

PLATINUM AND PALLADIUM PHOTOGRAPHS

Technical History, Connoisseurship, and Preservation

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IRVING PENN

Foreword

It seemed as though we had a pretty good handle on platinum and palladium. We learned to identify platinum prints accurately by their velvety matte surface, smooth tonal gradations, and neutral palette. They were generally stable. They were always contact-printed. We knew that silver mirroring was a telltale sign that we were looking at a matte-surfaced gelatin silver print instead of a platinum print. A later date and warmer tone generally suggested a palladium print rather than platinum. A good old-fashioned sense of connoisseurship—a visual sensitivity to the material characteristics of the print, informed by long experience and some historical context—served us well as we confidently went about writing labels or making judgments about how to store, exhibit, or treat our photographs. And yes, all that remains true . . . except when the platinum prints are glossy or painterly or warm-toned or faded or printed by projection through a solar enlarger or mysteriously exhibit what looks, for all the world, like silver mirroring. And indeed, that warmer print might be a palladium print—or perhaps platinum-palladium or, yet again, straight platinum with mercury or perhaps without it but made on a day with low humidity. What a can of worms it has turned out to be! Our former certainty seems to have evaporated. Even with advanced chemical analysis the presence of one or another element won't always tell us how the print was made.

Describing the visual characteristics of a typical platinum print becomes more challenging when one learns that platinum papers at the turn of the last century were advertised as smooth or rough in texture, on a buff, cream, ivory, or white tint base, and with image colors of warm black, sepia, neutral gray, or cool black. Processed in one of countless ways, each of those papers might yield a print with still different characteristics. And perhaps our limited and preconceived notions of what platinum or palladium prints look like has promoted an exaggerated sense of their rarity when, as Mike Ware calculated, the records indicate that the Platinotype Company alone produced enough paper for 35 million “whole plate” prints between 1901 and 1914.

As is so often the case, concerted investigation proves the world to be far more complex and varied than we imagined at the start. This remarkable volume and the October 2014 conference out of which it has grown are the culmination of more than five years of research conducted by an international roster of scientists, conservators, cura-



F. Holland Day, *Pilate*, 1906. Platinum print, 23.5 × 19.2 cm. The Museum of Fine Arts, Houston, Museum purchase with funds provided by the Caroline Wiess Law Accessions Endowment Fund, The Manfred Heiting Collection, 2014.621.

tors, and photographers. The historical research, scientific analysis, process re-creation, and intense visual examination gathered here enormously enrich our understanding of the medium, and although there is more work to be done (as there always is), the pages that follow contain answers to myriad questions we did not even think to ask just a short time ago.

Not only does this volume therefore advance our understanding of the history and character of platinum and palladium prints, it validates and promotes a method of investigation that brings together professionals from various disciplines, each examining the subject with a unique perspective and area of expertise, informing one another for a richer and more complex understanding of the art and science of photography. As such, like its 2005 predecessor, *Coatings on Photographs: Materials, Techniques, and Conservation*, this book serves as a model for future scholarship.

Malcolm Daniel
Gus and Lyndall Wortham Curator of Photography
The Museum of Fine Arts, Houston

Preface and Acknowledgments

Constance McCabe

The exact origin of the platinum and palladium photograph research initiative is difficult to pinpoint. There were a number of catalysts that ultimately snowballed into this ambitious international and interdisciplinary partnership of scholars who passionately examined the history, chemistry, and technology of this superb class of photographs. The genesis of the *Platinistas*, an appellation coined by distinguished chemist and photographic artist Mike Ware to describe our fellowship of investigators, might be traced to one 2001 event when two photograph conservators, a conservation scientist, and a curator convened at the National Gallery of Art to examine some very faded early twentieth-century photographs. Surely these were silver prints of one type or another, which are known for their propensity to fade. Among them were circa 1900 photographs by the Pictorialists Eva Watson Schutze (1867–1935) and Sarah Choate Sears (1858–1935). When the faint portraits were subjected to chemical analysis, the instrument detected not silver but platinum and a significant amount of mercury. Faded platinum prints? Could that be possible? Scientist Lisha Deming Glinsman, photograph conservator Andrew Robb, curator Verna Posever Curtis, and I exchanged bewildered stares. So began this compelling odyssey.

