

PROCESS OF SELECTION: ÉDOUARD BALDUS, THE NEW LOUVRE
COMMISSION PHOTOGRAPHS, AND *PALAIS DU LOUVRE ET DES TUILERIES*

by

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Abstract

Process of Selection: Édouard Baldus, the New Louvre Commission Photographs, and
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Master of Arts, 2013

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Édouard Baldus (1813–1889), a prominent figure in the history of French photography, is known almost exclusively for his silver-based photographs of the 1850s and early 1860s. Yet he was also at the forefront of developments in photomechanical reproduction, publishing seven books of photogravure prints between 1866 and 1884. *Palais du Louvre et des Tuileries. Motifs de decoration* (published in various editions between 1869 and 1875), his fourth, was the first to reproduce his own photographs rather than engravings by earlier artists. It depicts architectural elements of the Louvre and Tuileries palaces, images that stem largely from Baldus's 1855–57 commission to document the construction of the New Louvre. Through an exploration of *Palais*' production and distribution, and comparative analyses of its prints with their corresponding photographs, this thesis situates *Palais* within Baldus's oeuvre and argues for the significance of his photogravure production to the historiography of the photographer.

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Introduction

Over a period of little more than 10 years, the well-known French photographer Édouard Baldus (1813–1889) received and completed government commissions to document France’s architectural heritage (the *Mission héliographique*, 1851), the Rhône floods (1856), and the construction of the New Louvre (1855–57), and private commissions to promote the country’s new railways, including the *Chemin de fer du Nord* (1855) and the *Chemins de fer de Paris à Lyon et à la Méditerranée* (1861).¹ He also developed and executed projects himself, including *Villes de France photographiées* (1853–1857), for which he won government support, a collection of art reproductions (1852–1853), and the albums *Vues et monuments de France* (compiled ca. 1861) and *Monuments de Paris* (compiled ca. 1862). This was how he made his living and, aside from the small monthly income that his wife, Élisabeth-Caroline Étienne, brought to the marriage with her dowry, how his family was supported.² Evidence of photographs produced for personal reasons, rather than for profit, is rare.³

From the beginning of his photographic endeavours, in the late 1840s, Baldus had proven himself technically adept and flexible, working variously with a calotype negative process of his own invention,⁴ collodion on glass negatives, salted paper and albumen

¹ The term “private commissions” is used here to connote non-governmental commissions.

² See Malcolm Daniel, *The Photographs of Édouard Baldus* (New York: The Metropolitan Museum of Art, 1994), 256. Daniel mentions only Élisabeth-Caroline’s dowry and Baldus’s photographic work as sources of income for the photographer’s family.

³ The portraits and views Baldus took on the grounds of the Château de la Faloise (1857), the country estate of his friend Frédéric Bougeois de Mercey, may be the only examples. However, it has not been determined that Baldus did this work *gratis*.

⁴ Published in 1852, the process involved submerging the paper in a gelatin solution prior to sensitization and exposure. It has been translated and published in Daniel, *Photographs*, Appendix 12, 250–54.

positives, and photogravure.⁵ But it was the latter—and the preservation and dissemination of his images that it allowed—that would hold most of his attention for the remaining 20 years of his career. He released seven books of photogravures onto the market between 1866 and 1884, either publishing them himself or through external publishers.⁶ At the time, they represented the largest body of work in photogravure ever produced by a photographer.⁷

It was prior to this period, however, and in connection with several of the photographic projects noted above, that Baldus created the numerous images that today typify the early art photography of France as it has been described by collectors, curators, and scholars since the 1960s: soaring gothic arches, boats moored at port, railroad tracks winding into infinity.⁸ Pointing to such salted paper and albumen photographs, André Jammes, Françoise Heilbrun, Malcolm Daniel, and others canonized Baldus as a master of form, technique, and *effet*.⁹ an artist alongside other photographer artists¹⁰ then active in Paris, including Gustave Le Gray, Eugène Cuvelier, Victor Regnault, Charles Nègre, and Henri Le Secq. Through the photographs of these men, this cohort of collectors,

⁵ For ease of use “photogravure” will, throughout this thesis, refer both to Baldus’s specific gravure process and the diverse range of photomechanical processes in use in France from the 1840s to 1870s.

⁶ These publishers included Ve. A. Morel and Ch. Claesen, both of whom published editions of *Palais du Louvre et des Tuileries*.

⁷ “One would have to go to P. H. Emerson (in the late 1880s and 1890s) and Alvin L. Coburn (after 1900) to find anyone working with photogravure in this concentration and volume, but these two are much later and were working with photogravures in an entirely different artistic milieu.” Professor David Harris, email to author, 24 March 2013.

⁸ See, for example: André Jammes and Eugenia Parry Janis, *The Art of French Calotype: With a Critical Dictionary of Photographers, 1845–1870* (Princeton: Princeton University Press, 1983); Alison and Helmut Gernsheim, *A Concise History of Photography* (New York: Grosset & Dunlap, 1965); Marie-Thérèse and André Jammes, *Niépce to Atget: the First Century of Photography. From the collection of André Jammes* (Chicago: The Art Institute of Chicago, 1977); Françoise Heilbrun and Philippe Néagu, *Charles Nègre, photographe, 1820–1880* (Paris: Éditions des Musées nationaux, 1980); Daniel, *Photographs*, 1994; and Sylvie Aubenas and Paul-Louis Roubert, eds., *Primitifs de la photographie. Le calotype en France 1843–1860* (Paris: Editions Gallimard, 2010).

⁹ Examples of this, found throughout the scholarship, are provided in the literature survey of this thesis.

¹⁰ See footnotes 75 and 76.

curators, and scholars worked to develop the idea of nineteenth-century art photography at a time when such objects were undervalued and had little institutional status.

Today Baldus remains almost exclusively associated with these “art photographs” of the 1850s and 1860s. Yet it is arguable that his photogravures should be considered of equal significance. Owing to their lack of chemistry they are better preserved than his photographic prints, and technically and aesthetically they are equally accomplished: the grain pattern of the prints, a feature of the photogravure process, is subtle; the ink is evenly deposited; the tones are rich, and continuous from black to white; and the details are finely described. Baldus took great care in producing them, retouching and cropping to better define or highlight certain areas, and to direct the viewer’s attention to what he deemed the images’ most significant passages. Nonetheless, these prints have rarely been included in exhibitions or addressed in academic texts, in neither Europe nor North America.

Since mention of the photogravures first began appearing in the scholarly literature in the 1980s, they have generally been classified as commercial products and not been assigned the artistic or historic merit of Baldus’s “documentary” work.¹¹ But where should we draw the line between these two types of production, if indeed a line should be drawn at all? The silver-based photographic documents were created in exchange for payment, either through commission or as commercial speculation; the photogravures were displayed at the 1855 *Exposition Universelle* and two exhibitions of

¹¹ Examples of such divisions can be found in Aubenas and Roubert, *Primitifs*; Barry Bergdoll, “A Matter of Time: Architects and Photographers in Second Empire France,” in Daniel, *Photographs*, 99–119; and “Édouard Baldus: Artiste photographe,” in Daniel, *Photographs*, 17–97. Jeff Rosen, in his article “The Printed Photograph and the Logic of Progress in Nineteenth Century France,” *Art Journal* 46.4 (1987), discusses this tendency to marginalize photogravures, in general, as commercial products.

the Société française de photographie (SFP), in 1869 and 1874;¹² and both were praised repeatedly in *La Lumière* for their beauty and craft. It therefore seems that if the photogravures have been excluded, this is only because they have been defined as commercial by twentieth- and twenty-first-century analyses, which were not founded on the presentation of a complete picture of Baldus's output, methods, interests, and thinking about his own work, but on the construction of an art history of photography that stretches back to the 1840s. Such a history was necessary for the initial acceptance of photography into museum collections.

