NUANCES DE VIE:

PHOTOGRAPHIC PRINTMAKING IN THREE MEDIUMS

A Project

Presented to the faculty of the Departments of Art and Design

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in

SPECIAL MAJOR

(Printmaking and Photography)

by

Valerie Wheeler

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Valerie Wheeler

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Abstract

of

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The goal of this special major in printmaking and photography was to bridge the two art forms through photo etching using classical and modern methods. In the process of learning large format photography, intaglio printmaking (photogravure), and non-etch intagliotype printing, I expanded the project to include platinum and palladium printing (making platinotypes and platino-palladiotypes). The continuity among the mediums rested upon the images, a few of which were printed in more than one medium. Landscapes, floral still-lifes, architecture, and a few portraits came together in a body of complementary work consisting of fifty-two images in four sizes. The thesis exhibition was installed and open for a week in the Robert Else Gallery; it included short technical labels to explain the three mediums. Viewer response was strong and positive.

The thesis essay offers written support for the project: its rationale, progress, difficulties, images, aesthetics, relationship to the history of art, processes, and meaning to me, its creator.

________________________, Sponsor
Sharmon Goff

____________________________
Date
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I also thank the University for providing faculty with the opportunity to become students of other curricula, to learn as well as to teach, and to find excitement and renewal in what we do here.
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Introduction

In 1997, while a professor in the Department of Anthropology at this university and with the support of the Faculty Development Program, I began a second B.A. in Art Studio. It was a quest for experience in alternative pedagogies and new skills in drawing, painting, photography, and printmaking (etching). When that degree was completed in 2006, it was suggested that I continue as a graduate student. Roger Vail and John Driesbach of the Art Department and Sharmon Goff of the Design Department agreed to become my committee for a special major in which I could explore combining photography and intaglio printmaking. My original proposal included a visual anthropology perspective, continuing photographic work in a long-term fieldwork project on organic farming systems but in different mediums.

The earliest photography courses I took as a graduate student were in large format photography using a 4x5 camera and alternative processes that printed those 4x5 negatives in new-old ways, most significantly using platinum and palladium coated papers instead of silver gelatin ones. The larger camera was difficult to take into the field for anthropological photography, so I began to move deeper into the world of fine art photography. My original goal of combining photographic images and intaglio remained unchanged. John Driesbach and I were trying to become skilled at using photopolymer film to etch images onto copper plates that were then inked and printed in a heavy press. Professor Driesbach retired unexpectedly in 2008; I continued the work on my own.
(The Department’s other printmaker, Richardo Favela, died suddenly about the same time.) The photopolymer process simulated photogravure, an elegant, sensuous, and powerful medium used in fine art photography in the late 19th and early 20th century that inspired my first interest in press-printed photographic images. During the summers of 2009 and 2011, I took workshops in photogravure at Crown Point Press in San Francisco. Three master printers at Crown Point were expert in photogravure; it was a remarkable experience that allowed me to produce classic photogravure images.

Meanwhile, I continued in platinum-palladium printing with Professor Vail each spring when he was in residence and alone during the fall semester of 2011. The body of work for my degree moved completely away from silver gelatin photography and did not include digital photography, although I received training in that from Professor Goff and have used it in other projects including visual anthropology. The focus became the monochrome print itself and how different processes produced different looks. Using the 4x5 view camera and eventually 8x10 view and pinhole cameras, I made what seems in hindsight to be a segue from ethnographer to photographer of light on living, mostly non-human forms—thus, nuances de vie or the subtleties of life. The result was an exhibition of fifty-two pieces in three mediums and this essay. The first part of the essay addresses the questions of why my work looks the way it does, what are my intentions, and how is this work situated in the course of art history. The second part is a summary of the mediums themselves. Several people who saw the exhibition noted that the brief
technical labels added to their appreciation of the images. From my side, the processes of the mediums are integral to the aesthetic and experience of making art in these forms.