The revelation that platinum prints may not be as stable as presupposed was soon followed by other observations that further challenged the conventional wisdom associated with this fascinating and important class of “permanent” photographs. A glossy platinum print? A platinum print with a metallic sheen? A two-toned print? Why would platinum and palladium prints, photographic processes revered for their permanence, display disfiguring stains?

First-generation platinum printers were familiar with the myriad commercially sensitized platinum and palladium papers available from the 1880s to the 1930s, which yielded images ranging from cool black to warm sepia. Further, they knew that with

chemical manipulation the tones could be adjusted further for subtle effects or to achieve even richer and deeper hues. They also knew that thorough clearing and washing were essential to assure the longevity of their prints and that the excessive use of mercury might compromise it. Some, inspired by the malleability of the platinum process, chose to do what they felt they must, regardless of the consequences, to attain the sumptuous tonalities they sought. Working knowledge of these processes, well known to photographers a century ago, was gradually rediscovered by the twenty-first-century *Platinistas*.

Relegated to near obsolescence by the 1920s, the platinotype, and related processes that rely on the light sensitivity of iron salts to form an image, had been superseded by the silver gelatin print. While platinum and palladium photography enjoyed a resurgence in the 1970s and has gained further popularity in recent decades, later generations of modern photographers were uninformed about many of the complex chemical manipulations used by early practitioners of these processes, such as the ubiquitous use of mercury. What else had been forgotten?

How have these photographs changed? How might we distinguish an artist’s intent from the effects of time? What can we do to preserve these photographs in a condition as close as possible to their original state? These were among the questions that mobilized the collective efforts

Sarah Choate Sears, *Portrait of Mrs. Julia Ward Howe*, c. 1900. These two prints reveal that the image in platinum prints may be vulnerable to fading. Chemical analysis by x-ray fluorescence spectrometry (XRF) indicates that platinum alone makes up the image in the pristine print (1a). XRF of the faded print (1b) reveals the presence of platinum and mercury.



1a. Platinum print, 24 × 18.5 cm. The Art Institute of Chicago, Alfred Stieglitz Collection, 1949.861, www.artic.edu.



1b. Platinum print with mercury, 25 × 19 cm. Library of Congress, Prints and Photographs Division, Gift of Frances Benjamin Johnston, lot 3222, no. 80.

of the *Platinistas* who, beginning in 2011, joined forces to study platinum and palladium photographic processes in depth. Each individual researcher or team of conservators, scientists, curators, historians, and/or photographers carved out a piece of the puzzle for extensive investigation. Collectively we explored the technological history of these photographs, examined their complex material characteristics and chemistry, studied the manufacture of the photosensitized materials, and researched the working practices of photographers and studios. We examined a great number of prints in collections worldwide, produced carefully controlled print samples, or “simulacra,” simulated the aging of the specimens, and performed sophisticated chemical analyses on these and historic prints.

The revised picture of the platinum and palladium print processes that emerged is presented in this volume, providing a more complete picture of these extraordinary photographs and a greater appreciation of their distinct features and the artistic achievements of their makers. Despite the enormous leap in scholarship made during the course of this work, the *Platinistas* have been humbled by the complexity of platinum and palladium prints and recognize that much remains to be examined.

The forty-six authors responsible for this collective achievement could not have proceeded without the support of many individuals and institutions. Among the greatest champions of the platinum-palladium photograph research initiative and the field of photograph conservation as a whole are Angelica Zander Rudenstine and Alison Gilchrest of The Andrew W. Mellon Foundation. Without their confidence in the National Gallery of Art’s photograph conservation program, which was established with the support of the Mellon Foundation, this collaboration and publication would simply not have been realized.