Palais du Louvre et des Tuileries. Motifs de decoration was published in 1869. This was Baldus's fourth book of photogravures, but the first comprised of his own images rather than reproductions of engravings by fifteenth- to eighteenth-century French artists.¹³ Published serially in three volumes between 1869 and 1875,¹⁴ *Palais* depicts sculptural elements, statuary, and façades from the Louvre and Tuileries palaces and gardens. These images stem from Baldus's 1855–57 assignment to document the construction of the New Louvre, at the time the largest government commission ever awarded to a photographer, and from his subsequent work on the building site in the early 1860s. For the commission alone Baldus produced thousands of salt and albumen prints, approximately 1,150 of which were assembled into presentation albums with the title *Réunion des Tuileries au Louvre, 1852–1857* at the end of 1857.¹⁵ Intended to mark the

¹² Daniel, *Photographs*, Appendix 9, 242–245. Baldus's complete exhibition history, including both silver-based and photogravure prints, appears in this appendix to Daniel's monograph.

¹³ Baldus's first photogravure publications were *Recueil d'Ornements* (1866), *Œuvre de Marc-Antoine Raimondi* (1867), and *Œuvre de Jacques Androuet dit Du Cerceau* (ca. 1869). For a listing of these publications see Daniel, *Photographs*, 246–247.

¹⁴ These volumes were published in various editions between the dates given above. See page 22 of this thesis for an extended discussion of *Palais*' publication history.

¹⁵ The exact number of photographs is contested. Daniel and Heilbrun, in their texts noted above, have both placed it at 2,000, but an email (20 April 2012) from Thomas Cazentre, curator of nineteenth-

new palace's inauguration in August 1857, and to celebrate this major building project as a demonstration of the great artistic and industrial power of Napoléon III's empire, the albums were sent to selected personages and collections throughout France and Europe.¹⁶ Baldus did not make the selections for the albums or arrange the photographs in them himself; this was done by the office of Hector Lefuel, the project architect, who had proposed the idea of the albums to the Minister of State, Achille Fould.

It was therefore with *Palais du Louvre* that Baldus had the opportunity to impose his own order on his Louvre photographs, selecting only 300 images for publication and sequencing them across three volumes: the first comprising interior views, the second exterior, and the third a combination of the two. This severe editing process, assessed through a comparison of the Louvre photographs with the *Palais* photogravures, reveals certain aspects of Baldus's conception of his Louvre images. Which pictures did he wish to distribute to the public? What did he find most visually interesting, and what did he believe would most interest his intended audience, with regard to size, shape, and subject? What order and what amount of variation did he feel best benefited the images?

Focusing on the photographic aspect of these publications, this thesis explores *Palais* as the product of editorial choices through a comparison of *Palais du Louvre et des Tuileries* with the Louvre commission photographs. This requires the close examination of the objects themselves. The Hill Collection, assembled and managed by Toronto architect and photography collector Robert Hill, includes all three volumes of *Palais* and 628 photographs pertaining to the Louvre commission: 538 salt prints

century photographs for the Bibliothèque nationale de France, to Robert Hill gives the number as 1,149. Additionally, the database of the Musée d'Orsay, whose collection has been catalogued and digitized in its entirety, includes entries for only 554 photographs in the museum's complete set of four albums.

¹⁶ Daniel, *Photographs*, 58–59.

contained in six numbered folios with the inscribed title *Fragments du Louvre*, and 90 loose albumen prints.¹⁷ Access to these objects, which are supplemented by second and third sets of the *Palais* volumes in the collection of the Canadian Centre for Architecture in Montreal and digital images of the photographs in the four presentation albums held by the Musée d'Orsay in Paris, form the basis of my study.

This study comprises four chapters. The first, a literature review, analyzes how historians have thus far chronicled Baldus's output and professional practice, and examine the development and use of photogravure in nineteenth-century France. The second chapter traces the publication and distribution history of *Palais*, with suggestions of how it might have been produced and hypotheses on its contemporary audience. The third concentrates on the prints, with detailed descriptions of their physical features and conjectures regarding their production. The fourth analyzes Baldus's editing process, specifically how he changed his Louvre images visually in translating them from the photographic to the photogravure form, and his selection and sequencing of them across the three volumes. Comparisons between the photogravures in these volumes and the photographs on which they are based are drawn throughout, continually addressing the larger question of how Baldus's photogravure production, explored through the single publication of *Palais du Louvre et des Tuileries*, fits into his life's work. This question must be examined if we are to understand how was photography was conceptualized, practiced, and used in France during Baldus's time.

¹⁷ The provenance and contents of the *Fragments du Louvre* folios are discussed in Chapter 4.

Chapter 1: Literature review

Born in Prussia, Édouard Baldus came to Paris in 1838 as a painter, with hopes of ascending the city's artistic ranks. Instead he would succeed as a photographer, celebrated by the 1850s for his architectural views and mastery of various photographic techniques.¹⁸ After winning two high-profile government commissions—to document France's crumbling monuments as part of the now famous *Mission héliographique* in 1851 and the building of the New Louvre in 1855—and successfully completing significant projects for himself and private clients, he began to publish his images in books, creating the pictures by the photogravure process. Given the span of years he dedicated to these publications, the quality of their images, their connection to the early history of photographs in print, and the sheer number he created, they arguably represent the most significant aspect of Baldus's oeuvre. Yet discussions of them in the literature on French photography of his era are scant.

This literature survey examines how the photographer and his early photogravures have been represented by scholars from 1980 to the present day. It offers reasons for these interpretations through an analysis of monographs and biographies, articles on the New Louvre project and Baldus's preceding government commission, the *Mission héliographique*, and texts concerned with the technology and history of photogravure, as well as Baldus's place within it.

¹⁸ Baldus's photographic activities were followed closely by periodicals including *La Lumière*, *Revue Photographique*, and *Le Bulletin de la Société française de photographie* from 1851 to 1874, the last year that his work appeared in exhibition.

Monographs and biographies

Though relatively extensive, the literature on Baldus has yet to probe his photogravure production in any depth, with the extant monographs and general histories focusing instead on his photographic prints.¹⁹ Malcolm Daniel's *The Photographs of Édouard Baldus* (1994, published in French translation the same year), is one example: every plate in the book reproduces a silver-based photograph. Of the essay's 80 pages and 75 illustrations, only seven paragraphs—the last appearing before Daniel's conclusion with a description of Baldus's financial collapse and death—and three illustrations are allotted to Baldus's work in photogravure, which is described as his “primary commercial activity” from the mid-1860s onward. *Palais du Louvre et des Tuileries* is discussed in one of these paragraphs. In a section entitled “The Later Years” Daniel writes that:

Although most of Baldus's professional life still lay ahead, his greatest achievements had already been realized by the early 1860s. During the next two decades Baldus increasingly shifted his energies from the production of great photographs to the commercial and industrial applications of the medium.²⁰

In *Édouard Baldus at the Château de La Faloise* (2007),²¹ which addresses a body of work produced by Baldus in 1856 in art historical terms, curator James Ganz also describes Baldus as having reached the pinnacle of his career long before he began producing books of photogravures. Ganz places the date at 1855, when the period of the

¹⁹ See, for example: Michel Frizot, ed., *A New History of Photography*, trans. Susan Bennet, Liz Clegg, John Crook, and Caroline Higgitt (Köln: Könemann, 1998); Françoise Heilbrun, *La photographie au Musée d'Orsay* (Paris: Skira-Flammarion: Musée d'Orsay, 2008); Mary Warner Marien, *A Cultural History of Photography* (Upper Saddle River, NJ: Pearson Prentice Hall, 2002); Beaumont Newhall, *The History of Photography* (New York: The Museum of Modern Art, 1982); Naomi Rosenblum, *A World History of Photography* (New York: Abbeville Press, 1989).

²⁰ Daniel, *Photographs*, 90.

