in the huge hanger, they decided not to try entering the shuttle itself since others did so earlier (French explorers even took a video inside the shuttle).

Tonight's talk gave us the vicarious thrill of visiting abandoned buildings plus an insight into the world of the Adventure Photographer. The evening wrapped up with a spirited Q&A session.

Our last speaker before COVID-19 hit was Victor Caratun: "Toronto Past - Our Past through Images". His presentation was well received with an influx of guests, old and new to the PHSC. Victor himself has been a PHSC member off and on since 2013. He is part of the Facebook site "Toronto Past Archive"

Victor presented a brief history of Toronto via postcards and photographs. He began with a summer 1901 photograph up Yonge Street just before the Boer War parade set off in a whirl of bunting and soldiers. Right after that, he projected a list outlining his presentation and its objective. This short list preceded a very brief perspective of photography in the 1800s - Wedgwood and his camera obscura experiments in 1800 up to the very early 1900s (1913) to set the tone of his presentation. This was followed by a brief history of the postcard and the importance of photographic postcards to our city's history.

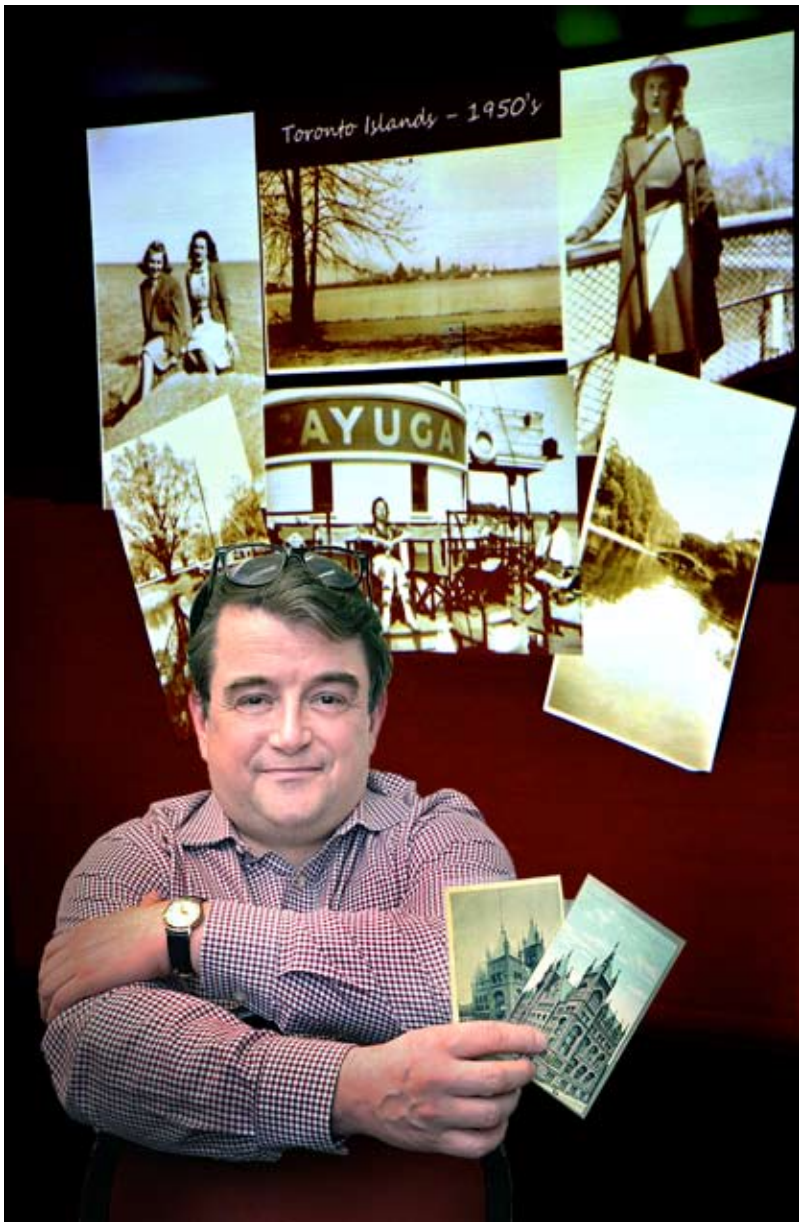
Victor demonstrated this importance by showing Toronto's changing skyline in postcards from 1915 - 2015. This was followed by separate photos showing the 1931 skyline, the Bloor Viaduct when recently finished, and our waterfront in 1915 before it was seriously altered by the encroachment of landfill.

A night shot of a TTC Dundas street car on Albert Street introduced the "Collecting Toronto" part of his talk. An 1888 photo by Micklethwaite along King Street near St. Lawrence market was compared to a 2018 colour photo from the same spot - only a clock tower was identifiable to me in both photos. A postcard captured daily life in 1905 on the corner of King and Yonge. In another image, Victor compared Bay Street looking north to Queen Street and the city hall around 1901 and in 2018 - well, at least the old city hall was identifiable in both photos!

"Personal Photos" began with a porch shot of 147 Beverley Street in 1911 and again in 2017 showing both changes and things untouched. A second slide showed the same 1911 photo, a close-up of the people on the front porch, and a postcard. It suggests one person on the porch is Prime Minister Mackenzie King who lived there over a decade earlier with his parents while attending University of Toronto.

Slides show postcards of delivery services, daily life, visits by Royalty, and more sombre events like the terrible 1904 fire. Other postcards show the Hanlan Hotel on Centre Island and the tragic fire that consumed it five years later. One very memorable slide shows the 48th Highlanders in the largest war parade ever held in Toronto, marching down University Avenue off to fight in the great war.

As an example of how photography can aid history, Victor showed a photo of Captain Douglas Higgins around WW1. The photo was easily identified as that of Higgins as it was juxtaposed next to a newspaper article from the Toronto Star on March 8, 1918 with Higgins's portrait at the top. Another photo dated 1925 shows the crowd at the old city hall attending the dedication of the Cenotaph commemorating Torontonians who died fighting in WW1.



VICTOR CARATUN

"Shopping and Stores" in Toronto years ago were represented by photos of Dominion Regalia (c1930), makers of ribbons, bunting, etc.; Stennett Brothers in the Beaches; and the 114 Yonge Street branch of the Eastman Photographic Stores (1930). "Recreation" is shown by a photo of the High Park Mineral Baths pool and postcards of a Hunt Club ceremony, Steamships on Lake Ontario, Toronto Islands in the 1950s, etc. Other photos and cards show things like school children, ladies (summer), and men (winter), in typical attire plus the ROM at Bloor and the AGO in the Grange.

Victor wrapped up his talk with a slide showing ways he can be contacted. Throughout his talk, and especially once it concluded, there was an enthusiastic Q&A session. Although we have seen talks on Toronto's history before, Victor's unique perspective using postcards and some photos brought a fresh insight into our wonderful history and how to view it. Be sure to visit Victor on his facebook page "Toronto Past Archive". ❧

Figure 19. Agnes B. Warburg, *5109. Venice, 9 Sept 1935, 10:20am, 1/50 @ f4.5, sunshine* Dufaycolor slide, 1935, © Victoria and Albert Museum

Figure 20. Agnes B. Warburg, *5105. Swimming pool, SS Strathnaver, 5 Sept 1935, 1/50 @f3.5, 3p.m., cloudless*, Dufaycolor slide, 1935, © Victoria and Albert Museum

Figure 21. Agnes B. Warburg, *5369. At Kyleof Lochalsh*, Dufaycolor slide, 1937, © Victoria and Albert Museum

Figure 16. Agnes B. Warburg, A Cherry Orchard in Spring, sanguine-tinted gum print, 1904 © Victoria and Albert Museum

Figure 22. Agnes B. Warburg, *5385. Feeding Herring Gulls*, Dufaycolor slide, 1937 © Victoria and Albert Museum

Figure 23. Agnes B. Warburg, *Mallaig, painting the boat*, Dufaycolor slide, 1937, © Victoria and Albert Museum

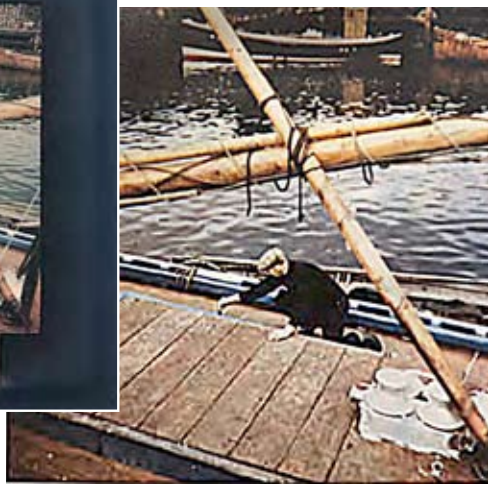


Figure 24. Agnes B. Warburg, *Mallaig, painting the boat*, tri-colour carbro print, ca. 1937, © Victoria and Albert Museum

A HIDDEN HISTORY OF EARLY COLOUR PHOTOGRAPHY IN BRITAIN: THE PHOTOGRAPHS OF AGNES B. WARBURG (1872-1953), Part Two

By Hana Kaluznick
Master of Arts, Film and Photography Preservation and Collections Management
Toronto, Ontario, © Hana Kaluznick, 2019
This is a precis version of the complete thesis

Agnes Beatrice Warburg (1872-1953) was a British amateur photographer and active member of the Royal Photographic Society (RPS). Between about 1890 and 1949, Warburg experimented with nine different colour photographic techniques, established the RPS Colour Group in 1927, and invented her own process called the War-type in 1918.

This thesis examines the untold history of Agnes B. Warburg, and narrates a history of early colour photography between 1907 and 1945. This allows us to see how amateur photographic practices informed and perpetuated the artistic and technical development of colour photography in the early 20th century.

Author Hana Kaluznick is Assistant Curator of Photographs at the Victoria and Albert Museum in London, UK. She holds an MA in Film + Photography Preservation and Collections Management from Ryerson University. Her research examines how amateur photographic practices informed and perpetuated the artistic and technical development of colour photography in the early 20th century.

Continuing from Part One: Colour Processes

The nine processes she used include: platinum, carbon, tinted gum arabic, the autochrome, Raydex/Ozobrome, the War-type, tri-colour carbro, Kodak Colorsnap, and Dufaycolor. This list can be divided into two categories: assembly processes and screen processes. The assembly processes she used were gum printing, Raydex/Ozobrome, tricolour carbro, Colorsnap and the War-type. All were printed tediously by hand, sometimes taking many days to develop. By comparison with the simpler screen processes such as the autochrome and Dufaycolor these assembly processes were extremely difficult to use. Fundamentally, screen-based processes like the autochrome changed the modus operandi of making photographs. Making colour photographs was no longer about control in the darkroom or experimenting with pigments and dyes, as most amateur and professional photographers could successfully develop autochrome slides. However, the autochrome and other mechanical processes that were to come posed a great challenge to pictorialists, who were concerned with evoking colour as opposed to mimicking it.[60] Warburg's collection of assembly and screen processes indicates that she was aware of the perceived artistic limitations of the autochrome and it could be argued that that is what drove her to pursue such a diverse range of assembly processes. The assembly processes produced a print instead of a slide, while offering greater ability for control to evoke rather than mimic the colours that surrounded her. From 1907 until the late 1930s Warburg was working exclusively with these print materials. Her career as a colour photographer was capped by the use of two screen processes, the autochrome and Dufaycolor. Yet the two differ starkly in quantity, quality and content in the Warburg collection. There are hundreds of Dufay slides compared to only a handful of autochromes, suggesting that as photographic trends and technologies progressed, Warburg was transitioning her practice alongside these innovations.