**The Images**

...to photograph is more than to reproduce; it is to transform. Since mere reproduction does not permit any variations, while transformation is open to innumerable variations, the photographic activity requires rational and emotional organization in order to eliminate disorder and, as much as possible, accident, and at the same time to imbue the final creation with the utmost artistic significance.¹

I have looked at black and white photographs for a long time. The roots of my artistic genealogy in photography go back to childhood. In pre-television days, living in the country, the primary sources of visual images were movies, including newsreels, and picture magazines *Life* and *Look*. Photographs were in black and white, as were newsreels. When I was about eight, I found a stash of *Life* magazines from the war years in the attic and spent hours looking at them, trying to figure out what was going on. I trace the origins of my eventual Ph.D. dissertation research on an anthropological cross-study of warfare to those photo sessions. Being in black and white and therefore both abstracted and more easily analyzable into figure and ground, still images of violence that bloody color would make unbearable become possible to study. To this day I find documentary color film footage from World War II full of visual noise on the one hand and weak visual narrative on the other. War is chaotic, of course, but the chaos must be stilled if one is to analyze it. Black and white creates perspective distance which turns
out to be the essential quality of modern anthropological understanding. My family’s photographic domestic world was also black and white: images of friends, relatives, and events are memory. I find the few Kodachrome images of my childhood profoundly disconcerting. Clive Scott helps to make sense of this:

What is it that documentary photography and street photography might be said to share? First, a long-time devotion to black-and-white, as the guarantor of authenticity (strangely), as that which “reads” reality, reaches through colour to underlying truths, as that which organises the world and gives it coherence through the careful gradations of tone, as that which ensures a certain austerity, a denial of self-indulgence, a non-glamorising steadiness of vision, as that which allows greater technical control.

Chronologically the next photographic source for me was in junior high school when I became a profoundly romantic anglophile and devoured books about Great Britain. My favorite, which I checked out of the public library any number of times and in later life came to own, was *The British Countryside in Pictures*—hundreds of unattributed pre-war black and white photographs of towns, villages, fields, pastures, streams, mountains, and human activities in the landscape that became portals to an adolescent’s fantasy world. When my parents bought a copy of *The Family of Man*, the exhibition Edward Steichen created for the Museum of Modern Art in 1955, I pored over that more sophisticated collection. In retrospect, such interest is what one would expect in a future anthropologist: deep curiosity about other people in other places. I was taking photographs by then and took a photography course, but the stilted studio portraits we were expected to make frustrated and bored me. Street photography was what I wanted to do, but I was shy about taking such pictures. Landscapes became the alternative: sky
and clouds in the Plains and light in the Southwest in 2 ¼ x 2 ¼. Much later, a trip to Lebanon produced the best color images in 35mm I have ever taken. Nevertheless, I remained rooted in the mid-20th century work of the French humanist street photographers—Brassaï, Robert Doisneau, Henri Cartier-Bresson, Willy Ronis, and the many other photographers of The Family of Man. Walker Evans’ work in Let Us Now Praise Famous Men and Dorothea Lange’s Farm Security Administration photographs no doubt were unconscious influences on documenting rural life. I never intentionally appropriated anyone’s photographs; the similarities are apparent only in hindsight. Robert Frank’s gritty America takes something I do not have; I leave the visual dark side to others.

Fast forward three decades of snapshots and frustration with commercial processing. I finally learned to work in the darkroom, gaining independence and enormous pleasure in the magic of printing a black and white image. I was doing serious anthropological documentation in 35mm black and white and color in an ongoing organic farming research project in California, Ohio, and France. The American countryside has changed profoundly since I was a girl while the French countryside has changed more slowly.

The images in the body of work presented for my Master’s degree follow a different vision and means for the most part, directed by the view camera and large format that I learned to use at the beginning of my graduate work. The thirty-seven platinum-palladium images are all contact prints from 4x5 and 8x10 sheet film. The
cameras are a Toyo 4x5, a Deardorff 8x10, and an 8x10 pinhole. The five photogravures are all enlargements from 4x5 film made on either film or digital positives. The ten non-etch intagliotypes are from commercially produced half-tone enlargements of 35 mm pictures taken spontaneously.