²¹ James Ganz, *Édouard Baldus at the Château de La Faloise* (Williamstown, Mass.: Sterling and Francine Clark Art Institute; New Haven, Mass.: Yale University Press, 2007).

calotype's greatest popularity drew to a close. Similarly, the biography of Baldus in *Primitifs de la photographie. Le calotype en France 1843–1860* (2010), edited by Sylvie Aubenas and Paul-Louis Roubert, summarizes his entire career—noting his use of glass as well as paper negatives, and his *Villes de France photographiées*, a project he undertook for profit—up until his last commission, the creation of the *Paris-Lyon-Méditerranée* album (1861–1863). Of his career beyond that point, the text states only that Baldus “dedicated himself to the commercialization of his oeuvre, including through small format photographs and photogravure, before going bankrupt in 1887 and dying soon after, forgotten.”²² Daniel, Aubenas, and Roubert demonstrably posit photogravure as both distinctly commercial and as warranting little attention; Ganz suggests as much by limiting his discussion of Baldus to his silver-based photography and describing him as an artist. This description is echoed throughout the literature; for example, in Malcolm Daniel's article “Stone by Stone: Édouard-Denis Baldus and the Nouveau Louvre” (1992),²³ the author discusses the capacity of Baldus's Louvre photographs to “exploit fully the medium's ability to render the spatial play of light and volume and to record accurately the most intricate details”,²⁴ and Françoise Heilbrun, in *Le photographe et l'architecte: Édouard Baldus, Hector-Martin Lefuel et le chantier du Nouveau Louvre de Napoléon III* (1995),²⁵ writes that with his work for the *Mission héliographique*, Baldus “proved to have a particular talent for suggesting depth and volume on a two-dimensional

²² Ibid, 260. Author's translation.

²³ Malcolm Daniel, “Stone by Stone: Édouard-Denis Baldus and the Nouveau Louvre,” *History of Photography* 16, no. 2 (Summer 1992): 115–122.

²⁴ Ibid, 119.

²⁵ Françoise Heilbrun, “Édouard Baldus et la reproduction du Nouveau Louvre d'Hector Martin Lefuel,” in *Le photographe et l'architecte: Édouard Baldus, Hector-Martin Lefuel et le chantier du Nouveau Louvre de Napoléon III* (Paris: Réunion des musées nationaux, 1995), 27–35.

surface.”²⁶ The focus of these texts is on Baldus’s “art” photography, and particularly his mastery of light, to the exclusion of critical or contextual analysis of his larger career or the contemporary importance of photomechanical processes.

The Mission héliographique and the New Louvre commission

La Mission héliographique. Cinq photographes parcourent la France en 1851 (2007)²⁷ by Anne de Mondenard describes the most widely historicized government commission of mid-century France, the *Mission héliographique*, in which Baldus took part. De Mondenard indicates that the significance of the project lies not in its stated purpose or end result—an image archive preserving France’s architectural patrimony, for use in restoration efforts—but in its representation of the moment when photography was officially recognized, presumably as useful to the activities of the Republic. The author also writes of the project as critical to the later careers of the five photographers involved—Baldus, Hippolyte Bayard, Le Gray, Le Secq, and Auguste Mestral—granting Baldus particular seriousness and aptitude: he followed the route he was assigned

²⁶ Ibid, 27. Author’s translation.

²⁷ Anne de Mondenard, *La Mission Héliographique: Cinq photographes parcourent la France en 1851* (Paris: Centre des Monuments Nationaux, 2002). In the interest of economy, I selected two of the many texts available on the *Mission héliographique* for inclusion in this survey. For further reading on the *Mission*, see Anne de Mondenard, “La Mission héliographique : mythe et histoire,” *Études photographiques* 2 (May 1997), 60–81; Donald E. English, *Political Uses of Photography in the Third French Republic, 1871–1914* (Ann Arbor, Mich.: UMI Research Press, 1984); Joel A. Herschman and William W. Clark, *Un voyage héliographique à faire: The mission of 1851: The first photographic survey of historical monuments in France* (Flushing, New York: The College, 1981); Stephen Monteiro, “Nothing Is So Dangerous as Hypothesis: The Mission Héliographique, Photography, and the Spectacle of History,” *Photography & Culture* 3, no. 3 (November 2010): 297–320; Philippe Néagu, *La Mission héliographique : photographies de 1851* (Paris: Direction des musées de France, 1980); Eugenia Parry Janis, *The Photography of Gustave Le Gray*, edited by the Art Institute of Chicago (Chicago: Art Institute of Chicago and the University of Chicago Press, 1987); Shelley Rice, *Parisian views* (Cambridge, Mass: MIT Press, 1997); Abigail Solomon-Godeau, “Calotypomania: The Gourmet Guide to Nineteenth-Century Photography,” *Afterimage* 11, nos. 1 & 2 (Summer 1983): 7–12, reprinted in Abigail Solomon-Godeau, *Photography at the Dock: Essays on Photographic History, Institutions, and Practices* (Minneapolis: University of Minnesota Press, 1991), 4–27.

faithfully and performed incredible technical feats, including the creation of complex collages, to get the results he sought. As well, “Of the five [photographers], it was he who reproduced, most forcefully and through one single image, the monumentality of each structure.”²⁸ This analysis explains the genesis of the Louvre commission and Baldus’s involvement: by 1855, photographic documentation of an important building project seemed necessary and logical, and Baldus appeared as a photographer who could be trusted to produce it.

“Stone by Stone” by Malcolm Daniel focuses exclusively on this New Louvre production. In the article the author provides a history of the building project, detailing its purpose and significance as well as how it was accomplished, and describes the role that photography played, as viewed by government officials associated with the project. He notes the *Palais du Louvre et des Tuileries* photogravures as the Louvre photographs’ “final incarnation,” but does not describe the contents of the publication in any detail, and does not mention how the photogravures might relate to the photographs on which they are based. Indeed, he allots only two paragraphs to the books, writing that they “largely parallel the albums that Baldus had made earlier for the Minister of State,”²⁹ even when these books contain only 300 of the albums’ 1,149 images.

Barry Bergdoll, whose essay “A Matter of Time: Architects and Photographers in Second Empire France” (1994)³⁰ appears in Malcolm Daniel’s monograph on Édouard Baldus, focuses on both Baldus’s work for the *Mission héliographique* and the New Louvre commission as well as, in the context of architectural design of the era, his photogravure publications, principally *Palais du Louvre et des Tuileries*. While Bergdoll

²⁸ Ibid, 84. Author’s translation.

²⁹ Daniel, “Stone by Stone,” 120.

³⁰ Bergdoll, “Architects,” in Daniel, *Photographs*, 99–119.

identifies financial gain as one of the reasons that Baldus accepted both commissions, he does not describe them as constituting a professional strategy for Baldus, as he does the photogravure publications. In Bergdoll's view, the *Palais* volumes were "pattern books for architects, decorative sculptors, and...initiates in the new trade of interior decoration,"³¹ and Baldus controlled their marketing and distribution. Conversely, the commissioned works served the purpose of documentation on the building site, and belonged to the French government. As such, the photogravures were commercial products, while the commissioned works were not.

Le photographe et l'architecte. Edouard Baldus, Hector-Martin Lefuel et le chantier du Nouveau Louvre de Napoléon III, featuring an essay by the Musée d'Orsay's then-curator of photographs Françoise Heilbrun, was produced to accompany an exhibition focused on the construction of the New Louvre and Baldus's connection to the project. In addition to Heilbrun's text, it includes a chronology of the project, architectural drawings, notes on interior decoration and exterior sculpted elements, biographies of the sculptors involved, and sixty-one reproductions of Baldus's images from the building site. Of these, only the last is a photogravure, published in *Palais du Louvre et des Tuileries*. Similarly, Heilbrun's essay describes nearly all aspects of Baldus's career except his work in photogravure. *Palais du Louvre et des Tuileries* is only mentioned in a section on technical aspects of the photographer's work: Heilbrun writes that it was one of a number of photogravure publications Baldus produced on the subjects of decorative arts and architecture.³² It is striking that a larger discussion of *Palais* was not included in a book dedicated to promoting the significance of the New

³¹ Bergdoll, "Architects," 118.