The Photographic Journal published by the RPS and the *British Journal of Photography* (BJP), were central sites for discussion and marketing of different colour process. Warburg was a frequent contributor to The Photographic Journal publishing lectures, articles, and how-to guides for Dufaycolor and tri-colour carbro printing. Collating the textual materials with references to the photographs has enabled me to fill in some of the layers that made up her interdisciplinary practice. The following chapter will outline each of the processes Warburg used to make photographs over the course of her career; beginning with platinum and carbon printing in the late 1800s and culminating with Dufaycolor in the 1940s. The processes can be sectioned into three larger process groups: additive screen processes, pigment processes, and dye imbibition processes. A brief description of how these processes worked and how they were made will be outlined, followed by a discussion on their relevance within the broader Warburg collection.

I. Platinum and Carbon (1890-1900)

Warburg followed in the footsteps of her eldest brother, John Cimon Warburg, and began making photographs in the late 1880s. The earliest prints in the V&A collection are platinum prints made in 1898 though I do not suggest this was the first print she ever made. She used black and white materials throughout her entire career and addressing these images allows us to gain a better understanding of her transition to colour. Her knowledge of black and white materials, processes, and techniques including control of contrast, tonal range and darkroom chemistry all stood her in good stead as she moved into colour printing. By the turn of the century, black and white materials were becoming easier to use, but for those developing at home it was by no means as simplistic as the Kodak suggestion, 'You press the button, we do the rest.' Carbon and platinum printing were multi-step processes requiring intense precision and attention to all key factors: water temperature, solution ratios, development times, chemical balance and paper type. The complexity of these processes built her technical skill, which later served her in using colour processes that required the use of black and white separation negatives such as Raydex/Ozobrome, the War-type and Colorsnap prints. Because she was technically proficient, focused, and financially capable I would suggest that she was motivated by the challenge that colour photography posed.

Figure 14. Agnes B. Warburg, A breezy morning near Gothenburg, Sweden, platinum print, 1898 © Victoria and Albert Museum

Figure 15. Agnes B. Warburg, *Buying Flowers*, platinum print, ca. 1899 © Victoria and Albert Museum

Additive Screen Processes

Warburg's transition to colour began with these processes. Her tinted gum and carbon prints suggest an early inclination toward colour, but it was the invention of the autochrome that solidified her interest in this type of photography. Additive colour screen processes worked on the premise that a colour image could be created through the use of a colour screen in combination with a black and white negative emulsion. These processes enabled shorter exposure times and necessitated fewer exposures than competing colour technologies. The most iconic of the additive processes was the autochrome, introduced in 1907 by the Lumière Brothers. This launched a frenzy of research around the best ways to simulate colour using the additive approach. Myriad processes came forward and some processes, including Dufaycolor, were used well into the 1950s. Originally on glass substrates, these processes increased in usership as lighterweight flexible celluloid bases became more widely available in the early 20th century.

Louis Ducos du Hauron established the logic for additive processes in 1868.[61] He was the first to consider that photographing through screens comprised of lines of varying colours could enable the first steps required to create a colour photograph. Taking inspiration from Ducos du Hauron, John Joly commercialized the first screen plate process called the Joly Plate in 1897. Despite its high price and fundamental issues of low sensitivity and poor colour quality, it was the first process to gain any real popularity and remained on the market until 1900.[62] Ducos du Hauron would eventually invent the Omnicolore process in 1907, but it fell short on quality and had no commercial success.

II. Autochrome

The autochrome is heralded as the first commercial process capable of photographically rendering the world's natural colours. As evidenced by a patent submitted in May of 1904, the autochrome was ready for issue, but an additional three years of developmental work was required to make it a useable commercial product.[63] By comparison to other commercial colour process that came before it, exposure times were shorter, resolution was higher, and the colour cast was more accurate. The autochrome used a combined system, meaning the screen and photographic emulsion were together on one substrate. Separate systems required that the emulsion plate and viewing screen were separate. Bringing the screen and emulsion together reduced "problems of uneven contact and poor registration between screen and image."[64] The autochrome screen was made up of potato starch granules approximately 12 to 15 microns in diameter, dyed blue-violet, orange-red and green, totalling an average of 4,000,000 granules per square inch.[65] When mixed, the granules created a grey powder that was applied to a glass plate coated with adhesive resins, and gaps between the colour granules were filled with fine black carbon powder.[66] After being passed under a high-pressure roller, the plate was covered in a layer of nitrocellulose, dammar resin, and castor oil. Finally, a silver-halide photosensitive solution was coated over the screen. Developing a plate was done using a conventional reversal technique, a process that produced a positive image directly onto the substrate. Once the picture was developed it would be bleached and re-exposed to white light and developed a second time to produce a positive image. The resulting positive image would then be varnished and protected with a piece of glass.[67]

The soft, painterly quality of the autochrome initially put it in good stead amongst the artistic community. Dominant voices in photography, including Alfred Stieglitz,

enthusiastically equated its creation with that of the Daguerreotype.[68] But it was expensive, delicate, and nearly impossible to display. For amateurs similar to Warburg, the need to display slides was paramount. The emulsion covering the plate was so dense that only 7.5 percent of available light was able to pass through the image.[69] This made viewing the autochrome, under either natural or artificial light, extremely difficult. And to further complicate matters, if a hot projection light source were placed close to the plate, the emulsion would burn and deteriorate quickly.[70] Lecture, exhibition and demonstration were at the core of the RPS and the challenges members faced in displaying autochromes offers a suggestion as to why Warburg may have discontinued working with the autochrome so early on in her career with colour. The shortcomings of the autochrome resulted in a multitude of new additive screen alternatives, but few would achieve comparable commercial success.

Figure 17. Agnes B. Warburg, *[Untitled]*, autochrome, ca. 1907, © Victoria and Albert Museum

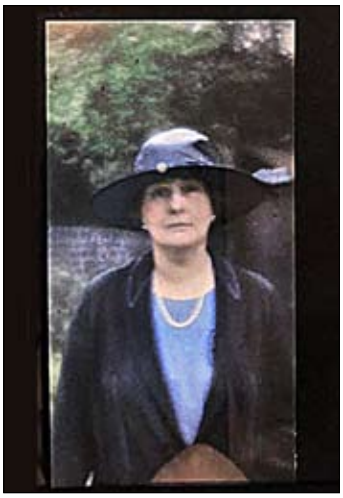


Figure 18. Agnes B. Warburg, *[Untitled]*, autochrome, ca. 1907, © Victoria and Albert Museum

Lumière discontinued the autochrome in 1934, a date that seems surprisingly late given the technical advancements that had been happening elsewhere in the market.

It can be suggested that the collection of autochromes by Warburg represent a very tentative introduction to colour photography. There are approximately twenty plates directly attributable to her. Though there may be more, I hesitate to say so because of the current organization of the collection. Several artists share boxes and the slides are seldom signed. The subjects of the autochromes attributed to her are often out of focus and posed. Portraits are not common elsewhere in the collection, and perhaps this was the result of the difficulty associated with capturing a moving, breathing target with a slow shutter speed required for the low light sensitivity of the autochrome plates. Furthermore, it is uncharacteristic of Warburg not to explain her errors or shortcomings in publications or notes on the margins of her images. Therefore, I suggest that these autochromes are the results of Warburg's early experiments with additive colour plates and the first example where we see Warburg abandon a process in favour of one that she felt facilitated better results. In this instance, she moved from the autochrome to tri-colour carbro printing.

III. Dufaycolor

Dufaycolor was originally created for motion picture film in 1932, and was introduced to the still photography market in 1935.[71] Additive process technologies had evolved substantially between Warburg's use of the autochrome and Dufaycolor. Dufaycolor was the third iteration of film produced by French lawyer Louis Dufay (1874- 1936). Invented in 1908, Dioptichrome was the first of the three, using the basic principles of filtered light put forward by Ducos du Hauron.[72] This process was a glass plate separate system. Up until the widespread use of film, additive processes were generally all separate systems, meaning that the viewing screen and substrate were created and functioned separately. A major drawback of the separate system was the parallax effect. This occurred when the positive image was not at a right angle to the line of vision. The result was a skewed interpretation of colours: the viewer would see the subject in its complementary colour as opposed to true ones.[73] Like many other separate systems including Paget and Finlay colour, the effort to eliminate this issue was realized when combined systems were invented. For Dufay, this was Dioptichrome-B, released in 1910.[74] The Dufay Company was dissolved prior to World War I, but would be picked up again in 1917 under the name Dufay Versicolor.[75] In 1925, the company changed hands again.[76] The family-run English company, Spicers Ltd., of London sponsored the process in 1932, renaming the company Spicer-Dufay. Together with the Spicer Ltd. engineer, Charles Bonamico, they released the first iteration of Dufaycolor as ciné film in 1932.[78] In 1935, Ilford Limited of London purchased the manufacturing rights and started making 35mm and 2 ¼ inch film for still photography. Using a colour screen, called a mosaic or réseau, the principle of Dufaycolor was the same as many combined additive processes. The réseau was uniformly divided into microscopic areas of blue, green and red that sat on top of an emulsion layer. There were approximately 1,000,000 tiny coloured elements per square inch of film. Together they acted as the filter to create the sensation of colour. The Dufaycolor réseau had alternating rows of blue, red and green dye at a 23-degree angle to one another. The first step in manufacturing a réseau filter was to cover a piece of cellulose acetate (film) with a layer of collodion dyed blue. Greasy ink would then be printed on top and the film would be bleached to create blue channels between clear channels. Next, the film was dyed green to create alternating green and blue lines and the greasy lines would be gone. A new set of ink was rolled on perpendicular to the green and blue lines, and then bleach and dyed in red, again, removing the ink and leaving a completed réseau.[79] The screen was then coated with a panchromatic emulsion and was ready for exposure. Dufaycolor was sold as cut film, or rolls of 12 exposures.[80]

Warburg was an avid user of the Dufaycolor process. She praised the simplicity of developing an image stating that after decades of having used tri-colour processes, "developing Dufay slides is as easy as falling off a log."[81] This part of the collection is comprised of 400 slides, and makes up the majority of the RPS Warburg collection. It was the only process she used in the later part of her life. The

last photographs made by Warburg are Dufaycolor slides in 1949: she was 77 years old.