The flower still lifes are studies in light. Calla lilies with their translucence, simplicity of line, and mutability give visual pleasure. Throughout a morning, the light shifts on the tabletop arrangements, presenting this moment, then another until the sun moves out of sight and the show ends. (See Plate 1.) Tulips, less spectacular but also sculptural and even alive as they reach for the light, have similar qualities. (Plate 2.) In the garden or field, the same flowers become something else, and with the pinhole camera, one can nestle among them. (Plate 3.) Strong chiaroscuro is common to many of the flower images; contrast is high with rich darks. (Plate 4.) Platinum printing captures highlights better than silver in the brilliant whites. (Plate 5) The range of tones in every one is great. Most of the landscapes involve water: reflections, mirror images, textures, space. They are softer than the still lifes. (Plate 6.) The photogravures, three made from the same negatives as the platinum-palladium prints, are larger with more contrast, richness, and drama. (Plate 7.)

The images in the intagliotypes are different: big architectural interiors, light and shadow, with the black ink creating darker chiaroscuro and mood and less detail. (Plate 8.) There are only three images of people in this collection: a Parisian street scene among
the intagliotypes and two portraits of women among the platino-palladiotypes. (Plates 9 and 10.)

My intention in taking and making these images was to produce beauty—different from the originals in real life, of course, instead abstracted, monochromatic, tonally rich beauty worthy of contemplation and visual pleasure. They invite the viewer closer, into the frame, through the looking glass to the surfaces and places within to see things that one cannot see in any other way. Heinrich Schwarz wrote,

Photography does not give a lifelike reproduction, but an abstraction, a transformation; it endeavors with its means just as painting—certainly in a quite different way—to pictorially define a demarcation of multiplicity, to offer a convincing, purposeful organization of chaos….³

**The Art**

I have never been a person of the new, not because of what is usually called nostalgia—*nostalgia* means homesickness for a lost past or thing—but because the new is usually so disappointing. A brilliant social democratic historian of the 20th century, Tony Judt, has a view of political ideology that can be applied here to late modernism: “The Left has no articulated vision of a good, or even of a better, society. In the absence of such a vision, to be on the left is simply to be in a state of permanent protest. And since the thing most protested against is the damage wrought by rapid change, to be on the left is to be a conservative.”⁴ Platinum-palladium printing and photogravure came out of the late 19th century in response to rapid changes in photography, itself a new modernist medium, wrought by industrial production and mass practice. Their 20th century revival
Hissing Tulip, platino-palladiotype, 2011

PLATE 2
Lilies and Chair, platino-palladiotype. 2011
Sidell Vase of Tulips, platinotype, 2011

Calia Lily Profile, platio-palladiotype, 2009

Yellow Iris, platio-palladiotype, 2008
Reeds, platino-palladiotype, 2011

Eucalyptus and Willow, platino-palladiotype, 2011
*Five Calla Lilies*, photogravure, 2011

PLATE 7
Altar, Abbaye de Mont St Michel, non-etch intaglio type, 2011

Font Alexandre III, Paris, non-etch intaglio type, 2009

PLATE 8
Christmas Street Singers, Paris, non-etch intagliotype, 2009

PLATE 9
began during the 1960s, a contested era of political and cultural change during which
documentary photography was so important in capturing and creating images that have
become history itself. Platinum-palladium and photogravure photographer-printers do not
want to make themselves into 19th century photographers out of homesickness for the
past but as an addition to art in the present. Nor would we say that a contemporary
painter using encaustic as a medium is nostalgic for ancient Egypt. In the eddies that
flow into and out of any mainstream, a new-old photography has been reinvented, in a
multicolored, digitized, and nihilistic world, toward an aesthetic that has conserved
continuous tonality in a monochromatic print embedded in paper. Stillness,
contemplation, purity, and beauty were, and are, valued as a response to chaos. The

Such values produce art that is “of its time” as much as the furious forms of
postmodern contemporary art in which all things are permitted. (Indeed, there are
schools of alternative photographic processes that strive to produce often tortured effects
in a print following the practices of other contemporary art in the effort to show the
individualist marks of the maker.) What so many critics of photography as an art seem to
disregard is that photographs do not take or make themselves. The hand or eye of the
artist is not apparent in the same familiar way as in painting or even various kinds of
intaglio printmaking. Yet no photograph is ever objective, mere reality, at third hand, or
whatever language is used to categorize or stigmatize the process. Mike Ware, the
British chemist and photographer who re-invented 19th century processes for modern users, has contributed much thought to the place of photography in the arts and its hybrid status as the offspring of both science (optics and chemistry) and art. The persistent gap between the two now is really a 20th century phenomenon as disciplines divided turf and built walls to professionalize. Natural history, social philosophy, and political economy belong to an undivided time. Ware observes:

The chemist of today is…a contemplative and visionary, with a highly developed sense of structural relationships in three dimensions, involving the filling of space with shape; and the form, geometry, symmetry and topology of objects. These skills of visual sensibility are more usually associated with the artist, architect, and designer.5

The modernist anthropologist of today, despite pressures from postmodern challengers, continues to make sense of structural relationships in three dimensions in explaining human society, culture, and history. My own path to discovery and explanation has always been visual. That multicolored and digitized world expands daily, hegemonic over not only photography but all graphic forms including printmaking, collage, design, and mixed media. As it displaces every skill-based process, no one seems to protest from either art or science. It would be deeply ironic if digital photography and printmaking were to become more accepted as art than the older chemical and press-based forms.

Photography remains liminal in art, as the anthropologist is liminal in the study of other humans—the outsider, the lone stranger, a Janus on the edge looking at least two ways. Even printmaking is not central to art-making. I have not become an insider in the art world, not leaving that relativist edge to become assimilated. I have come to find
plausible the idea that humans have an impulse to beauty. But when struggles for power, authority, status, and voice dominate expression of the impulse to beauty, I remain an outsider. Arguing about the nature of Art wanders into more byways than arguments about the nature of God. Better to be doing the work. I see the tension between photography and art, craft and art, and art and art as distractions from the work. Setting up a still life of tulips in a glass vase, I fill the clear vase with water to a satisfying level. In a proverbial tale of opposing viewpoints, one observer may see the vase as half-full, another as half-empty. The two are too busy opposing to look at the vase and see that it is just right.

**The Three Mediums**

Making a photographic print whether silver or platinum or pulling a photographic image from an inked plate is exciting, thrilling, even magical. The act, a culmination of many smaller acts, some backwards and in reverse order, has great power. (I recently learned that St. Augustine is the patron saint of not only brewers but also printers—making beer and making prints involves transformative processes not completely under human control.)

These three processes have two things in common: the photographic negative and rag paper. Ansel Adams likened the negative to a musical score and the print to a concert, the outcome of myriad decisions by skilled and innovative practitioners. Given his modern enlargers, Adams had more latitude to manipulate and create in the darkroom than the processes here allow. Continuing the metaphor, these concerts are more like
performing using baroque instruments—with limited modulation, the harpsichord rather than a concert grand piano. The image captured on film in the first place and the degree of chemical development in the second place are the dominant parameters. This is especially true of platinum-palladium printing.

Imagine my kitchen window: light, material without mass, travels from outside in many directions and brightens the cabinet doors opposite the window. If I block out all light except for a small round opening on the window, light’s directions are reduced and an image of my neighbor’s house comes into focus, upside down, on the cabinet. Voila, the room has become an eye and *camera obscura*. A glass lens aids focus, but the essential bit is the small hole. The ancient world discovered this principle of optics: Chinese philosopher Mo Ti in the 5th century B.C.E., Aristotle in 330 B.C.E., Arab mathematician Ibn Al-Haitham in the 10th century, and Roger Bacon and John Peckham in the 13th. Filippo Brunelleschi invented linear perspective about 1413; Leon Battista Alberti wrote on its relation to painting in 1435 using the analog of looking through a window with one eye; Leonardo da Vinci wrote a description of a *camera obscura* in 1490; Albrecht Dürer (1471-1528) applied principles of optical proportion to his drawing. In the 16th and 17th centuries, inventors refined lenses and reduced the “dark chamber” from a room to a small box. Jan Vermeer (1632-1675) may have used a *camera obscura* to help him organize the interiors in his paintings.