The Irving Penn Foundation, in an extraordinary demonstration of its commitment to the conservation of photographic heritage and the platinum process in particular, made the production of this print edition possible. Executive director Tom Penn and the foundation’s board of directors deserve a particular note of appreciation for supporting this publication. Associate director Vasilios Zatsis, forever reverential to Mr. Penn and his memory, worked ceaselessly to ensure this volume would provide a meaningful and a lasting contribution to Mr. Penn’s legacy. Vasilios, along with David Chang, Alexandra Dennett, Matthew Krejcarek, Roger W. Krueger, and Elsa Sánchez Garza, assisted in many ways to bring this project to fruition and allow the book’s revenues to be directed toward future

scholarly endeavors of the Photographic Materials Group of the American Institute for Conservation (AIC-PMG). The AIC-PMG is forever indebted to the Penn Foundation and hopes that this publication will promote the preservation of platinum and palladium photographs worldwide.

The preliminary results of this book’s studies were presented at “Platinum and Palladium Photographs: Technical and Aesthetic History, Chemistry, and Connoisseurship,” a symposium held in Washington, D.C., on October 21–24, 2014. The event was sponsored by the Foundation of the American Institute for Conservation of Historic and Artistic Works (FAIC) and the Mellon Foundation with the generous support of the National Endowment for the Humanities. The dedicated efforts of the professionals at the FAIC, including Eric Pourchot, Abigail Choudhury, and Eryl Wentworth, and with the support of the board of The Andrew W. Mellon Collaborative Workshops in Photograph Conservation, made the symposium, workshops, tours, and the subsequent publication of this volume possible.

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The three years that followed the symposium were devoted to completing the research, compiling the illustrations, and writing the essays in preparation for this publication. The Samuel H. Kress Foundation provided funds to hire research assistant Caroline Minchew, without whose multitude of contributions it is doubtful that this publication would have come to fruition. Caroline color-managed every image in this publication, photographed many of its illustrations (including the platinum print that graces the book's jacket), and otherwise contributed in countless ways.

The National Gallery of Art conservation staff and consulting scientists deserve recognition for their involvement in this project. The scientific component of this research initiative rested on the intellectual shoulders of key project contributor and consulting chemist Mike Ware, who selflessly and enthusiastically shared his knowledge and wisdom with all of us. Thank you, Mike. Marie Ware: we can only imagine the critical role you played over the years! Gallery scientists Christopher A. Maines and Matthew L. Clarke worked with Mike to guide the *Platinistas* through the project's chemical maze. Chris served as science editor, ensuring that the chemical details in each essay and the glossary were clear and accurate. Matt cannot be thanked enough for his tireless efforts performing countless measurements, detailed analyses, and insightful interpretations of data for many contributions in this volume, including six that he co-authored, and reviewing the book's contents to ensure clarity and accuracy. Conservation scientist Joan M. Walker, who joined the *Platinistas* in the final year of the project, also performed critical analyses, reviewed the scientific details of the essays, and helped to fine-tune the book's contents.

National Gallery of Art photograph conservators Sarah S. Wagner, Alisha Chipman, and Ronel Namde partnered with the scientists to conduct research and provided expert advice to fellow *Platinistas* as they pursued their investigations. In her capacity as assistant editor, Sarah read and reread every essay in this volume, correcting technical, historical, and bibliographic minutiae with a precision that only one with an extraordinary command of the subject could provide.

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As we *Platinistas* immersed ourselves in the world of platinum and palladium photography, we came to have enormous respect for the photographers and chemists who first explored and embraced it. This volume, while not the final comprehensive authority on their processes, both documents and is itself a testament to the collective curiosity and inventiveness that can arise when dedicated individuals work together for a common purpose.