The Colour Group meeting notes indicate that she was determined to find the best way to display slides for the public: in exhibitions, lectures and at home to friends. She felt that the slide was indicative of colour photography's mechanized future. The earliest images in the collection of Dufay slides are from 1935, but notes from a Colour Group meeting hosted on January 7, 1928, show that there was plans for Spicer-Dufay company representative, John Thorne-Baker, to give a demonstration of the Spicer-Dufay process on November 3 of that year.[82] Her earliest works using Dufaycolor demonstrate a distinct motivation to control the technical quality of the image. Under- and over-exposed images, as well as 'perfect' images contain details of exact technical information including time and date photographed, f-stop and exposure time (Figure 19 and 20 see page 6). This can be interpreted as another means in which to understand Warburg's engagement with colour processes. During this time colour processes shared an intrinsic link to science, and by tracing the technical evolution of film material we see evidence of Warburg as someone deeply involved in the progress of colour photography's technical components. Her practice of documenting technicalities is not seen throughout the entire collection, suggesting that the improvements in technical information around exposure times, colour resolution etc., reduced the need for such meticulous monitoring.

In 1937, Warburg gave a lecture to RPS members on a selection of slides she had made during a trip to Scotland. Evidenced by a series of notes in the collection, these slides were of various sizes and developed at home using various 'brews'.[83] The associated RPS journal review of this lecture indicates that she exposed approximately nine rolls of Dufaycolor film on this trip, and of those 108 photographs captured, the collection holds 77. The institutional model of photographic history suggests that to consider a slide an art object would be unacceptable, but not according to Warburg and her peers. Frank Newens, the Chair of the Colour Group and attendee of lecture said,

"it is difficult to find words to express all they felt about the slides Miss Warburg had shown. They were among the best they had seen and reflected credit on both, Miss Warburg for her beautiful sense of composition and wonderful processing, and on the Dufaycolor process for the way it had reflected the colours."[84]

The meticulous naming, dating and framing of slides were the result of extensive deliberation by the Colour Group. It was decided that in order to display slides in exhibition, the author's name, and an image title had to be written on the margin. Only certain sizes of slides would be considered for display, those being: 3 ¼ x 3 ¼, 4 ¼ x 3 ⅓, 6 ½ x 4 ¾, 8 ½ x 6 ½ inches. All of Warburg's slides are 3 ¼ x 3 ¼. Rules of size only applied to the slide itself–cropping and content decisions rested with the author. Image cropping, likely done using an external camera frame, is frequently seen in this collection. [85]

IV. Additive Colour Screen Printing

Printing from additive colour screen transparencies was a common commercial practice.[86] By producing colour separation negatives, publications could convert slides into prints using pigment, imbibition and dye-mordanting processes. As a result of Warburg's existing expertise in monochrome pigment printing it is safe to assume that she welcomed the opportunity to use these similar print-making processes and techniques in colour. There are several images in the collection that were produced first as Dufaycolor slides and then again as pigment prints. To make a print, separation negatives were created using from the slides using 'block-out' screens. Most companies making additive screen slides, including Dufaycolor, manufactured these screens and they were sold as part of the kit. Block-out screens were "arranged in the same pattern as the original taking screen but blocking out all but one of the colour pattern."[87]

Dye Imbibition Processes

The word imbibition is defined as the absorption of one substance by another; in relation to a photograph, dye is absorbed by gelatin. The earliest notions of dye imbibition processes are attributed to Charles Cros (1842-1888) and Ernest Edwards (1837-1903). "Building on ideas put forward by Edwards in 1875, Charles Cros patented a tri-colour imbibition process called hydrotypie in 1880.[88] Imbibition processes are assembly processes, meaning that "the image is built up by the successive transfer of coloured layers onto a final support."[89] One of the earliest examples of a dye imbibition process was the Sanger-Shepherd process, invented in 1900 by RPS fellow Edward Sanger-Shepherd. Creating a Sanger-Shepherd slide involved exposing three sensitised pieces of celluloid, called matrices, through different coloured filters to create gelatin reliefs. Each relief was then stained in carefully calculated solutions of yellow, cyan and magenta dyes. The coloured reliefs would then be rolled individually onto a separate substrate in perfect registration to create an image.[90] But because the dyes tended to wander, developers seldom printed the images on paper. Instead, they chose to create transparencies by overlaying the matrices and placing them between two pieces of glass. Historically the creation of other imbibition processes would follow on this one, most famously, the Kodak Dye Transfer process in 1946.

V. Colorsnap

Colour Snap Shots London Limited introduced the Colorsnap process in 1929.[91] Colorsnap was a tri-pack system: a singular unit of film containing "three emulsion layers of different sensitivity, each on its own base, used to obtain three separation negatives with a single exposure."[92] As with many other tri-pack systems, Colorsnap was flawed. The tri-pack system required that light pass through all three layers of support and emulsion, which often led to one of more of the negatives being blurred or low in resolution.[93] This issue was so prevalent that Color Snap paid workers to hand-colour monochrome prints from the best of the three negatives from the tri-pack.[94] As a result, this printing process was off the market before the end of 1929, the same year it was introduced. The system was licensed by Agfa-Ansco in America, a company that specialized in film production and printing, but the issues persisted and it discontinued in 1934.[95]

This blurry, high contrast and oversaturated picture is the only Colorsnap print in the Warburg collection (Figure 25 see page 12). My suggestion is that it was the product of a tutorial offered by the Colour Group; however, I cannot establish evidence to confirm this. Meeting notes from April 1932, state that Color Snap Limited was to host a tutorial, though the photograph in the collection is dated 1929.[96] Perhaps there was more than one tutorial hosted; perhaps her exploration of this process was self-guided. This furthers the idea that Warburg's use of such a range of processes was motivated by the technical limitations they presented. Furthermore, it reminds us of her leadership role within the Colour Group that would have kept her aware of changes and developments within the photographic industry.

Pigment Processes

The desire to create images on paper was realized with forms of pigment processes. In comparison to glass-based substrates, a picture on paper was easier to display and circulate, which made paper the ideal substrate. Coloured carbon prints, gum prints and carbro prints are the three types of pigment prints, all of which are present in the Warburg collection. To this day, these pictures are the most stable of all the colour processes; however, at the time of their invention they were difficult and costly to make. Louis Ducos du Hauron was the first to describe ideas around subtractive printing processes on paper, called heliochromy.[97] His logic was the basis of all processes to come; he stated, "If it is true that three colors produce, by the mixture that results from their superposition, all the colors, it follows, per contra, that any picture…may in the mind decompose itself into three pictures, the one red, the other blue, the third yellow, the superposition and incorporation of which reconstitute the same picture."[98]

Creating a set of separation negatives required exposing three black and white panchromatic silver emulsions individually through primary coloured filters. "Each filter selectively absorbs all but its own colour, and the light-sensitive emulsion gets exposed only in the areas that are of the same colour as the filter."[99] However, it would be another 40 years before subtractive pigment processes would gain any momentum. Carbon printing, originally a monochrome process invented by Alphonse Poitevin in 1855, was among the earliest commercially successful pigment processes.[100] But because panchromatic plate emulsions were not manufactured at the time of his invention, the process would not gain attention in relation to colour printing until much later. Because these processes use pigments as opposed to dyes, these photographs look almost exactly as they would have when they were made. Warburg began making pigment prints in the earliest part of her career using gum and carbon techniques. However, beginning in 1908 she began to experiment exclusively with tri-colour carbro printing of various types including the Oxobrome/Raydex process and the War-type, which she invented in 1918.

VI. Gum Printing

Though the gum prints in this collection fall outside the general purview of this discussion, they are central to the emergence of her practice of using colour artistically. The gum printing process was a cornerstone of the pictorialist movement, in part because the final prints often resembled traditional non-photographic fine art prints such as lithographs. Among others, Edward Steichen, Alfred Steiglitz, and Alvin Langdon Coburn were avid users of this process because it allowed for complete control over image contrast, density and tone. The ability to control the final output and select the colour of the pigment suggested a more artistic and evocative final result. Both gum and carbon printing techniques involved re-exposing the original print under one or more layers of pigment suspended in a light-sensitive solution of gum arabic and potassium dichromate.[101] Early colour historian Pam Roberts identifies that nonprofessional pictorial artist/photographers, "such as those who experimented briefly with the autochrome," were primarily among those who took up these complex colour processes on paper.[102] Roberts notes that in an explosion of self-organized exhibitions, photographers experimented with a multitude of colour mediums, and often referred back to 19th century processes including gum printing, hand-colouring, and cyanotypes.[103] This characterization describes Warburg exactly.

It is interesting to consider these images within the larger context of Warburg's oeuvre and practice. Her early engagement with colour both for personal and exhibition purposes further suggests a dedication to the medium and to the pictorialist movement. Ostensibly, her knowledge about the permanence of the pigment print processes would have informed her later work with tri-colour processes. Given that there was no silver in the top gum layer, these images were significantly more stable than competing technologies, like the autochrome. We can interpret her use of these processes as further evidence for how Warburg influenced the direction of colour photography. She chose to work with processes that favored the longevity of colour, a favourable characteristic in the amateur circles that were so focused on display.

VII. Tri-colour Carbro

The tri-colour, or three colour, carbro process was the general term used to describe processes that combined carbon-based pigments and silver bromide printing techniques. Warburg used several tri-colour processes, many of which are identified solely as 'tri-colour carbro'. As a result, I will discuss tri-colour carbro generally, and those processes more specifically identified, Raydex/Ozobrome and the War-type, will be discussed in closer detail in the following section. The term 'carbro' was coined by H.F. Farmer (1860-1926) in 1919 and would become the prevailing printing process of the 1930s due to demand for photographs by magazines and advertising.[104] The Autotype Company of Ealing manufactured and promoted the tri-colour carbro process until after World War II. In their manual they state, "Anyone who has facilities for making contact, or enlarged bromide prints, and can command a supply of water has all the main essentials for making Carbro prints of any size."[105] In this process three black and white separation negatives taken through coloured filters are contact printed onto silver bromide paper containing no gelatin layer. Each wet bromide print is then contacted printed onto its complementary coloured gelatin coated pigment paper: red negative with cyan paper; green negative with magenta paper; and blue negative with yellow paper. A chemical reaction between the bromide print

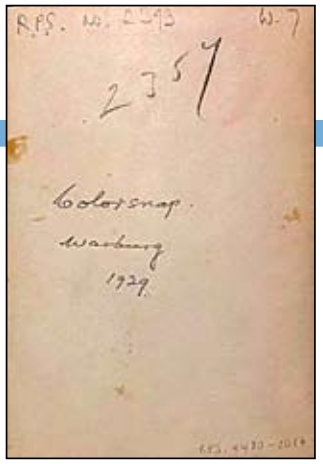


Figure 25. Agnes B. Warburg, *Colorsnap [recto and verso]*, Colorsnap print, 1929 © Victoria and Albert Museum

Figure 27. Agnes B. Warburg, *Untitled*, indigo-tinted carbon print, ca. 1904 © Victoria and Albert Museum

Figure 26. Agnes B. Warburg, *Peonies*, Raydex/Ozobrome process 1912 © Victoria and Albert Museum