In the 19th century, efforts to actually capture the image in the dark chamber were possible because of the rapid development of chemistry involving metal salts during the
18th century and fascination in popular entertainment with projected images in magic lantern shows and moving dioramas. Eighteen thirty-four was a big year for photography: Louis Jacques Mandé Daguerre moved from his dioramas to exploring ways to fix still images. The result was the daguerrotype, developed in mercury and fixed in salt, positive, singular, highly detailed, and permanent. William Henry Fox Talbot invented salted paper prints, also singular but a way to make a negative and thus multiple positives. Because fixing the image was a continuing problem for Talbot, daguerrotypes could have been the future. But Talbot accidentally found a method of exposing sensitized paper to light, “developing” it with gallic acid creating a negative he called a calotype (“beautiful print”) and contact-printing the negative onto salted paper. This became the foundation of the two-step silver-salt method we still use.8

Albumen silver printing, invented by Louis-Desiré Blanquart-Evrard (1802-1872) dominated the 1850s, 1860s, 1870s, and into the 1880s. It used Frederick Scott Archer’s collodion (1851) glass plate negatives. Glass plates were coated with a syrup of gun cotton (nitrocellulose) dissolved in alcohol or ether plus potassium iodide. The plate is made light sensitive by adding a coating of silver nitrate solution which reacted with the potassium to make silver iodide. The plate is exposed in a camera while wet and then immediately developed. Photographers took their darkrooms with them in wagons even into remote places. The prints were made by exposing the plate negatives to paper coated in liquid eggwhite, dried, and made light sensitive with a coating of silver salts, then put into a contact frame with the glass negative. These albumen prints were toned with gold
It is because new professional photographers were willing to carry out this arduous process that we have such magnificent global visual record of the second half of the 19th century, from expositions and wars to the natural and cultural wonders of the world in stunning sharpness and detail.

Then a great change occurred: the Eastman Kodak Company in particular transformed photography into a mass medium in 1888—“You press the button, we do the rest”—and a “middle-class hobby” of recording everyday life in the “snapshot,” personal images taken quickly by untrained photographers using handheld cameras and who joined with other enthusiasts in camera clubs. The new amateurs undermined photography as both profession and art.

Thus, two linked consequences of successful image-capture occurred almost immediately: the popularity of the medium and its condemnation by some in the world of art. In 1859, Charles Baudelaire faulted those who were excited by Daguerre’s photography as stupid, an “idolatrous mob” who mistook reproduction of Nature and therefore photography for Art. “From that moment our squalid society rushed, Narcissus to a man, to gaze on its trivial image on a scrap of metal.” Photography enabled pornography and failed painters, impoverished the artistic genius of France, and became Art’s enemy, Evil threatening Good. Instead, he continued, the true “duty” of photography was to be the “humble servant” of art and science, the mere recorder, never creator. “But if it be allowed to encroach upon the domain of the impalpable and the imaginary, upon anything whose value depends solely upon the addition of something of
a man’s soul, then it will be so much the worse for us.”¹¹ Such a harsh judgment of a new medium of pictorial representation reflects more the fear of displacement than knowledge about a new way of doing something. Digital photography, for example, gained hegemony over film photography in a mere five years. I deeply resented the threats to and actual loss of technology, knowledge of process, and aesthetics peculiar to film and at times must have sounded like M. Baudelaire in my critique. But it did take a while before photography became included in the art history canon. Beginning in the late 1920s, Heinrich Schwarz, art historian of the inclusive and broad view, wrote of the history of photography and its deep relationship to painting in the quest for realism.

The impact photography already had exercised in the past and was in the future to exercise on art and, beyond the world of art, on the whole spiritual development was much too strong and deep to be stopped by Baudelaire’s rather lonely appeal and rejection.¹²

And some painters were fascinated by photography—Delacroix, Ingres, and painters who directly copied photographs including Degas, Toulouse-Lautrec, Utrillo, Rousseau, and Gauguin!¹³