³² Heilbrun, *Édouard*, 31.

Louvre as an architectural and political project; owing to its commercial circulation, the publication would have had a far greater impact on the contemporary study of the building's design, and more generally of architecture under Napoléon III, than the photographs, which were held and distributed almost entirely privately.³³

The latter three articles discussed in this section treat, in depth, the project that would ultimately lead to the first book of photogravures that Baldus would elaborate from original compositions or views, but pay little mind to the publication itself. Furthermore, de Mondenard's, Daniel's, and Heilbrun's texts highlight the artistry of Baldus's photographs, similarly to the monographs and biography analyzed in the previous section. This suggests that Baldus's photogravures have typically been considered only cursorily because of the process's historical disassociation with artistic practices.

Baldus and the historiography of photogravure

Where photogravures are discussed in texts devoted to nineteenth-century photographs, they tend to be addressed separately, as either a commercial or technical side project. Early photogravures are rarely presented as simply another kind of visual representation in scholarly literature or exhibitions alongside silver-based photographs. For example, "La gravure héliographique," by Philippe Néagu, appears as the final chapter in Françoise Heilbrun's catalogue *Charles Nègre, photographe, 1820–1880* (1980),³⁴ published to accompany an exhibition of the same name that was held in Arles and Paris in 1980/1981. Néagu describes Nègre's photogravures as occupying, with

³³ See footnote 74 for further information regarding the Louvre photographs' distribution.

³⁴ Françoise Heilbrun and Philippe Néagu, *Charles Nègre, photographe, 1820–1880* (Paris: Éditions des Musées nationaux, 1980).

Baldus's, a privileged place amongst those produced during the 1850s—rare examples of photogravures made by an artist, remarkable for their aesthetic qualities.³⁵ This follows Heilbrun's explanation, included in the catalogue introduction, for the presence of Nègre's photogravures in an exhibition and a catalogue that purposefully left out the photographer's commercial work: the prints earned Nègre notable renown, and manifested his "artistic gifts." Indeed, the reason his photogravure process was not broadly useable was because "technique was subordinated to the search for expression."³⁶ Heilbrun justifies the inclusion of photogravures by situating them as artworks.

D'encre et de charbon. Le concours photographique du Duc de Luynes 1856–1867 (1994)³⁷ is the catalogue for the eponymous exhibition that took place in Paris in 1994, curated by Sylvie Aubenas of the Bibliothèque nationale de France and Michel Poivert of the Société française de photographie. Its aim was to present the Duc de Luynes competition (described in Chapter 3) as a critical event in the history of photography by examining its purpose, results, and the role of its patron. This text and the exhibition it accompanied represent a rare instance of curatorial interest in early developments in photogravure. Unfortunately, as he did not take part in the competition, Baldus's name and work are absent from the catalogue. Aside from its subject, *D'encre* is significant for its positioning of Charles Nègre as a gifted technician and inventor rather than an artistically-minded photographer, and most importantly for its suggestion that the development of a stable, reproducible photographic process was of primary concern to those participating or interested in photographic production in the mid-nineteenth-

³⁵ Heilbrun and Néagu, *Charles Nègre*, 278.

³⁶ Ibid, 13 and 37. Author's translation.

³⁷ Sylvie Aubenas and Michel Poivert, *D'encre et de charbon : le concours photographique du Duc de Luynes, 1856–1867* (Paris: Bibliothèque nationale de France, 1994).

century. This era in photographic history is characterized by more than just the production of aesthetically pleasing salt and albumen prints.

The three attributed essays in *De Niépce à Stieglitz. La photographie en taille-douce* (1982)³⁸ by Swiss art historian Florian Rodari, American expert photogravure practitioner Jon Goodman, and Swiss printmaker and artist Pietro Sarto respectively, provide a yet more sweeping context for photogravure. These authors articulate the process as the outcome of hundreds of years of printmaking and attempts at mechanical and exact representation, as well as the integration of the concerns of artists, technical savants, and industrialists. But despite this broader view, the text is primarily concerned with situating the process as an art form possessed of a specific and often stunning visual syntax, and as a category of image making historically distinct from either photography or engraving. Baldus is not mentioned in this context; his name appears only in the book's fourth, unattributed essay that lists the same inventors and moments in the history of photomechanical printing as "The Photograph in Print" (1998)³⁹ by Sylvie Aubenas and "The Beginnings of Photogravure in Nineteenth Century France" (2001)⁴⁰ by Malcolm Daniel. Like *De Niépce à Stieglitz*, these two texts—the former published as a short chapter in Michel Frizot's *A New History of Photography*—provide chronological accounts of the early years of photogravure, and discuss the use of bitumen of Judea or bichromated gelatin as light-sensitive substances, and resin to create grain patterns on the

³⁸ Andre Jammes, Musée de l'Elysée, Musée Nicéphore Niépce, and Kunsthau Zürich, *De Niépce à Stieglitz: la photographie en taille-douce* (Lausanne: Musée de l'Elysée, 1982).

³⁹ Sylvie Aubenas, "The Photograph in Print," in Michel Frizot, ed., *The New History of Photography*, 225–231.

⁴⁰ Malcolm Daniel, "The Beginnings of Photogravure in Nineteenth Century France," in Malcolm Daniel and Florian Rodari, eds., *Graver la lumière: L'héliogravure d'Alfred Stieglitz à nos jours, ou la reconquête d'un instrument perdu* (Vevey: Fondation William Cuendet & Atelier de Saint-Prex, 2001).

plate; Joseph Nicéphore Niépce's *Cardinal Georges D'Amboise* (1826) and Nègre's views of Chartres Cathedral (1856–1857); the Duc de Luynes competition; the practitioners Nicéphore Niépce, William Henry Fox Talbot, Abel Niépce de Saint-Victor, Louis Armand Hippolyte Fizeau, Alphonse Poitevin, Nègre, and Baldus; and both name the contemporary interest in the widespread dissemination and permanence of images as reasons for the development of photomechanical processes. Far more attention is paid to Baldus in Daniels' article than in Aubenas': drawing upon historical texts by Louis Figuier and H. de la Blanchère as sources, Daniel explains Baldus's process as one that could produce prints by either the intaglio or relief method, depending both on electroplating and whether his copper plate, coated with a light-sensitive emulsion, was exposed through a negative or positive transparency.⁴¹ By contrast, Aubenas notes Baldus's role in photomechanical production of the mid-nineteenth-century only as follows: "Édouard-Denis Baldus also used undisclosed photogravure techniques (*Palais du Louvre et des Tuileries*, 1875)."⁴² This appears in a text box by Michel Frizot rather than in the body of the text.

Both Aubenas and Daniel write of Nègre's photogravures as more successful than any that came before; indeed, the latter author sees the aesthetic use of photogravure as beginning with Nègre. Nonetheless, Daniel writes that the process was only incorporated into art discourse at the end of the nineteenth-century, once it had been "freed" from its "purely reproductive tasks"⁴³ by the development of simpler and more effective photomechanical processes.

"The Printed Photograph and the Logic of Progress in Nineteenth Century

⁴¹ This process is explained in detail in Chapter 3.

⁴² Aubenas, "The Photograph," 231.

⁴³ Ibid, 11.