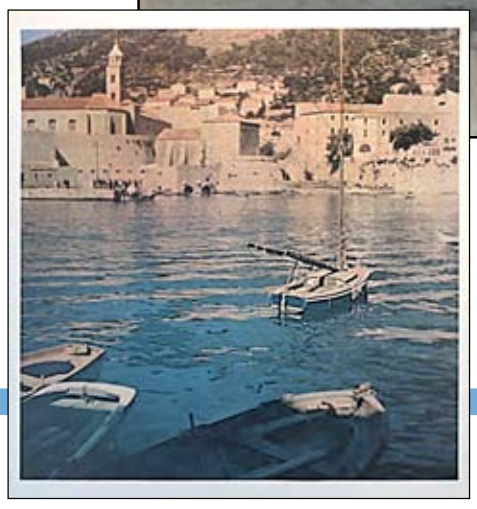


Figure 29. Agnes B. Warburg, *Boats in Dubrovnik*, tri-colour carbro print from Dufaycolor slide, 1936 © Victoria and Albert Museum

Figure 28. Agnes B. Warburg, *Joan E.V. Warburg, sanguine-tinted g*um print, ca. 1904 © Victoria and Albert Museum

Figure 30. Tri-colour carbro storyboard assembled by Agnes Warburg and used during instructional workshop on the process, 1932 © Victoria and Albert Museum

Figure 31. Agnes B. Warburg, *Bougainvillea*, tri-colour carbro process, ca. 1935 © Victoria and Albert Museum

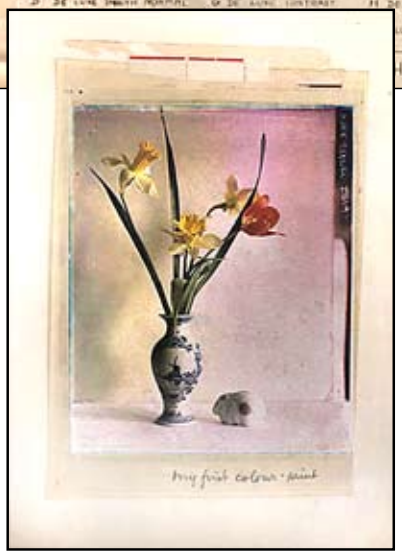


Figure 32. Agnes B. Warburg, *My first colour print*, Raydex (Ozobrome) process, 1908, © Victoria and Albert Museum

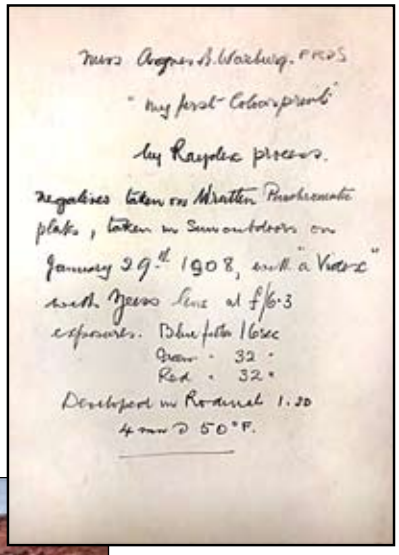


Figure 33. Agnes B. Warburg, *Morning in Africa*, Raydex print, ca. 1925 © Victoria and Albert Museum

and sensitized pigment paper ensues - the bromides are bleached and the gelatin in the pigment paper hardens. The whole image has then been transferred onto the pigment papers and the bromide prints can be discarded. The pigment papers are then submerged in warm water to make the gelatin swell in order to create a larger gelatin relief. The resulting reliefs are then rolled onto celluloid supports and left sandwiched together while the gelatin transfers from the paper to the celluloid. The sandwiches are placed in warm water and peeled apart, leaving the image on the celluloid, and the pigment paper is discarded. Once the three celluloid reliefs have dried, they are soaked in water and rolled in sequence - cyan, magenta, yellow - onto a wet temporary paper support. This part of the process is very lengthy, every piece of celluloid must be left in contact with the paper until it dries and separates itself from the paper. After the celluloid comes off, the paper must be rinsed to remove the waxy residue left behind, otherwise the next layer of pigment will not adhere. This process is repeated for each coloured relief. In the final step, the three-colour image is transferred onto a final paper. With both papers wet, the two are sandwiched and pressed together before being put in warm water where the soluble support is peeled from the final paper.[106] As should be obvious, despite the Autotype Company advertising this process as simple, it was not. It could take days to make a single print.

Nevertheless, Warburg became a tri-colour carbro specialist. She was revered in the RPS community for her proficiency at producing prints across a multitude of tri-colour processes, hosting lectures and workshops in her home, and around London. In a 1931 RPS lecture titled, "Faults and Failures in Colour Photography: Personal Experiences in Carbro" she charismatically discusses the challenges of the process saying, "I feel little bashfulness in speaking to you to-night, because this evening's subject is a much easier one to talk about than its converse, "Success in Colour Photography", and my own experience of faults and failure is so extensive that I think I am fully competent to deal with it." She goes on to explain that she cannot often explain why things go wrong - that there is an element of magic involved saying that only, "some sort of bewitchment can account for the varied and unexpected results which follow apparently identical courses of procedure."[107]

To go into detail on all of Warburg's reviews, lectures, and exhibitions is a subject unto itself. This selection of reviews and quotes is intended to provide an overview of how her work was perceived and how she impacted the larger amateur community and consumers of photography. These analyses offer us a clear way to understand her significance within the RPS and foreground the diversity of her practice with colour photography. Considering this breadth of textual material outside the context of the RPS gives both Warburg and her photographs new meaning as a significant figure in the history of photography that extends beyond the amateur organizations.

VIII. Raydex / Ozobrome

Thomas Manly, a fellow of the RPS, introduced the Ozobrome process in 1905. Originally released as a monochrome process with twelve different colour options, it was based on carbon printing techniques dating from the late 19th century.[108] The Ozobrome process was based on carbon printing methods, except it used a bromide print instead of a negative to create the final picture – "the printing is done not by the presence of light – but by chemical reaction."[109] Sometimes referred to as the "evening carbon process," the fact that Ozobrome prints could be made without the presence of light was a major selling point of this process. Photographs conservator Sylvie Penichon describes the process: "the pigment paper called 'Ozobrome pigment plaster', was not exposed to light through a negative but was squeegeed firmly to the surface of a wet gelatin silver bromide print immediately after it had been soaked in a sensitizing and bleaching bath, called 'Ozobrome pigmenting solution.'"[110] Once the papers were placed together the ensuing chemical reaction took approximately 15 minutes to complete. Similar to the carbro process described in the previous section, this reaction "bleached the bromide and cemented the pigmented gelatin in place relative to the proportion of silver that was present on the image."[111] The bromide print was then removed and the pigment paper squeegeed onto a new paper substrate. The resultant image was turned face down and rested on the top of a warm water to wash away the unhardened gelatin.[112]

In 1913, Samuel Manners purchased the rights to the process and began marketing it as three-colour process called Raydex. It was sold as a complete kit, containing all necessary materials and was considered to be the first colour process that would enable the average amateur photographer to create a colour image.[113] Manners stated, "Once the bromide prints are made the process becomes automatic, as everything is so systematized that only ordinary care and a little practice are required to produce satisfactory results."[114] Raydex materials were available until the late 1920s when the process was replaced by other tri-colour carbro processes.

Warburg's first tri-colour print was made using the Raydex/ Ozobrome process (Figure 32 see page 13). In annotations on the verso of the prints she specifies the details of the process saying, "My first colour print, by Raydex process; Negatives taken on Wratten Panchromatic plates; taken in sun outdoors on January 29th 1908; with a "Videx" with a Zeiss lens at f/6.3. Exposures: blue filter, 16 sec; green, 32 sec; red, 32 sec; developed in Rodinal 1.20 4 min at 50°F." Because the Raydex process was Ozobrome until 1913, I suggest that this, along with several other prints in the collection, was notated retroactively. It is interesting to note that this is one of few times that she references the camera she was using. The Videx reflex plate camera was the best-known camera manufactured by Adams & Company, London.[115] It had a built-in tray for colour filters and was designed for plates sized 12 x 16.5cm, the approximate size of the "My first colour print."[116]

With the Raydex process Warburg predominantly captured still life and landscape subjects. She displayed these prints in exhibition well into the 1920s, including a selection of prints at the 'Graphic and Photographic Art" exhibition in August

1925. Despite the Raydex process sharing so many ties to graphic art production, the reviewer noted that of the works displayed none of them exhibited any "graphic efforts."[117] Later that year, Warburg's photographs were displayed and reviewed in the 70th annual RPS exhibition. The exhibition critic was fellow photographer Fred Hollyer, and he noted that control of colour prints is "sometimes so obvious, that the prints would be better suited in a watercolour exhibition than a photographic one."[118] The balance of maintaining a pictorial aesthetic without compromising the photographic qualities was clearly difficult to maintain. Hollyer goes on to reinforce pictorial themes, saying that the Raydex process was the best process for accurately reproducing the negative, but that black and white bromoil prints were preferred for depicting more personal expression.[119] These are only a few examples of many RPS exhibitions in which her photographs were displayed. Of a print displayed at the largest and arguably most important exhibition of the year, the RPS Annual Exhibition, critic and colleague Frank Newens recalls,

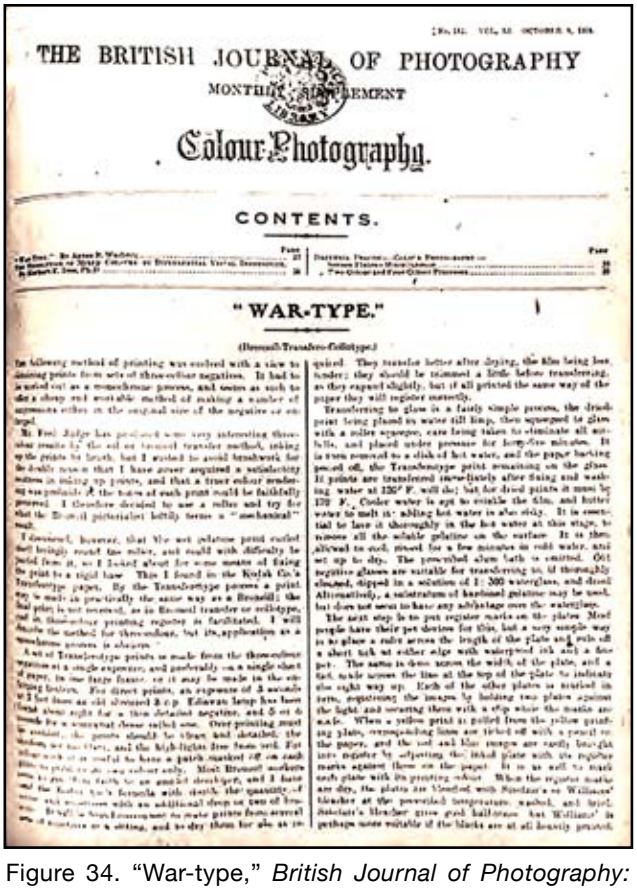
"In no. 558 *Morning in Africa* Miss A.B. Warburg shows her accustomed flair for composition and massing of colour…I always commend her abilities in seeing the pictorial possibilities of the landscape around her." [120] (Figure 33 see page 13)

Over the course of nearly three decades that Warburg spent working with colour prints her work was seen and interpreted in different ways, some commending her pictorial work in colour and others not. What is clear however, is her commitment to tri-colour printing despite the difficulties that accompanied both the prints production and public reception. Evidently, she was not concerned with how her photographs fit into the institutional and museum models of fine art and was content with existing within the amateur sphere and making art for art's sake.