Platinum-Palladium Printing

Popularity also threatened the professionalization of photography itself. If anyone could take a photograph, why pay someone to do it? If anyone can do it, how is it art? The end of the 19th century was a time of romanticism, an anti-modernist reaction to a half century of industrial capitalism, colonialism, and the ills and angst brought with
them. In the United States, the Gilded Age, similar to the New Age of the late 20th century, told itself stories about Native Americans, now completely subordinated, and sought in the least destroyed tribal societies of the Southwest the social cohesion and meaning missing in bourgeois life.\textsuperscript{14} In Great Britain, the source of Romantic revision in the face of industrial and scientific malaise and doubt was the medieval feudal and guild system and the value of the hand made. In photography, the technical was common, no longer differentiating or magical. Hence the rise of the movement called Pictorialism. Users of cameras where to rise above the technology to see as the human eye sees (not all in focus over the whole plane) and make pictures full of meaning rising from the inner psychic life of the photographer—subjective impressions of what was photographed. Photographers went out of the studio, into the world, photographing people and nature as they are in the world \textit{as seen by the photographer}. Peter Henry Emerson (1856-1936) went into the marshes of East Anglia to photograph activities and settings of the people who lived and worked there. I cannot help but see a parallel between Emerson’s intimate involvement with native peoples of the fens and Americans quest for relationships with Zuni and other Indian peoples. Sarah Greenough states that pictorialism was the first international movement in photography with theories of perception and meaning that were in the realm of artistic truth rather than scientific truth.

As Emerson noted, when a work presented facts, it was science; when it presented ideas, it was an art. Also clear was the understanding that facts were precise whereas art was suggestive. This desire to be suggestive and elusive accounts for the indistinct and at times blurred quality of pictorial photographs…. Believing that the aim of their art was “not to copy art but to appeal to the imagination,” the pictorialists, like the symbolist artists and writers, thought that the
imagination was most profoundly stimulated by suggestion rather than delineation.\textsuperscript{15}

Emerson made clear contact prints on platinum-coated paper, patented by William Willis in 1873 and sold by him beginning in 1879 as platinotype. A contact print of a negative on coated paper was made using the sun’s ultraviolet spectrum. The printed-out image was stabilized in chemical solutions, but there was no manipulation. Emerson gave lectures and released a limited folio edition of prints and text on the lives of the fen-dwellers, written in collaboration with T.F. Goodall, titled \textit{Life and Landscape on the Norfolk Broads}. The text was certainly ethnography and the prints art “relying on the selection of subject, lighting, framing, and…focusing to make an artistic image” in addition to the properties of platinum’s greater tonality.\textsuperscript{16} Emerson later published several books on the Norfolk Broads, with the images as photogravures, a direct photographic printing method invented by Fox Talbot that allowed for tonality and luminosity similar to platinum printing without having to make individual prints.\textsuperscript{17}

A variety of other printing methods came out of the pictorialist movement as photographers sought to create handmade, intimate, painterly, and meaningful images, more art than science. George Davison (1856-1930) went further, eliminating the lens and going back to the pinhole to make an image directly from nature. The resulting “photographic impressionism” drew an ad hominem response—so typical in the struggle of competing practitioners for authority: “…photographic impressionism indeed!—a term consecrated to charlatans and especially to photographic imposters…, pickpockets, parasites, and vanity-intoxicated amateurs.”\textsuperscript{18} Frederick H. Evans’ (1853-1943)
emphasized that art could be achieved by straight photography without any manipulation. Influenced by the Arts and Crafts movement, Evans began photographing medieval churches in England and France in 1895. “He mastered tight compositions…capturing a strong sense of chiaroscuro. His exquisite sense of space and volume gave his interior views, laden with physical texture, a sensation of uplift.”¹⁹ (I had seen two of Evans’ images of church interiors reproduced in a magazine and probably was influenced by them, but I did not see any of Peter Henry Emerson or George Davison’s landscapes until very recently, long after I made my own.)

On the American side of the Atlantic, Alfred Stieglitz (1864-1945) strove to develop post-exposure interest in pictorialism: printing, manipulation, atmospherics, and aesthetic values of the image over the subject. The camera was merely a tool. He founded the Photo-Secession movement in 1902 and the magazine Camera Work with exquisite tipped-in photogravure plates. Stieglitz’ wife and often model, painter Georgia O’Keefe, found her own artistic source in New Mexico