France” (1987),⁴⁴ by the art historian Jeff Rosen, provides a social history of photogravure. Rosen argues that there was a major effort to “align photography with preexisting industrial means of production,”⁴⁵ and that this reflected the contemporary belief that improvements in technology would lead to improvements in society, which in turn were seen by those in power as necessary for the success of industrial capitalism. He also makes the point that silver-based prints are today (at the time of publication) regarded as critical to the history of photography, while photomechanical prints are overlooked or “denigrated as commercial.”⁴⁶

Art historian Laurie Dahlberg’s *Victor Regnault and the March of Photography* (2005),⁴⁷ published 18 years after Rosen’s article, exemplifies Rosen’s point: though her book also explores image-making in nineteenth-century France as a social force—a force that joined the impulses of science, industry, and art, and that was symbolic of the arrival of the modern world—the subject of photogravure arises only once, in a brief passage on Victor Regnault’s connection to the Duc de Luynes competition. Baldus is not mentioned in connection with the process, but he is described elsewhere in the text as a “romantic landscapist.”⁴⁸ Given Dahlberg’s approach and concerns in this text, the absence of any mention of Baldus’s work at the forefront of mass communication through his photogravure publications is notable.

⁴⁴ Jeff Rosen, “The Printed Photograph and the Logic of Progress in Nineteenth Century France,” *Art Journal* 46.4 (1987): 305–311. Rosen wrote his PhD dissertation on a related subject: see “Lemercier et Compagnie: Photolithography and the Industrialization of Print Production in France, 1837–1859” (PhD diss., Northwestern University, 1988).

⁴⁵ Rosen, “The Printed Photograph,” 305.

⁴⁶ Ibid, 305.

⁴⁷ Laurie Dahlberg, *Victor Regnault and the Advance of Photography: The Art of Avoiding All Errors* (Princeton, NJ: Princeton University Press, 2005).

⁴⁸ Ibid, 145.

The Printed Picture (2008),⁴⁹ by printmaker and photographer Richard Benson and published by the Museum of Modern Art in New York City on the occasion of an exhibition, is a general reference on various printing methods. Beginning with prehistoric printing methods and moving through to the digital era, Benson explains the differences between and uses of intaglio, relief, and planographic printing, and includes sections on traditional ink prints, silver- and non-silver-based photographic prints, photographs in ink, and colour and digital photographic printing. A caption pertaining to a “photoglyptic engraving” by Talbot alludes to the plethora of divergent photogravure techniques practiced in the nineteenth-century but does not discuss them, and in the text photogravure is described as a single process—only the most current method, widely known as Talbot- Klič dust-grain gravure, is detailed. Benson discusses photogravure’s historical connection to image dissemination and covers retouching, but as with the authors of *De Niépce à Stieglitz*, he is most interested in aesthetics. He concentrates on the photogravures created by the Pictorialists and later practitioners, defining prints made by this process as “more beautiful than anything else in photography”⁵⁰ when perfectly executed.

The MA thesis “Héliogravures: The Unpublished Photogravure Process of Édouard Baldus” (2010)⁵¹ by Jennifer Yeates is the most substantial text dedicated to Baldus’s photogravures, as well as the only one to compare photographs and photogravures that he made from the same negatives. Yeates’s principal project was to discover Baldus’s photogravure process, which he never patented or published. The most crucial

⁴⁹ Richard Benson, *The Printed Picture* (New York: The Museum of Modern Art, 2008).

⁵⁰ Ibid, 234.

⁵¹ Jennifer I. Yeates, “Héliogravures: The Unpublished Photogravure Process of Édouard Baldus” (MA thesis, Ryerson University, 2010).

components of her work are a comparative study of the photomechanical prints and photographs pertaining to Baldus's *Les Principaux Monuments de la France, reproduits en héliogravure par E. Baldus 1869–1870*—through which she describes how Baldus made slight alterations to the images in translating them from photographs into photogravures—and a material evaluation of these same photogravures, in which Yeates describes such aspects as ink quality, grain, and visible retouching. Her conclusion hypothesizes a 23-step method through which Baldus may have produced his photogravures. This method largely echoes that put forward by Daniel and the texts from which he drew, important sources for Yeates, but adds that Baldus retouched his plates once etching was complete, inserting lines to reinforce certain areas of the plate and burnishing to mask others.

More than any of the other texts discussed here, Jacob Lewis's dissertation "Charles Nègre in Pursuit of the Photographic" (2012)⁵² provides an inclusive account of the development and practice of photogravure in mid-nineteenth-century France. Lewis's text discusses Nègre's photogravures as a crucial aspect of his overall production and conception of photography, which no previous study of the photographer has done. Baldus appears throughout the text, in sections where his work in the medium corresponds to Nègre's, and is situated alongside Nègre as a contemporary "premier practitioner"⁵³ of photography who viewed photomechanical reproduction as a crucial growth area of the medium.

Despite Lewis's more inclusive conception of image making, he maintains the categories of commercial and non-commercial created and deployed by earlier scholars.

⁵² Jacob Warren Lewis, "Charles Nègre in Pursuit of the Photographic" (PhD diss., Northwestern University, 2012).

⁵³ Ibid, 163.

He specifies that Nègre's process was not commercial, and intimates the same conception of Baldus: Nègre's photogravures of Chartres "run against the grain of the previously discussed producers [including Poitevin and Dufresne] by forefronting the quality of reproduction over commercial reproducibility." Lewis continues:

Nègre is different in that he acts as both a photographer like Le Secq, Pécarrière, and Berthier, and a photomechanical inventor and printer like Lemercier, Dumont, Poitevin, and Dufresne. ... [He] was a rare producer in control of all aspects of production, from the exposing of negatives to the pulling of proofs, setting him apart from his contemporaries.

Baldus, he writes, "plays a similar dual role."⁵⁴ Lewis broadens the discussion of nineteenth-century photography by placing Nègre and Baldus within a period of intense interest in forms of photographic reproduction, and by emphasizing Nègre's work in photogravure in order to demonstrate the photographer's historical importance.

As the texts analyzed in this last section reveal, historians since 1980 have approached photogravure in nineteenth-century France variously from aesthetic, technical, and socio-political standpoints. They show that discovering a workable photogravure process was paramount during this period, to safeguard against the fading and general deterioration observed in contemporary photographs and to increase the reproducibility and dissemination of photographic images, and note that many competing processes were concurrently developed. Nonetheless, photogravure is classified as a commercial enterprise in the scholarly literature, and a secondary area of study to photography. Baldus's work in the process is often mentioned in these writings but not singled out as particularly significant to the history of the medium, and it has not been explored in depth.

⁵⁴ Ibid, 367.

This literature survey demonstrates that Baldus's photogravure production constitutes an overlooked aspect of his career. There are several reasons for this. First, Baldus has been historicized both as an artist and as a skilled documentarian, and his photogravures have thus far been excluded from both narratives. Even accounts of the New Louvre project, with its direct connection to *Palais du Louvre et des Tuileries*, touch upon the publication only briefly, and de Mondenard's book *La Mission héliographique*, despite its interest in Baldus's remarkable technical capabilities and his later career, does not mention it. Second, Baldus did not participate in the Duc de Luynes competition or patent or publish his process. Therefore there is little reference material available to historians examining Baldus's photogravures. Finally, Baldus's work in photogravure has been classified as the commercial, rather than artistic or documentary, branch of his practice. This nomenclature, applied to work in the photogravure process over three decades of scholarship, has served to sever Baldus's photogravures from his photographs and suggest an inferiority, rendering them of little interest to historians of photography. While understandable in the context of mid- to late-twentieth-century photographic studies, this barrier now appears incoherent and counterproductive to an understanding of Baldus's entire career.

Chapter 2: *Palais du Louvre et des Tuileries*: Publication and distribution

In considering the place of *Palais du Louvre et des Tuileries* within Baldus's larger career, it is apparent that the publication was one of several self-directed projects that he produced, which include the aforementioned *Vues et monuments de France* and *Monuments de Paris*. As with these photographic albums, Baldus created *Palais* for a specific market—he had earned his living by selling images since the early 1850s, and thus recognized an intended audience as a prerequisite to the financial success of any enterprise. The question of who Baldus meant to reach with *Palais* will be addressed in this section through analyses of the book's publication history, marketing, and distribution. This will illuminate the purpose of the book as well as some of the choices Baldus made in its production, including his selection of the photogravure process.