IX. War-type

Warburg invented her own process, the War-type in 1918. The process was published in the October issue of the *British Journal of Photography's Colour Supplement*, but like many colour processes that came to fruition during this time, it did not gain traction commercially. However, her invention of this process represents the crux of this research – it allows us to situate Warburg alongside other influential manufacturers and scientists who were working towards the same goal of making colour accessible to all. As stated in the article, her motivation to develop this process stemmed from dissatisfaction with other tri-colour processes. Though the War-type was never manufactured or used commercially, it is emblematic of her significance within history insofar as it represents her efforts to shape the development of colour photography, and again, it establishes the importance of the study of amateurism when considering the history of colour photography during this time period.

The War-type was a 'bromoiltransfero-collotype'. Like most other three colour processes it involved the use of separation negatives, but also involved the commercial, photomechanical collotype process that was invented by Alphonse Poitevin in 1856. The collotype was used to mass-produce black and white prints and in theory, integrating this process would make the War-type a cheaper and more workable printing process.[121] The multi-step War-type process required transferring three sets of colour reliefs onto a final paper substrate. Where a normal tri-colour print would use a silver bromide print to transfer onto pigment papers, War-type used bromoil prints – an alternative that had been tested by her RPS colleague Fred Judge. Warburg notes that Judge brushed the bromoil solution onto the papers and Warburg did not like this technique for two reasons. Warburg states, "I have never acquired a satisfactory neatness in inking up prints, and


THE BRITISH JOURNAL OF PHOTOGRAPHY

MONTHLY SUPPLEMENT

Colour Photography.

CONTENTS.

"WAR-TYPE."

Figure 34. "War-type," *British Journal of Photography: Colour Supplement* 11, (No. 134 October 4, 1918): 37.

that a truer colour rendering was probable if the tones of each print could be faithfully preserved. I therefore decided to use a roller and try for what the Bromoil pictorialist loftily terms a "mechanical" result."[122] However, in doing this Warburg found that the "wet gelatin paper curled itself lovingly round the roller and could with difficulty be parted from it."[123] In order to limit the problem she used Kodak's Transferotype papers, which came fixed onto a rigid base. The process is described in great detail: exposure times for negatives; her experiences with various developers and why she uses what she does; and the step-by-step process for creating a War-type image including her personal tips. Unfortunately, War-type images are not directly identified in the collection, nor were they featured in any exhibitions under their process name, instead likely listing themselves as 'tri-colour print[s].'

Conclusion

To understand Agnes Warburg's photographs and practice is to understand the many facets that made up her career. Through her extensive work with nine processes (and possibly more), participation in salon exhibitions in the UK, and her deep involvement in the Royal Photographic Society's Colour Group, this paper has identified her as an important early 'colour photographer' dedicated to seeing photographically in colour. This paper has served as an entry point into her life and work, as well as having also opened up some broader ideas around the significance of amateurism in Britain and the RPS community. This paper demonstrates the role that amateur photographers played in furthering the development of colour photography among its users, and as such, enables us to understand how photographers like Warburg shaped the artistic and scientific landscape of colour photography. Warburg was an unusual and eccentric woman with few interests outside of photography. She and her associates carried a distinct set of values centered on personal and photographic sociability enmeshed with artistic, cultural and scientific significance. In choosing her path as an amateur, Warburg was able to carry out her personal aspirations for the medium irrespective of reward or acknowledgement. The Colour Group and the RPS gave her a platform in which to disseminate her vast photographic knowledge and values, without a doubt leaving a lasting impact on those who she taught, inspired and supported in making colour photographs.

Warburg was a transitional figure whose career is emblematic of colour photography's technical and artistic evolution between 1907 and 1945. She began by making quintessentially pictorial photographs using black and white materials and quickly progressed to become one of only a few photographers dedicated to seeing that colour photographs enter the pantheon of fine arts in the early 1900s. Her approach to photographing and printing in colour enriched the pictorialist iconography of still life and landscapes through a varied approach to process, and a continuously evolving approach to her subjects. Her work subtly evokes a different type of pictorialism by demonstrating an awareness of human presence that is not otherwise seen in the works of her contemporaries working with colour artistically. Later in her career, as a result of new and better forms of photographic technology and an awareness of photographic trends, she bridged the romantic, art-minded structures of pictorialism with notions of 'straight' and documentary photography. However, my claim about her influence may have looked quite different had she not been so wealthy: more likely than not, she would have had to work commercially, limiting her artistic exploration with colour and perhaps changing the scope of her impact. Further research into her personal inspirations and network is required in order for us to gain a clearer idea of what was informing her choices, work methods and personal motivations.

This research has illuminated the breadth of opportunity for discovery within the RPS collections of early colour work. This research has attempted to shed light onto photography's dark ages – the period between the autochrome in 1907 and Kodachrome in 1935. This was a time fraught with chaos and challenges within the fields of colour photography but also great excitement, diversity and collaboration. Through investigation of Warburg's practice using platinum, carbon, gum arabic, the War-type, Raydex/Ozobrome, autochrome, Dufaycolor, additive screen printing, Colorsnap, and miscellaneous other tri-colour processes, we gain an understanding of a portion of the diversity of activity and the climate of experimentation taking place within this time period. Furthermore, we come to understand the technicalities of these processes as well as the social environment in which she was working, which bolstered her ability to pursue such a wide range of activities. By virtue of her role as a founder of the Colour Group, Warburg was privy to every aspect of colour photography's evolution during that thirty-year period. She had no interest in having her work acquired or displayed by a museum, because to her 'colour photography' was more than simply capturing or creating a pictorial scene and broader than its commercial associations that limited it to print and advertising. The Colour Group and the RPS allowed her to pursue colour photography on her own terms, and subliminally, she characterized the term 'colour photographer' within the field of photography.

Her work and life appear to have been tightly interwoven with the RPS. And as a result, more research into the interconnections of the RPS Colour Group and the public and professional networks surrounding colour photography could further elaborate Warburg's biography and our understanding of her work. Investigation into the collections of works made by Colour Group members in the RPS collection at the V&A, including Frank Newens, F.G. Tutton, and Violet Blaiklock, to name only a few, would also likely further support Warburg's biography and our understanding of her work. This paper serves as a good first step towards getting to know a collection that is only in its earliest days of research. The unprecedented access offered by the V&A has breathed new life into RPS collection and gradually, as researchers continue to reveal the seemingly limitless opportunities within the early colour collections at the V&A, we will gain a better understanding of what I have started here.

When refiguring the predominant photographic history of colour, it is essential to account for the huge range of activities undertaken by expansive groups like the RPS that perpetuated much of the success in photography's technical and artistic evolution. Warburg's selective oeuvre offers those of us studying her work her very best examples. There are no duplicates – her faults and failures are not captured in the collection despite mistake and experimentation being inseparable from the time period. Like many photographers both before and after her, Warburg destroyed a selection of her photographs before death in order to self-identify and memorialize her career. It is my hope that by considering Agnes Warburg and her photographs outside the confines of the RPS network, I have been able to bring both her dynamic character and her photographs to light and to establish her significance within the larger history of photography. ❧

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93 Coote, *The Illustrated History of Colour Photography*, 108.

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118 Fredrik Hollyer, "The Charm of Colour: A Review of the Pictorial Prints and Transparency Section," *The Photographic Journal* 65, no. 10 (October 1925): 67.

119 Ibid., 67.

120 Frank Newens, "Colour Prints and Transparencies: Raydex," *The Photographic Journal* 74, no. 11 (November 1934): 494.

121 Agnes B. Warburg, "War-type," *British Journal of Photography: Colour Supplement* 11, no. 134 (October 4, 1918) 37.

122 Warburg, "War-type," *British Journal of Photography*, 37.

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A TREASURE FROM MY COLLECTION...

JOHN KANTYMIR'S VELOCIGRAPHE CAMERA

JOHN KANTYMIR

LABEL AFFIXED TO SIDE OF CAMERA

MAHOGANY CAMERA WITHOUT CASE

A very long time ago when I was a teenager, I had several camera collecting books that I thoroughly enjoyed. Auer, Abring, McKeown and Gilbert were my favourites, and this Velocigraphe was one of the cameras in the books that I always desired. Over the years my dad and I always kept an open eye for one of these but never even managed to get a chance to buy one.

A very long time ago we purchased a Photo Canon tintype camera from a gentleman living in New York City and I always tried to keep in contact with him. One day I received a message that he had a Velocigraphe in excellent condition with the original case that he was willing to part with. A flurry of messages back-and-forth resulted in a deal we could both live with, and the camera was on its way to me. After what seemed like years (actually less than two weeks) it was finally in my hands and I was so happy to have finally landed such a beautiful specimen.

The Velocigraphe is a beautifully-built, polished-wood "falling plate" camera designed by Étienne Ricard and Jean-Baptiste-Joseph Lacroix. It was made in Paris by Hermagis in the early 1890s. What makes it most interesting is the hard leather case which turns it into a detective camera. All the controls are accessible on the front of the camera which, when not in use, is hidden by the leather cover. It was considered a detective camera since one only had to drop the front cover, adjust the helical lens, and trip the shutter (which also triggered the plate changing mechanism). In order to remove the case, the leather handle must be removed revealing the polished mahogany camera body. Unfortunately on my example the case is very tight to the camera and I have been unable to remove it without damaging the leather case.

The 140 mm Aplanastigmat No.8 lens is mounted in a helical mount; a seven speed shutter is mounted behind the lens, and the plate mechanism is controlled by a lever beside the lens. All metal parts are nickel plated and the mechanism is very well produced.

This is the smaller 9x12 cm model for 12 plates and was not an inexpensive camera. In 1892 the original price of 330 French francs is the equivalent of approximately $1775 US dollars today. ❧

LA NATURE de 1899

PHOTO-GAZETTE de 1892


LES VÉLOCIGRAPHES

Les **Vélocigraphes** inventés par le Docteur Bicard, sont très appréciés à cause de leur fabrication de premier ordre. Ils sont munis d'objectifs extra-rapides Hermagis. Magasin de 12 plaques, obturateur à pose et instantanés.

Modèle	9 × 12	330 »
—	13 × 18	500 »
Stéréoscopique	8 × 16	450 »
—	9 × 18	485 »

Ces prix comprient la guine en cuir fort, vache unie, formant sac à excursion.