Platinum printing came to an end during World War I when platinum became a strategic metal used in explosives and was so longer available for general use.²⁰ It was revived in the 1960s and the chemistry revamped by Mike Ware, an academic chemist who became a photographer, making it much easier to use with more consistent outcomes. The properties that attracted the 19th century photographers remained the same: the direct process, a range of tones not available through any other monochromatic process, and the quality of light in the print surface itself, residing as it does in the very
fibers of the paper rather than from a glossy photographic paper. The 20th century attraction also emphasized the handmade character of each print and, for simple labs such as the one at Sacramento State, the handmade procedures of processing. Dissolved platinum and palladium salts are mixed with an equal amount of dissolved iron salts. If the printer wants a warmer tone, more palladium is used, a cooler tone, more platinum. Pure platinum prints are difficult to make because they do not completely “print out” during exposure so the printer has to make risky judgments about enough time, but the results are exceptional. The coating solution is applied to paper with a glass rod. The paper is dried, then humidified over water before exposure with the negative in a contact frame. Since UV light makes the exposure, the printer can work in a space with tungsten lighting during processing. The exposed prints are cleared of the iron salts, leaving only the noble metals to make the luminous image, and fixed in two baths of sodium salts of ethylenediaminetetraacetic acid (Edta), one with a pH of 3-4, the second with a pH of 9, and in between a bath of Hypoclear or sodium hyposulfite. The goal is to remove all acids and iron, restoring the paper to an alkaline state.21

There are difficulties. The price of platinum varies with the commodities market and can be very high. The processes and contrast are affected by temperature and humidity: temperature should be around 70° Fahrenheit and humidity between 55 and 80 per cent. Poor coating means a poor image. The major issue for contemporary platinum printers is paper: we depend upon rag art paper without any additives such as calcium or gelatin. Within the last few years, most paper manufacturers have added some kind of
alkaline buffering to paper manufacture; platinum cannot be absorbed into a paper with buffering. Manufacturers have ceased producing several papers that have worked in the past. Mike Ware and his associates have produced a linen paper as an alternative with moderate success. The quest goes on.

Photogravure

In France, *photogravure* refers to any photo-etching, most of which is based on half-tones. The word *héliogravure* would be used for the continuous tone intaglio process described here. “Artists who have used copper plate photogravure…look upon the gravure print as a singular work of art…. It is a translation of the information in the original negative in the same way that, most often, the silver gelatin or platinum print is….“ Building on William Henry Fox Talbot’s photoglyphic engraving, Austrian printer Karel Klič (1841-1879) invented photogravure in 1879. Its principle is that “dichromated gelatin hardens in proportion to its exposure to light.”

22 The steps I learned at Crown Point Press in San Francisco, based on the work of Morrish and MacCallum, are to make a film or digital negative, then a digital positive of the desired finished image size (film for making positives is no longer manufactured); apply potassium dichromate sensitizing solution to gelatin-coated paper; expose the gelatin to the positive including a Stouffer scale on the margin; adhere the gelatin sheet to a copper plate, remove the paper, develop the image in 110° water, and fix it in isopropyl alcohol; apply a fine rosin aquatint; mask the plate; etch the plate with six densities (baumé) of ferric chloride that
gradually etch the sequence of tones on the scale—you have 35 minutes before the rosin aquatint begins to break down—from darks to lights; clean etched plate; ink, wipe, and print at maximum pressure on an intaglio press. The process takes time and potassium dichromate is a known carcinogen, but ferric chloride in solution is not toxic like other traditional etchants, and the plate can print an edition of ten to thirty prints, depending upon how well the shallow etch on the plate holds up. The ink can be toned however the printer wants it. The most crucial printing skill is in wiping excess ink from the plate; the second most crucial is controlling tension on the blankets as the paper goes through the press. But every time a print is pulled from the plate it is exciting.