Editions

Malcolm Daniel has identified and documented two editions of *Palais*: one that was self-published,⁵⁵ issued in nine instalments between 1869 and 1871 and comprising the first two volumes only, and one published by the Parisian firm Ve. A. Morel & Cie in 1875, comprising all three [figs. 1–2].⁵⁶ But the title page of the Volume II in the Hill Collection credits a different firm as the publisher: Ch. Claesen, a company that expanded its operations from Liège and Berlin to Paris in 1871.⁵⁷ Likewise, the cover imprint of the Volume II held by Northwestern University's Deering Library indicates

⁵⁵ Daniel does not specify the first edition as being self-published; this is suggested by the title page, on which Baldus appears as the only person or firm responsible for the publication.

⁵⁶ None of the title pages includes a printed date of publication. Dating is based on Daniel's research into advertisements in the *Bibliographie de France*. See Daniel, *Photographs*, note 259, 272.

⁵⁷ *Bibliographie de la France* (Paris: Cercle de la librairie, 1871), 997.

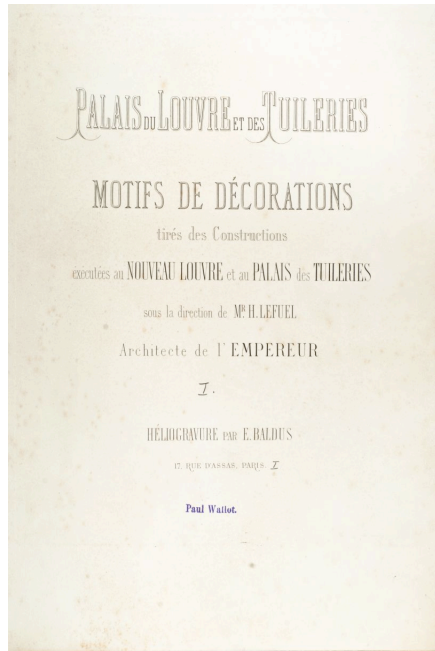


Fig. 1. *Palais du Louvre et des Tuileries*, Vol. I, title page. (Self-published edition.)

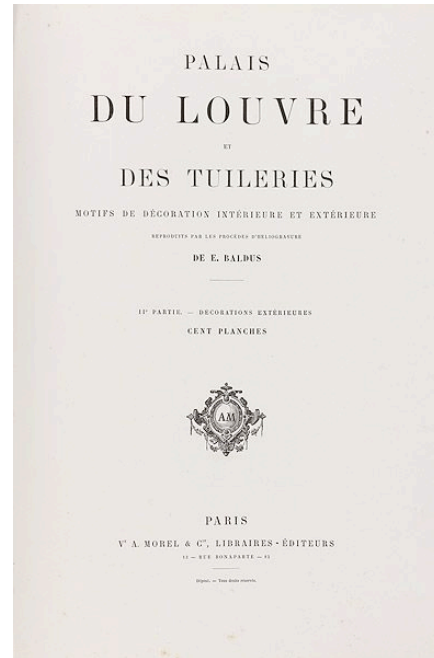


Fig. 2. *Palais du Louvre et des Tuileries*, Vol. II, title page. (Morel edition.)

J.E. Ogier as the publisher of that book. Finally, it was Paris publishing company J. Baudry that announced the appearance of the fifth instalment of *Palais du Louvre et des Tuileries* in the 1871 issue of the *Bibliographie de la France*.⁵⁸ *Palais* was therefore issued by at least three, probably four, separate publishers as well as by Baldus.

The Deering Library catalogue dates its J.E. Ogier volume to “1869–”; according to J. Baudry’s aforementioned *Bibliographie* announcement this firm was among *Palais*’ publishers by 1871, though the company may have begun producing the book concurrently with sales in 1869.⁵⁹ According to this information, the Ogier and Baudry editions were published alongside Baldus’s between 1869 and 1871. Ch. Claesen did not arrive in Paris until 1871; his version would therefore have appeared later.

⁵⁸ *Bibliographie*, 318. Malcolm Daniel indicates Baudry as a bookseller who offered the first instalment of *Palais* for sale in 1869 (“Stone by Stone,” 122), but in the 1871 *Bibliographie* he appears as an *éditeur* as well as the proprietor of a “librairie polytechnique”; he therefore may have produced as well as sold this publication.

⁵⁹ See footnote 58 above.

Palais's interior plates and exterior plates, those pertaining to Volumes I and II, appear to have been released interchangeably. The 1871 J. Baudry advertisement reads, "Published: Instalments I, III, and V. Interior decoration, for 37 fr. 50. Instalments II and IV. Exterior decoration, for 30 fr."⁶⁰ In other words, the first instalment comprised interior plates, the second exterior, the third interior, etc. Buyers willing to discount the plate numbers printed in the corner of each page could therefore not only bind their prints together in any order they liked, even leaving some out if they wished, but could place them together in a "Volume III"—a mixed interior/exterior volume—of their own creation. Baldus and his publishers left the ultimate presentation of the prints to their buyers, though the photographer's own vision of the final product is expressed in the print and instalment numbers.

Variant versions

Palais was released by its publishers 20 or 25 plates at a time, which buyers either left unbound or, more commonly, brought to a bookbinder to be made into books, with interior covers frequently wrapped with the marbled endpaper common to the period, and the spines embossed with the publication's title, author, and volume number. As a result of this publication scheme and the demonstrated multiplicity of publishers involved, the books vary in content from one set to the next. Any copy of *Palais du Louvre et des Tuileries* should therefore be approached only as a version of that publication, and not as its definitive incarnation. But these variations also reveal aspects of Baldus's production process with *Palais*, as well as who he expected the buyers to be and how they engaged

⁶⁰ *Bibliographie*, 318. Author's translation.

with the images.

I discovered a number of discrepancies between editions through comparative research in the collections of Robert Hill and the Canadian Centre for Architecture (CCA). The Hill Collection includes one complete bound set of *Palais*, comprising a Volume I published by Baldus, a Volume II by Claesen, and a Volume III, which lacks a title page, by an unknown publisher. The CCA holds five *Palais* books in total. What I will term their Set 1 includes bound copies of Volumes I to III.⁶¹ As evidenced by the title pages, the first two volumes of this set were published by Baldus, and the third by Morel. In the CCA's Set 2 are Volumes I and II only; they comprise loose sheets and were published by Morel.⁶²

The Hill Collection volumes contain 300 distinct prints: there are no repeats within volumes, and none of the prints in Volumes I or II reappears in Volume III. By contrast, two of the prints in the CCA's Volume II, Set 1, are found again in the set's Volume III: Plate 2, which shows two images, variations on hound dogs carved into a frieze, and Plate 35, which shows four decorative fragments arranged in a square, the top two patterned with interlocking branches and the bottom by like branches spreading outward from a central crown motif. In contrast to Hill's Volume III, this Volume III lacks the image of the column capital elaborately decorated with scrolls, garlands, female nudes, a crest of Napoléon, and a lion's fearsome head, and that of a symmetrically

⁶¹ Accession numbers PH1978:0038:001- PH1978:0038:003. In this set, Volume I comprises exterior views and Volume II comprises interior views, in contrast to those volumes in the Hill Collection, the Metropolitan Museum of Art in New York City, and the George Eastman House, which were also consulted. Furthermore, Volume I is generally acknowledged in the literature and catalogued in institutions as comprising interior views. For clarity, I will therefore refer to Set 1's volume of interior elements as Volume I, though it is in fact marked on its spine as Volume II.

⁶² These volumes are held in the CCA's library under the single call number IDM CORM4; ID:91-B1968.

carved stone planter in the Jardin des Tuileries (Plates 2 and 35 respectively).

Furthermore, where the object is pictured against a white background in Plate 89, Volume I of the Hill Collection copy, in Plate 89 in the CCA's Volume I, Set 2, the same object is pictured against black. Baldus evidently changed or altered the images he was using to produce his printing plates over time, working with different ones from edition to edition.