COMPTOIR GENERAL DE PHOTOGRAPHIE de 1894


LES VELOCIGRAPHES

POUR PLAQUES DIMENSION 9 × 12

330 francs.

Fig. 11.

Fig. 12.

POUR PLAQUES DIMENSION 13 × 18

495 francs.

PHOTO-HALL de 1896

THE 9X12 CM VELOCIGRAPHE WITH FRONT DROPPED TO SET SHUTTER AND EXPOSURE

HARD LEATHER CASE – CLOSED

FACE SHOWING LENS AND SHUTTER

140MM APLANASTIGMAT LENS

BACK REVEALING DROP PLATE

Photographs by John Kantymir

JOHN LINSKY'S PRIVATE COLLECTION...

MANY YEAR'S OF ODD COLLECTING

by John Linsky

JOHN LINSKY

THE BELL & HOWELL FILMO 75

Looking back over many years of collecting, I can relive fine moments of searching the many fairs and coming across a fine treasure that has brought me much pleasure. Now with father time pressing on I will have to find new homes for many of them..... We only have the pleasure of holding them for a short while, then must pass them onto new collectors.

To the left, I'm drawn to the Bell & Howell FILMO model #75 with an intricately tooled leather covering its whole body. The elaborate design bears remnants of the Art Nouveau movement. The camera was issued in 1928 as a 16mm cine camera taking 100 foot rolls. It has a spring motor and operates at 16fps. It has a Taylor Hobson f3.5 / 20mm fixed focus lens. A fond memory indeed.

On the other page I show two golden tweety birds (often referred to as "songsters") that photographers used to keep children happy and attentive. The bases are heavy to allow the birds to stand upright. But at the same time the bases are magnetic to cling to any metal close to the camera. Air-tubing ran to the stem of the bird enabling the camera operator to blow air and make the birds warble musically. These birds could flutter their wings and make their tails twitch making them more attractive. So started the phrase: LOOK AT THE BIRDY!

Here, I have a small version of the Zeotrope with which any child could experience the thrill of moving pictures. A band of variable printed images was placed inside the black cup which was given a spin on its base. One could glimpse the flickering inner image through the opposite passing slot. As each image was slightly different you experienced the effect of motion of the subject. Six different tapes were included with the kit.

This (Emil) Busche Pantoskop lens of Rathernow, Germany made quite a stir on the market ca1905 as it enable photographers to take wide-angle images that were impossible with other lenses. It was a true anastigmatic lens with external lenses of crown glass and internal lenses in flint. The curvature of its lenses was more pronounced than its predecessor, like the Harriston Globe. Very thin glass was required, making it difficult to manufacture. This Pantoskop No. 4 f/22 F:17cm came with a set of Waterhouse stops and a leather protective case.

My last offering is an early instantaneous shutter by J. Lancaster & Son (ca1890+) which the company boasted as selling over 30,000 units. Their advertising reads: "With this Patent Shutter almost any exposure may be given, as [elastic] bands of all strengths may be used, and two or three may be used at the same time; an exposure of 100th of a second can be obtained." ❧

THE TWEETY BIRDS/ SONGSTERS

THE MOVIEMOTION ZEOTROPE KIT

Photographs by Robert Lansdale

THE EMIL BUSCHE PANTOSKOP LENS

LANCASTER INSTANTANEOUS SHUTTER

A MYSTERY FROM JOHN KRUG

WHERE WAS THIS PICTURE TAKEN?

by Robert Lansdale

ROCHESTER OPTICAL STANDARD FIELD CAMERA

John Krug of *Photographersofontario.ca* is seeking our help to find out where this photograph was taken. He believes: "The group photo we think is a local club in my home town (Tavistock, Ontario) and don't know if anyone is a photographer. Could it be a visual arts club? Social clubs were big at the time as there was little else to do in a small town unless you were into sports."

"It's possible that the photo was taken by Tavistock photographer A. O. Murray. Don't know if the cameras are the type that an amateur would own. The left one looks rather large for amateur use."

I, on the other hand, definitely think this is a group photo of the staff of a photo gallery each holding the sign of their trade. The women and man at the left-front are artists; the man at front-right is a darkroom man with printing frame in hand; the woman above him has a pencil or brush poking out of her costume which might indicate a secretary or accountant. On the back row we have at right a young man with a camera-on-stand holding his hat which might indicate he is the outside photographer; the woman in the middle is most likely the receptionist while the man at left holding a lens cap is the inside photographer. Krug comments that: "Tavistock is a small town, about 800 people at the time. In the 1901 census, the only person with a profession in any way was Murray himself. A studio just couldn't afford to have a large staff".

That little bit of background, at the upper left, showing windows might give us a clue if we can find the same background in another portrait – thus revealing the photographer. Can anyone give us some help?

As to the cameras being of professional or amateur use: the large camera at left is definitely professional for portraits. It is unable to be identified but the elaborate stand underneath seems quite old and bulky compared to ca1900 stands which used metal bracings. The smaller camera, at right, has the hall-marks of a number of manufacturers who all seem to have the same face pattern. But few had the lower label as seen in this Anthony Champion Variation 1A (below).

John sent another photograph he hoped we could identify (in the upper right). Its metal trimmings soon identified it as a Rochester Optical Standard camera probably used for outdoor photographs.

This site was most useful for researching both camera images and catalogues: http://www.piercevaubel.com/cam/index.htm. Manufacturers are individually indexed with images enlarged to many; catalogues are awesome. ❧

RYERSON AWARDS FOR BEST PICTURE BOOK

PHSC SUPPORTS AWARDS

by Ashley Cook

Opening night of show and presentations.

Photographs Courtesy of Ryerson University

Sample books of the 80 submissions.

Visitors and friends check over the winning entries of the *First Edition Photobook.*

Photographs by Clint Hryhorijiw

A few of the winners with PHSC presenter Ashley Cook. Left to right are: Jordanna Petruccelli, Ashley Cook, Tegan Lopes, Austin Waddell, and Gabriell Tyrie who were in attendance.

In August 2019, Joanna Beyersbergen of the Ryerson University Library placed a proposal to the executive of the PHSC to participate in their *First Edition Photobook Award* as given by the Ryerson Library to the top books created by Ryerson University Photography Studies students as part of their course work.

Each year the Library purchases the top books in the class for fair market value. The award-winning books become part of Ryerson Library's Special Collections, which is noteworthy for its robust collections related to photography. The books are exhibited at the Library's Archives and Special Collections for some weeks and occasionally future exhibits. Of course, the books which now house those of 32 past award winners, become teaching tools and inspiration for new students.

The PHSC heartily supported the project with a multi-year donation of $2,000/year for five years which enables the Library to increase the number of awards and to acquire more of these outstanding works.

This year's School of Image Arts awards ceremony and reception saw seven winners presented with their prizes by PHSC Vice President Ashley Cook to Teagan Lopes, Samuel Toward, Austin Waddell, Gabriell Tyrie, Yarden Haddie, Julie Ng and Jordana Petruccelli.

The reception had visitors and students circulating to view the results of the student's creative efforts during their one-term third-year course, which teaches design and composition principles. Students conceive and produce a photobook based on their own photography. The completed books are judged at an end-of-semester exhibition. Originally done by the course professor and the Special Collections librarian, additional experts have been invited to help adjudicate in recent years. The *First Edition Photobook Award* was instituted in 2015 by Library Special Collections Curatorial Specialist Alison Skyrme and Image Arts Instructor Christopher Manson to recognize photography students who have made exceptional achievements in photobook production. ❧

FROM OUR EXCHANGE MEMBER IN ROCHESTER

A REPRINT FROM THE TPHS NEWSLETTER, MARCH 2020

by Bruce Tyo

WHEN KODAK AND GRAFLEX WERE ONE

In December 1899 when five camera manufacturers combined to form the Rochester Optical and Camera Company (ROC), George Eastman was not at first antagonistic toward the merger. But he soon judged that the newly forming company, which did not manufacture film or glass plates, was a threat to his business if they turned to the mass production of small simple cameras

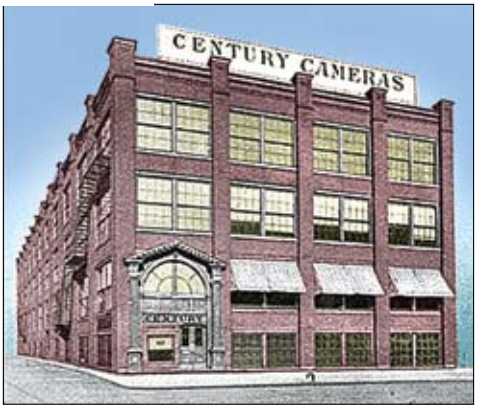
ROCHESTER OPTICAL AD

for the amateur market where his Eastman Kodak Company was overwhelmmingly successful. He threatened William Carlton, president of Rochester Optical, with an injunction to stop the merger because they were monopolizing the camera industry, but later relented when Carlton agreed to make Eastman Kodak's stores the exclusive sellers of ROC cameras in the United States. This allowed Eastman to control the distribution and sales of ROC cameras nationwide and would eventually lead to ROC failure in 1903.

To George Eastman having total control of ROC's sales did not end the possible threat that Rochester Optical represented to his company, it only delayed it, and the merger had exposed a weakness the highly successful Eastman Kodak Company had – that, although it had a huge market share worldwide in amateur camera sales with its Kodak and Brownie cameras and a near monopoly in the manufacture of flexible photographic film and dry glass plates worldwide, the company had almost no cameras to offer to professional photographers and had left that market to others in the United States and Europe as well.

Over the previous twenty years since the formation of the Eastman Dry Plate Company in 1881, George Eastman had continually made an effort to acquire competitors to incorporate their technology and products into his organization. This included such diverse organizations as Blair Camera and the Stanley Dry Plate Co. He now decided to do the same and build a professional division for the newly formed Eastman Kodak Company by purchasing the factories, inventory, and patents of successful manufactures utilizing the huge profits Kodak was generating from camera and film sales worldwide. The first company Eastman targeted and acquired was Rochester Optical and Camera itself. Despite making a line of quality cameras and darkroom equipment, it was poorly managed and running huge losses, resulting in its collapse in August 1903. Eastman bought the company for roughly one tenth of what it had been capitalized for three years before. At the same time he obtained their patents, including the one for the film pack, and the Premo brand name. Initially operating outside of Kodak, it took five years for George Eastman to pay to pay off the company's debt, it became the Rochester Optical Division of Kodak in 1908.

At the same time in 1903, Eastman concluded the purchase of the highly successful Century Camera Company, which was also in Rochester, and made Century's three owners/investors directors in his company to manage Kodak's Century



CENTURY CAMERA BUILDING

Division. Century was organized in 1900 and had quickly become recognized as one of the finest builders of folding cameras in the country. They had developed an interesting feature for their cameras, a revolving ground glass back, which allowed the camera to switch from a vertical to horizontal format with the release of a latch on the side of the camera body. This feature was soon to be incorporated into Kodak cameras as well.

The next year, even though the inventors had yet to release their newly designed wide-angle cameras onto the professional market, Eastman bought the Rochester Panoramic Camera Company which held the patents for what was to become the highly successful Cirkut camera and it was soon being produced by the Century Division.