Notes to the Reader

Platinum and Palladium Photographs is intended to introduce or reacquaint the platinum and palladium photographic print processes to photographers, curators, historians, and conservators, and to provide a broad technical roadmap for interpreting these remarkable photographs. The volume's contents will demonstrate that it is difficult to describe these prints in simple terms and that the picture that is embodied by the process is but one element of a complex photographic object.

The material character of these prints, which is central to their creation, is influenced by many factors. Each essay in this volume offers perspectives and insights about the deliberate—and sometimes accidental—ways in which these photographs were made and reflects on the aesthetic capacity and limitations of the processes, as well as the rigors involved in their production. Knowledge of the long-forgotten sensitized materials and products, chemical manipulations, and working methods used by photographers a century ago provides an important basis for the accurate assessment of platinum and palladium prints. The value of this scholarship, which is often both tedious and immensely rewarding, cannot be overstated.

Not unlike painters and sculptors, photographers made many choices when creating a photograph, deliberately selecting among available materials and techniques to achieve very specific aesthetic results. The artists' choices were influenced by the expansive evolution of photographic technology during the platinum and palladium era, the 1880s to the 1930s, providing a wide range of manipulations to yield new and different interpretations of the same negative over the course of years.

As each new commercial product or experimental technique was introduced, the photographic artist might explore its possibilities, returning to a negative to test its potential. For example, a negative that was made in 1902 may have been printed using a process that was not introduced until 1914. Therefore, dating the print "1902" may be misleading and cause one to overlook informative aspects of an artist's work. While it was common practice to reprint the same negative over the years using different papers, it was rare for a photographer to scrupulously record this information. It is rarer still that a collection catalog provides both the date of the negative and the date of the print. Further, the medium in the catalog may be described generically or may be inaccurate. For example, a print made with a combination of platinum and palladium may be described simply as a "platinum print," or the designation may simply be a best guess based on visual observation alone.

When studying the captions that accompany the prints illustrated in this book, the reader should know that diligent efforts were made to include accurate process descriptions and, whenever possible, to give both the date of the negative and the date of the print. Otherwise, the process and date that describe the print are those provided by the institution that generously allowed the image to be reproduced; further research may be needed to clarify each one.

Moving forward, practicing photographers are encouraged to record both the date of the negative and the date of the print, along with supporting information regarding the materials and methods used to make each print. Future historians, conservators, and scientists, as they strive to properly interpret and best preserve your work, will be grateful for your foresight.

The chemical recipes and procedures described in this book are provided as aids to understanding the material nature of platinum and palladium prints. Readers interested in creating platinum and palladium prints are warned that most processes involve potentially hazardous materials. Therefore, precautions must be taken to protect the health and safety of both practitioners and the environment. Personal protective equipment (PPE) and proper ventilation should be used as recommended by the appropriate safety data sheets (SDS), material safety data sheets (MSDS), or product safety data sheets (PSDS), and proper disposal and spill-handling procedures must be understood and followed.

The photographs illustrated in the special section of this book entitled "Plates: A Selection of Masterworks in Platinum and Palladium," and on the pages of most essays cannot be fully appreciated by viewing these reproductions, whether in print or electronic formats. One must be in the presence of a print, unobscured by glazing, to experience its lustrous tonalities and delicate surface qualities. The reproductions do, however, demonstrate that platinum and palladium processes could yield images in a wide range of color, contrast, and intensity. Great care was taken to carefully color-manage the reproductions of the photographs presented in this volume. For best color accuracy they should be viewed in daylight or under standard 5000K viewing conditions. Electronic versions should be viewed on a calibrated monitor.

One theme reverberated over the six years of this collaborative research initiative: the more we discovered, the more we found there is to learn. While some issues have been studied in depth, many topics remain to be addressed, and scholars are encouraged to use this volume as a starting point to delve deeper into the fascinating subject of platinum and palladium printing.