But even within editions the contents of the books varies from one copy to the next. As noted above, both the CCA Volume I, Set 1, and the Hill Collection Volume I were published by Baldus. Yet in comparing these two copies, I found that the plates included in each were not identical in four places: where Plate 36 of the CCA's version shows an ornately carved door or window surround, the same plate of the Hill Collection's version shows three similar horizontal panels. Both are captioned "Grands appartements des Tuileries"; where Plate 87 of the CCA copy shows a single vertical panel, with the top scooped into a crescent shape and the caption "Louvre", the same plate in the Hill Collection copy shows a fireplace surround with the caption "Ministère d'État"; where Plate 90 of the CCA copy shows what is perhaps a fragment of a ceiling moulding, reproduced at a large scale and decorated with cherubs, garlands, and other Classical motifs, the Hill Collection copy shows a smaller, simpler element with unusual geometry—pointed at the bottom, fanning out into three sides at the top—captioned "Ministère d'État"; finally, Plate 92 of the CCA copy shows a door or window surround, captioned "Louvre", while the same plate in the Hill Collection's copy is captioned "Ministère d'État" and shows a column adorned with a female nude. Additionally, Plate 36 of the CCA copy—the aforementioned decorative door or window surround—is

identical to its own Plate 86. This version of Volume I therefore comprises 99 distinct images, as compared to the standard 100.

Given the four-year gap between the first two *Palais* volumes and the last, and the fact that more than 200 printing plates were used in the production of Volumes I and II, I believe that Baldus planned to produce only two volumes of photogravures but prepared more than the necessary number of plates. He would undoubtedly have evaluated how certain Louvre photographs would reproduce as photogravures before making his final selection of images to include—what they would look like in this new form, how well their aspects of interest would translate, and the facility with which they could be altered and retouched. Some of the ones he did not choose were evidently distributed on an occasional basis anyway, likely to replace worn out plates, and others were included in the later Volume III. As Baldus's motivation for most, if not all, of his photographic work was the prospect of financial gain, we can imagine that his decision to create a third volume years after the first two was inspired by the same incentive. But the appearance of Volume III also conveys Baldus's certainty that there were more images from his Louvre commission worth circulating, and that those customers who had already purchased 200 prints of French Neo-Classical architectural and decorative design would want 100 more.

Distribution

There were several *hommes d'affaires* in Paris of the late 1860s and early 1870s who believed that *Palais* would find a market. These included Baldus, who evidently took great care in producing the prints (as will be discussed in detail in Chapter 3) and for whom they represented years of work, and the clutch of publishers who wished to be

involved in his project. The buyers who constituted the intended market can be construed through an analysis of how and where the book was sold, along with patterns in its distribution.

I have thus far located volumes of *Palais* in 76 public and private institutions in 13 countries in North America and Western Europe.⁶³ These consist of art, design, photography, and architecture museums; national and municipal libraries, including those specialized in art or architecture and general reference; and art schools and universities. This list gives us a sense of the books' present-day audience as a disparate one, composed of people who might approach *Palais* as reference material on Second Empire architectural design, as an object of interest in the history of art, photography, or print making, or as a collection of art reproductions. But what is the ownership history of these volumes?

The CCA's Set 2 was acquired from the estate of the Canadian architect Ernest Cormier (1885–1980), whose voluminous library served to inspire his own designs.⁶⁴ As the Cormier scholar Aliko Economides has stated, these frequently included bas-relief,⁶⁵ a common feature of the façades of the Louvre and Tuileries palaces and of the fragments pictured in *Palais*. The bookplates in the CCA's Set 1 indicate that it was previously held by the Avery Architectural and Fine Arts Library of Columbia University.⁶⁶ The Hill Collection volumes each feature the bookplate of the Dutch Modernist architect Jan Wils (1891–1972) and the blue stamp of the German architect Paul Wallot (1841–1912), the builder of the Reichstag in Berlin. Wallot would have seen much to emulate in Baldus's

⁶³ See Appendix I, p. 75.

⁶⁴ This set of books comprises part of Cormier's archive, which is held at the CCA.

⁶⁵ Aliko Economides (PhD candidate, Harvard University), interview by author, Montreal, QC, 31 May 2013.

⁶⁶ The library retains one complete set of *Palais* as well as approximately 39 loose plates.

prints, with his own aesthetic sensibility reflected in the Neo-Classical motifs of the Louvre and Tuileries palaces. By contrast, Wils' style was decidedly of the modern era; his purchase of the books around 1920 was likely spurred by a general interest in exemplary monumental architecture.⁶⁷ As indicated by their bookplates, the volumes held by the Metropolitan Museum of Art in New York were donated by George L. Morse (1836–1924), a former president of the borough chapter of the American Institute of Architects who had a taste for French Neo-Baroque design.⁶⁸ Finally, the École nationale supérieure des beaux-arts de Paris (ENSBA) acquired their complete set of *Palais*, the 1875 Morel edition, in 1877.⁶⁹ It was purchased for the École by a bureau of the French government, and it remains in their library to this day. Thus, where information on the provenance of specific copies of *Palais* is available, it confirms that the publication has been collected by professional architects,⁷⁰ and that, as the copy acquired by the ENSBA reveals, it has long been considered a worthwhile acquisition by specialized libraries for use by students of art and architecture.

Notices found in issues of the *Bibliographie de la France* dating from the first year of *Palais*'s publication through the end of the nineteenth-century show that it was sought after during this time by booksellers in Vienna (1888), Leipzig (1896 and 1900), and Paris (1900).⁷¹ The Vienna bookseller, Lehmann and Wentzel, was also a publisher

⁶⁷ Robert Hill, email to author, 28 May 2013.

⁶⁸ See Joseph J. Korom, *Skyscraper Façades of the Gilded Age: Fifty-One Extravagant Designs, 1875–1910* (Jefferson, N.C.: McFarland and Company, 2013), 147–148; and AIA Brooklyn, “Past Presidents,” accessed 16 July 2013, <http://www.aiabrooklyn.org/officers/past-presidents/>.

⁶⁹ Emmanuel Schwartz (Research Curator, École des beaux arts), email to author, 31 May 2013.

⁷⁰ This was first conjectured by Barry Bergdoll in his 1994 essay. See Bergdoll, “Architects,” 118.

⁷¹ This is a small sample of those bookshops seeking to purchase *Palais* between 1869 and 1900, as travel constraints necessitated that I examine only those issues of the annual *Bibliographie* which had been digitized by the Bibliothèque nationale de France in full text mode at the time of writing: 1870–1878, 1881–1886, 1888–1893, and 1895–1900. The examples discussed in this paragraph are drawn from these sources.

that specialized in books on engineering and technology as well as, to a lesser extent, art and architecture. In its 1888 *Bibliographie* announcement, the firm requests two titles in addition to Baldus's *Palais: L'Art pour tous* and the British architectural journal *Building News*. In 1896 Karl W. Hiersemann, the Leipzig establishment, sought one complete set of *Palais* and one additional Volume II alongside 20 other titles, including books on travel, science, antiquities, and engineering, as well as one title related to architecture (published by the Société d'architecture de Belgique) and one to the decorative arts, Spitzer's 1893 *Catalogue des objets d'art*. In 1900, Hiersemann posted another *demande* for *Palais*, this time in addition to 55 other titles. Among these, six were volumes published in France on the subject of the fine and decorative arts, with an additional two on the same topic published elsewhere in Europe. The remaining books on the Hiersemann list pertain to travel and geography, literature, anthropology, history, and international politics. Hiersemann's shop evidently catered to patrons with a broad range of interests, though titles on art and architecture were at times foregrounded: in 1893, the shop's 773-page catalogue focused exclusively on these subjects, with books acquired from the library of the architect Heinrich Müller, who had died three years earlier. The Parisian bookseller and publisher V. Gastinger specialized in books on architecture and the fine and decorative arts, with a particular focus on the former. Of the 19 books it sought to acquire with Baldus's in 1900, 14 were related to one of these two subjects.