EASTMAN KODAK BUILDINGS ROCHESTER

In 1905, Eastman completed the purchase of the Folmer and Schwing Manufacturing Company of New York City and moved its assets into the old Rochester Optical factory. Folmer and Schwing had begun as a maker of gas light fixtures and chandeliers twenty years before and later sold Sterling bicycles. They had also developed a series of cameras that could be carried on their bicycles as well. The Folmer– Schwing division of the company was organized in 1906, and it was renamed the Folmer–Schwing department when a second general reorganization of Eastman Kodak occurred in 1917. William Folmer, a prolific inventor that Eastman compared to William Walker in ability, also came to Rochester and was put in charge of the new division. He would remain as managing director until 1926.

WILLIAM FOLMER

By 1915, George Eastman had completed the acquisition of twenty-one dry plate, photographic paper, camera, and film base competitors and had shut them all down. He moved some assets to Rochester and folded them and their employees into his corporate structure. But at the same time Eastman Kodak's expansion drew the attention of the U.S. government which then charged that the company held a 72 percent monopoly worldwide and directed them to divest itself of some of its assets. The company appealed the decision over and over again, but by 1921 had no choice but to begin the break-up of the huge conglomerate that Eastman had built over the previous twenty years.

SEED DRY PLATE BY CANADIAN KODAK

Although the decision could have disastrous results for the company, it eventually only made a brief impression on Kodak's bottom line as the company was allowed to retain its highly profitable film and motion picture film capability and kept its dominance in the lucrative amateur photography market. They make a decision to end the manufacture of Premo film pack cameras for amateur use manufactured by the Rochester Optical Department and then to shut the department down entirely. The photographic paper assets were sold to the Defender Photo and Supply Co. of Rochester, and they disposed of the Seed, Stanley, and Standard Glass Plate operations.

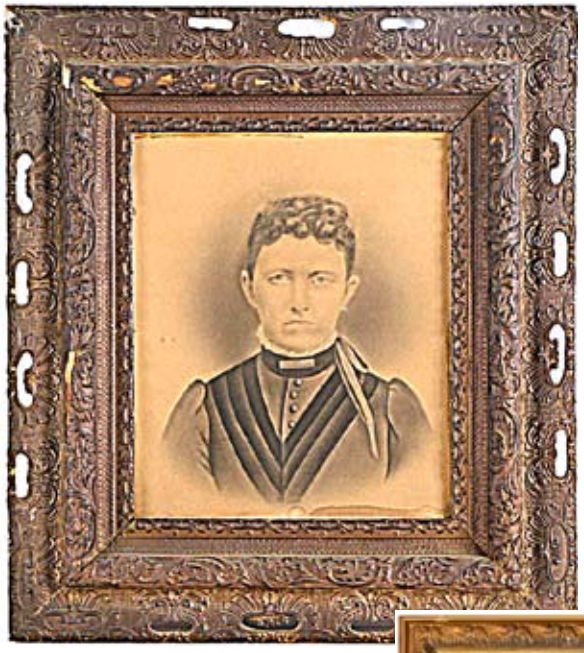
The Folmer-Century Department of the company was sold to Clark Williams & Co. of New York City in 1926. The newly formed organization, now entirely removed from Eastman Kodak, was to remain in Rochester and would manufacture cameras as the Folmer-Graflex Company. The Folmer-Century Department of Eastman Kodak had also taken over the manufacture of Cirkut cameras years before and Folmer-Graflex would continue to make these complicated and expensive cameras until the late 1940s. In 1946, it was renamed Graflex Inc., and it became a division of General Instrument Precision Co. in 1956. In 1968, suffering losses in competition with the growing 35mm camera industry, its assets were sold to Singer Corporation which finally decided to cease operations in the early 1970s.

EARLY SPEED GRAPHIC CAMERA

During its time as part of Kodak, the Folmer–Schwing Division and the Folmer–Century Department had built some of the most highly recognized professional cameras to come into general use by 1912, including the Speed Graphic and the RB (Rotating Back) focal plane shutter cameras, and fulfilled George Eastman's desire to create a professional division for Eastman Kodak that was unchallenged for years. ❧

THE CRAYON PROCESS
ENLARGED PORTRAIT PRINTS

by Robert Lansdale



Typical Crayon portrait with period "carved" frame found now-a-days in antique fairs and shops. Mostly found as B&W artwork from factory-lab production.

Enlarged portraits of great grandparents, now often found in antique fairs and shops, came to the forefront with the invention of the widely successful solar enlarger by David A. Woodward in 1857. The solar camera came in two sizes, half plate with a big nine inch condenser, and quarter plate with a five inch condenser. Woodward, as a portrait painter, was interested in making enlarged copies of photographs on canvas to paint over. Using this instrument he could print life-sized portraits (18"X 22") from a half plate negative in about 45 minutes.

But the enlargement, more often, fell apart in detail and showed its ugliness and flaws. So artists were set to work to over-paint the details to make the portrait beautiful or at least improved, depending on the artist's skills and talent.

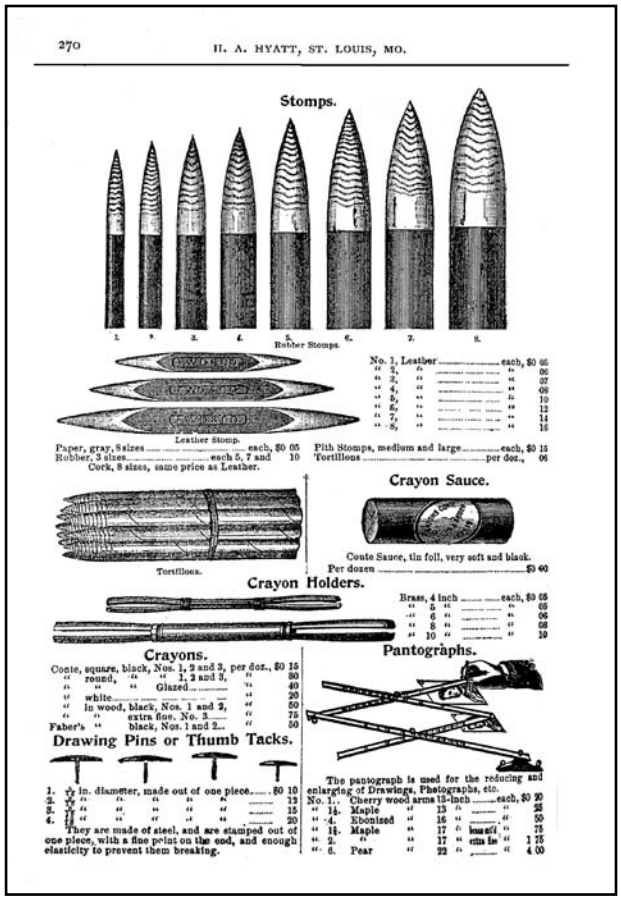
An over-painting system developed for daubing on water-based tempura paint with a blunted paper taper, called a stomp. This was a rolled-up paper or leather, like a pencil, with a sharp tapered end for detailing OR could be blunted down on the end for broad stroke effects

The colouring (Conte sauce) was referred to as "crayon sauce" and so passed on its name to the process. Wetting the end of a blunted stomp into shades of black-to-white, the paint was transferred to the print in a series of daubs to match and maintain the shade and shape of the image. Most images seem to have been done in black and white but others were done in colour.

Audrey Mason queried PHSC about an old family picture stored in her garage from which they wanted to re-purpose the frame. With such a fine colour Crayon, we advised to preserve the art piece in a local archive. Impressed, she reassembled the picture and moved it to an honoured place in her home. The print was mounted with a metal (lead) backing.

Joan Seed queried what kind of photograph this portrait might be in an oval frame. The quality shows great talent of the artist to produce a living portrait through the Crayon process. Restored with loving care, the art piece and ornate frame could be finished off with a convex bubble glass cover to fit the times. The metal (lead) backing/support protected the print from damage, whereas wooden-shingle backing would eventually have stained or discoloured the image.

Factory-labs were soon set-up in larger cities to handle the manufacture on a production basis. Salesmen were sent to scour the suburban communities with samples of completed work. Mounted on window-blind canvas, there were usually four examples of the best quality which could be rolled up into a protective cover against bad weather. Town photographers protested against the salesmen as they were taking money out of their communities without paying taxes or securing a license. Of course there were schemers who secured sales and deposits, then absconded with the funds and never came back. Those buying into the enticing bargain price ($3.50) found they had to pay a hefty additional fee for the frame when the finished product was delivered. An existing Cabinet portrait was requested by the pitchman from which to copy the head. Often artwork was applied around the head to separate the image from the background making it easier for the artist to complete the crayon artwork.

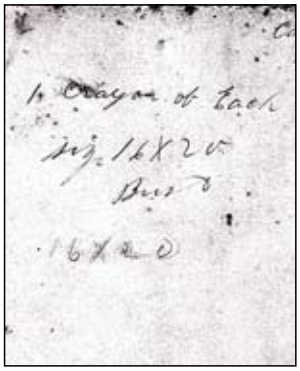


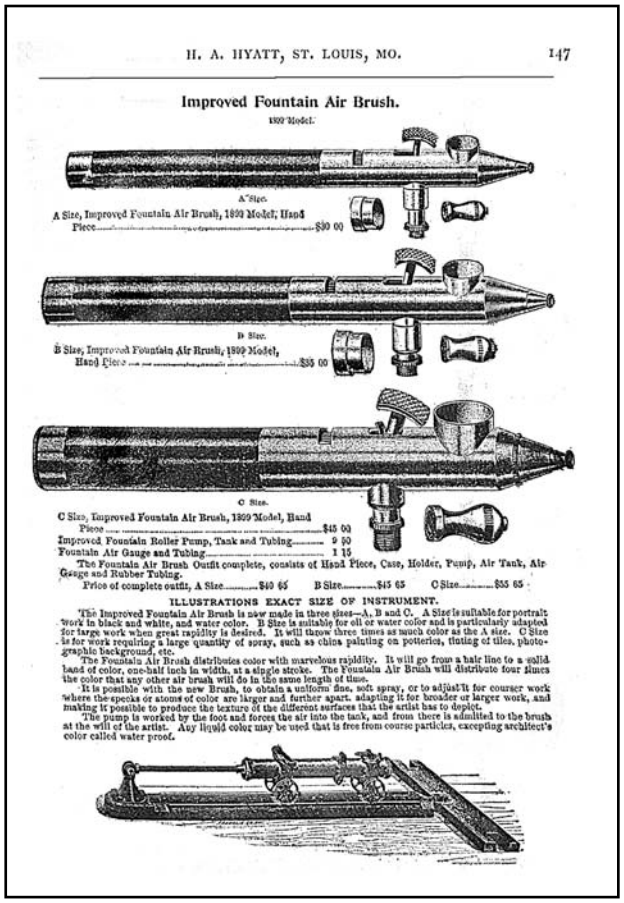
H.A. Hyatt catalogue of 1899 shows stomps and crayon sauce.