Non-Etch Intaglioype

With the general availability of photopolymer films invented for circuit board etching, photo-etching has taken another form sometimes called polymer photogravure, although because the ink-holding dots on a plate are from a half-tone image, it is not a true continuous tone photogravure.\(^{24}\) (I am experimenting with digital positives produced for copper plate photogravure but with a randomly generated “aquatint” screen to improve the tonality using the photopolymer films (ImagOn® and Z*Acryl®.) Keith Howard, an Australian printmaker in search of non-toxic intaglio printmaking methods, introduced circuit board etchants as both a hand drawn and photographic medium for etching in Britain in the early 1990s. Non-etch photopolymer prints, which he called Intaglio-Types, were part of his general mission to replace hazardous materials with safe
ones in printmaking and other art forms. Howard invented a variety of printmaking uses for the photopolymer material in his modified intaglio forms. In the photo etch method, digital halftones are produced by computer (until recently, image setters could make professional positives) and exposures tested much as one would for gelatin silver photographic printing. Exposure of the positive on a copper plate to which the photopolymer film is laminated occurs in a vacuum frame (contact frame) with a light integrator measuring the exposure for control and consistency. (Copper plate photogravure also uses a vacuum frame to hold the positive tightly to the sensitized gelatin sheet.) After exposure, the film on the plate is developed in a 10 per cent solution of soda ash, fixed in vinegar, and dried. It then can be etched in single-strength ferric chloride. Since I was more pleased aesthetically with a print from a plate not etched in ferric chloride, I call my images “non-etch intagliotype.” The photopolymer film is tough enough to make many prints. Like photogravure, success depends upon wiping skills. Unlike true photogravure, the printed image is coarse with a noticeable edge of the film appearing along the embossed edge, but contrast is high and the look is pleasantly dramatic and more “antique” looking than real 19th century prints. Problems with open-bite are avoided by exposing the plate to a digital aquatint screen before exposing it to a positive, giving the plate enough texture to hold ink in all areas, especially the darks.25 There are problems: Elizabeth Dove, a printmaker who teaches at the University of Montana, Missoula, has found changed manufacturing formulas of ImagOn make it less desirable for her own work, although she does continue to instruct students in its use.26
Indeed, its suitability may be best for the classroom; unlike copper plate photogravure, it is relatively easy, cheap, and non-hazardous. It is not, however, equivalent in any way to the classic method.

So ends the long section on the mediums. The disquisition has been necessary because the methods are relatively unknown in our time, and viewers may not know what they are looking at. This writer hopes that the information elicits something beyond “that’s a lot of work”—preferably a deeper appreciation of art forms outside more familiar realms of photography and printmaking.

**Conclusion**

The original intent of my graduate work was to bridge photography and intaglio printing. That has been successful using photopolymer film and especially in doing classic photogravure with rosin aquatint. Although platinum and palladium printing is not intaglio, it is the precursor of photogravure in the history of photography. The body of work is held together both by this history and by the kinds of photographic images I chose to print using primarily large format film photography.

It is also held together by an attitude toward what I photograph. I am not a late 19th century Pictorialist struggling to become a “creative artist” whose individuality seeks to dominate the outcome of the process and relegates what is in front of the camera to secondary status.27 Perhaps I am more in sympathy with early 20th century American
ones associated with Stieglitz’ *Camera Work*. “Light, which was frequently used in the 1890s to express an emotion…was now used to reveal form, design, or pattern.” But neither am I a pure formalist rejecting pictorialism and returning to a theory of objectivity and pure photography, not translation, like Stieglitz, Paul Strand, and Charles Sheeler of the World War I period. A calla lily is real, existing in the world in light. My photograph of it, however, is—by the nature of photography—a transformation of what I photographed, at that moment, the choice based on the moment, the light, luck, the state of my mind, variables that cannot be replicated. I am interested in what comes in the front of the camera primarily and then the best, simplest, most sensuous print I can make of that negative whether platinotype, photogravure, or intagliotype. The day I finally made a successful non-etch intagliotype, after nearly giving up but then seeing my first true photogravure in the studio at Crown Point Press, I wept.
Endnotes

5 Mike Ware, “A Bridge for Two Cultures, Incscape No. 5, 1993. Also www.mikeware.co.uk/mikeware/Bridge_Cultures.html.
8 Hirsch, pp. 10-16.
13 Schwarz, pp 114-117.
16 Hirsch, p. 186.
17 Hirsch, p. 186.
18 Peter Henry Emerson, The Death of Naturalistic Photography, 1890; reprinted in Hirsch, p. 189.
19 Hirsch, p. 192.
23 Baldwin, p. 67.
26 Elizabeth Dove, e-mail communication, May 2011.
27 Greenough, p. 146.
28 Greenough, p. 149.
29 Greenough, p. 151.