Dealer shows a crayon art sample.

Portrait used for crayon copy.


Images on linen secured to large dowel with frame sample page.

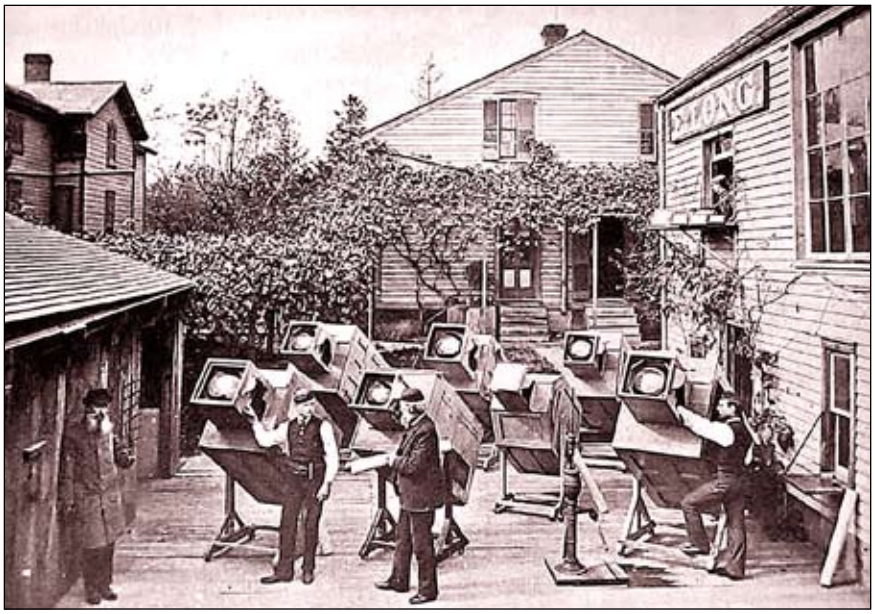

Cabinet card has indications of painting to separate head from background. Verso has details for 16x20 Crayon of each.



H.A. Hyatt catalogue shows variety of Air Brush units current in 1899 and power unit for the required compressed air.

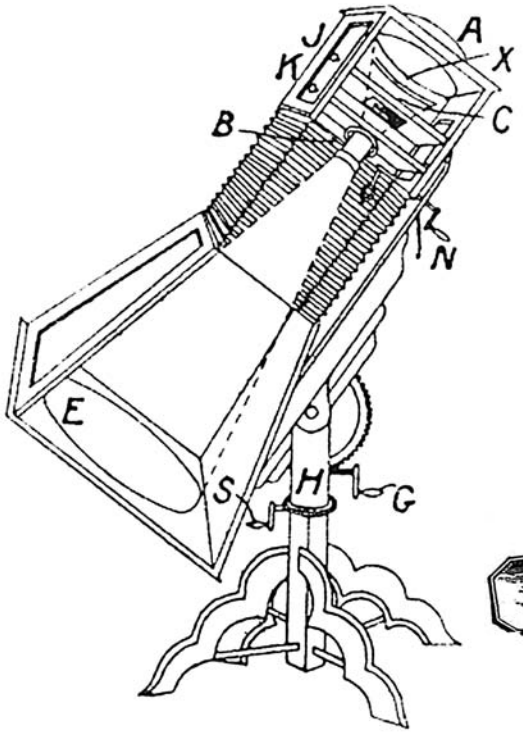
The American Copying Co. of Chicago advertised for agents to venture forth as their Crayon salesmen with a free outfit.

J. H. Cline of Toronto offered commercial enlarging services for lab processes which photo studios could not handle.

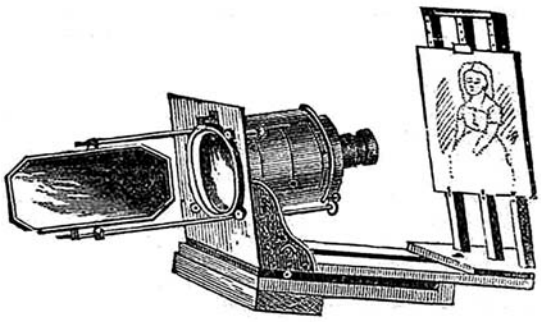


Photograph Courtesy of Matthew Isenburg

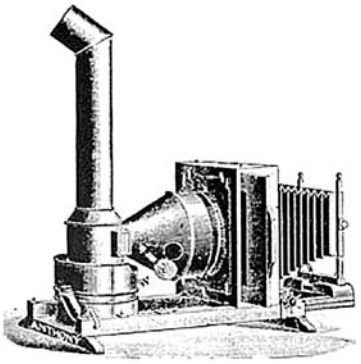
Solar cameras were set up in yards and on roofs of photo studios. Cameras had to be adjusted to follow the sun, others had auto-heliostats.



A large solar camera was patented by David Shrive of Philadelphia in 1859 used outside in the open air.



In 1874, David A. Woodward patented a modified instrument mounted in a darkroom window. A mirror directed sunlight into the unit.



Faster Bromide paper of 1880+ had inventors create enlargers using gas etc. for illumination.

It was imperative to keep the enlarger/camera pointing towards the sun as it moved across the sky. So the image was deliberately under-printed to prevent blurring during the long exposures on albumen or salted papers. Groups of enlargers were arranged in open yards or on roofs. Photographers could also mount an enlarger in an attic with a removable roof.

In 1874, Woodward patented a modified instrument that could be mounted within a darkroom window to redirect the sunlight with a mirror to project an image onto an easel inside the darkened room. Independent photographers took up the system but others relied on shopping-out the order to the factory labs. J.H. Cline on Spadina Avenue in Toronto offered a full-lab service in 1894 for Electric Solar Prints, Canvas Prints, Bromide Prints, Crayons, Air Brush, India Ink, Water Colours and Oil. He offered finished work for the Trade.

The arrival, in the 1880s, of the Bromide process produced photographic paper with much greater speed. So lantern projectors were converted to enlargers; they were equipped using acetylene or other gases and illuminants. This enabled more photographers to venture into enlarging of prints and working productively during free evenings.

The biggest advance in crayon portrait production came with the invention of the air brush by Abner Peeler with a patent in April 1882. He sold his first "Paint Distributor" for $10. A subsequent new assignee Liberty Walkup and brother Charles promoted and improved it with Peeler's help. But Charles Burdick introduced a revolutionary internal-mix airbrush with a finer more controlled spray. Then Thayer & Chandler exhibited an even better unit at the Columbian Exposition in 1893. Ultimately the air brush took over the "Crayon" portrait production and pushed the arduous "stomping" system into the background. ❧

PHOTOGRAPHIC HISTORICAL SOCIETY OF CANADA
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The PHSC News Sheet

Supplement to Photographic Canadiana, May-June 2020, Vol 46 #1
Photographic Historical Society of Canada

SATURDAY, May 30th 2020, at 2:00PM

You are invited to a FREE live Web presentation, by the Michigan Photographic Historical Society featuring a lecture, May 30th 2020, by

Jeff L. Rosenheim
on "The Camera at Work"

Mr. Rosenheim is the Joyce Frank Menschel Curator in charge of the Department of Photographs at the Metropolitan Museum of Art

Rosenheim will explore the ways photography viewed working people, from the earliest daguerreotypes through 20th century lenses of such photographers as August Sanders and Irving Penn.

Enjoy this informative LIVE presentation from the comfort of your home via your desktop computer, laptop or tablet. Q-and-A session with Jeff Rosenheim will follow. Watch for an email for easy click-to-view link with no download required.

Sponsored by the Michigan Photographic Historical Society:
www.miphs.org

Historian Gary Saretzky presents a free virtual lecture on New Jersey's Civil War Era Photographers on May 14 at 11:00 a.m. under the auspices of the Somerset County Library System. Its accessed at: https://sclsnj.libnet.info/event/4266767

The Civil War boosted the photographic trade in New Jersey as both soldiers and families demanded more images of loved ones. Numerous new photo galleries opened to meet the demand. Some New Jersey photographers operated elsewhere during the war, including in the South.

Renew your PHSC membership early to receive seven special issues of Photographic Canadiana featuring "ALL ABOUT" reference material on Lantern Projectors, Shutters, Flash Lamps, Enlargers, and Posing Chairs. The collected woodcut illustrations originally appeared in *The Photographist*, journal of the Western Photographic Collectors Association. In an effort to resurrect this material the content of 172 pages has been digitized co-operatively by the Photographic Historical Society of Canada and Milan Zahorcak. Each part will come to you as a PDF file via MailChimp..... Exclusive to paid members only!

NOTED In the PRESS

Lorne Shields, our guru on early bicycle history, has achieved greater attention with a two page article on *Great Collections* in the June 2019 issue of the *Journal for Antiques and Collectibles*. The article concentrates on his exceptional bicycle-theme collection (in which he has several penny-farthings bicycles) and on his posters, images, trophies and paintings. A delightful experience of which we have enjoyed his lectures several times at our monthly PHSC meetings in Toronto..

CALLING FOR ASSISTANCE!

LAURA JONES

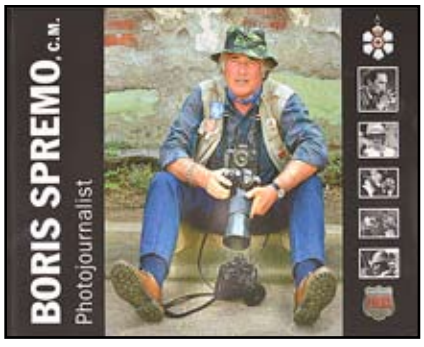
PHSC member Laura Jones has been collecting the topic of 19th century Canadian and pre-Confederation "WOMEN PHOTOGRAPHERS IN CANADA" – both amateur and professional, starting back in the 1970s.

"My goal is to add all Canadian women photographers to photographic history. I've pretty well exhausted sources such as archives and published directories. I appreciate much information and assistance received from PHSC members. I am now pursuing the hidden gems lost in family histories. I am sure that members can and will help me from their own family and collecting interests. There must still be many talented women with interesting images and stories that need to be discovered."

One of the first photographers Laura has continued to chase is a Mrs. Fletcher who was the first woman daguerreotypist in Canada visting Pictou, N.S. in 1841. Laura has yet to find a single image by this person although she visited Halifax, Charlottetown, Quebec, Montreal and Toronto. Considerable information exists about her husband, John Fletcher who was a phrenologist and had a popular lecture.

"You might come across some odd newspaper or magazine citation or know of an interesting amateur or professional photographer; maybe your mother or grandmother? "

Contact me at my new email address laurajones@laurajones.ca



Boris Spremo, C.M.: Photojournalist

by Boris and Ludmila Spremo

This book lays out Boris Spremo's life history in stories and photographs published by Ludmila Spremo and daughters Sandy and Diana. His tenacity at staying with an assignment long after other photographers led to many of his scoops.

Book design and production by Kinetics Design.

12x9 inch, 366 pp, illustrated in B&W and colour, hard cover

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