During the same period, from 1869–1900, at least three Parisian bookshops offered *Palais* for sale.⁷² A. Mendel and A. Le Poutel advertised it in 1888 and 1896 respectively, and both establishments appear to have dealt in art and architecture books

⁷² Again, this is only a sample of those bookshops selling *Palais* between 1869 and 1900. See footnote 71 above.

exclusively: Mendel included *Palais* on a list of 35 publications, and Le Poultel on a list of 28, with all of these titles dedicated to architecture or the decorative, industrial, fine, and architectural arts, primarily those of France but additionally of other countries around the world. The bookseller A. Guillemin, by contrast, placed Baldus's publication largely in the context of French studies; this shop advertised *Palais* in 1888 alongside books on the history of the Second Empire, the history of France, travel in the Pyrenées, and French geography, as well as French architecture and decorative arts.

Ve. A. Morel, J.E. Ogier, Ch. Claesen, and J. Baudry—the *Palais* publishers discussed above—all operated bookshops as well as publishing imprints, and the material they traded in also indicates the interests of their clientele. In its communications and on the title pages of its books, Claesen marketed itself as a “Librairie spéciale des arts industriels et décoratifs”; J. Baudry, according to its aforementioned 1871 announcement of the final instalment of *Palais*, was a “Librairie polytechnique.” These shops targeted buyers seeking books on the applied arts and technical subjects, and Baldus's *Palais du Louvre et des Tuileries* would have been marketed in such contexts.

While *Palais* was included in catalogues focused on the fine and applied arts, architecture, technology, and the French nation, it was also sold as a general interest publication alongside books on world history, travel, anthropology, science, literature, and other subjects. It was therefore valued by customers with wide ranging interests, and any bookseller who was personally drawn to it would have purchased it for sale, assured that it would appeal to one buyer or another. That said, it nonetheless appears to have been offered primarily to art and architecture enthusiasts, which combined with my own

findings related to Baldus's editing process⁷³—his preference for front and side views, thematically-similar objects, and frequent disregard for explanatory captions; the care he took in producing the photogravures to ensure that the forms and design details of the objects pictured were clearly discernible; and the attention he paid to divorcing them, in almost every instance, from any larger context—suggests that Baldus and his publishers conceived of *Palais* as a book primarily for architects and students of architecture, design, and fine art, who were encouraged to emulate the traditions of their fields.

Lending further support to this hypothesis is the fact that, unlike the albums of *Réunion des Tuileries au Louvre*, which were explicitly intended to celebrate the magnificent new palace and the regime that built it, *Palais du Louvre et des Tuileries* has no political message. Aside from its title, the suggestion that the objects and façades of these buildings even exist within a larger context occurs only once, in the last plate of Volume II: it shows a long, vertically oriented view of the Tuileries palace, which follows the length of the building from the domed roof and the clock installed in the elaborate pediment beneath it to the ground-level archway three stories below. Curtains hang in the windows: a small detail that, after 199 prints, clarifies that the building is in fact a residence, and not simply a location of display for fragments of architectural design. Under the archway is a group of figures in varying military garb: different hats, different jackets. Though none are clearly rendered, the middle figure is most discernible, flanked by men in darker costumes. Two soldiers stand at attention in the foreground, wearing the plumed caps of the Imperial Guard. Their gloved hands grip rifles that are held at their sides.

⁷³ This process will be examined in detail in Chapter 4.

While *Palais*' primary audience would have understood this image partly as illustrative of the architectural and design details that they could emulate in their own practices, it is nonetheless the single instance in the three volumes in which humanity is directly represented, and its caption places the entire volume, and its predecessor, suddenly and dramatically in the context of Second Empire France: "Tuileries. Avant l'Incendie par la Commune."

Aside from this remarkable print, there is nothing in *Palais* to appeal expressly to those interested in the larger significances—historical, political, cultural—of the New Louvre building project. Given the number of prints Baldus made and his earlier experience with photogravure publications he would have hoped to reach a sizeable market with this endeavour, but the visual content of the prints and structure of the books, divided as they are into interior and exterior decorative elements and views, implies that he was targeting an audience with specialized interests. Nonetheless, even without knowing how many copies of *Palais* exist in private collections like Robert Hill's, Baldus's Louvre images demonstrably reached a much larger and more dispersed audience as photogravures than as photographs—*Réunion des Tuileries au Louvre* was produced in only 36 sets, and of those sets only eight were apparently made accessible to the public.⁷⁴ The photogravures continue to be more widely disseminated and accessible today, a result that Baldus would have expected and worked toward.

⁷⁴ According to Malcolm Daniel, the public repositories suggested to the Minister of State by Hector Lefuel in a letter of 1858 are as follows: the Bibliothèque impériale (two copies; now the Bibliothèque nationale de France), and the municipal libraries of Lyon, Bordeaux, Toulouse, Rouen, Valenciennes, and Versailles (Daniel, *Photographs*, 264). Whether *Réunion* was in fact delivered to these locations remains undetermined.

Chapter 3: The *Palais* prints

It is a marked characteristic of many well-known nineteenth-century French photographers that their ingenuity as inventors and scientists matched or even exceeded their abilities as artists. The contributions of Édouard Baldus to the development of photography—like those of Hippolyte Bayard, Charles Nègre, and Gustave Le Gray—have been discussed in both technical and aesthetic terms: while he is a *photographe artiste* to Sylvie Aubenas⁷⁵ and an *artiste photographe* to Malcolm Daniel,⁷⁶ he is equally, in the view of these scholars and curators, a gifted technician—a master printer and the creator of a paper negative process that yielded superb results. Daniel, Jennifer Yeates, and others have also cited Baldus as the inventor, in the 1850s,⁷⁷ of a photogravure process that he would refine over the subsequent 10 years. This chapter will explore the technicalities and visual results of that process in comparison with those created by the photographer's contemporaries to theorize what Baldus hoped to achieve with his photomechanical images.

Photomechanical reproduction in mid-century France

Baldus's first photogravure publication, *Receuil d'ornements*, was published in 1866 when the Duc de Luynes competition was still underway. A protracted 11-year

⁷⁵In Aubenas' understanding, and as expounded in her "Physiologie du calotypiste" (Aubenas and Roubert, *Primitifs*, 2010), this is a contemporary term applied to artists who practiced photography as well as to photographers whose work was, or should have been, considered art. She includes Baldus, along with Nègre, Le Secq and Le Gray, in this category of image-makers.

⁷⁶This is the title of the principal chapter in Daniel's monograph, *The Photographs of Édouard Baldus* (1994).

⁷⁷As Malcolm Daniel has pointed out, Ernest Lacan wrote in an 1867 issue of *Le Moniteur de la photographie* that Baldus began making photogravures in 1854. However, the minutes of the 2 July 1869 meeting of the SFP, published in the organization's *Bulletin*, are not as precise, stating: "M. Baldus fait hommage à la Société de deux épreuves de gravures photographiques destinées à ses Archives. L'une d'elles a été obtenue par lui dès 1850". (Tome XV, 13).

contest conceived of and financed by Honoré d'Albert, the duke of Luynes, the competition consisted of two prizes intended to stimulate research into stable photographic and photomechanical print production. The larger prize was to reward the inventor of the best means of photomechanical reproduction—a nascent endeavour in France, and one in which the duke, an amateur archeologist and member of the SFP, was particularly interested. Sylvie Aubenas has written that d'Albert's desire for a workable means of reproducing photographs mechanically in ink was not singular: "From the birth of photography in 1839, it was clear to everyone who believed in its future that it could be of great service to the arts and sciences. But it was also apparent that this service would be effective only if the images produced were multiplied and disseminated."⁷⁸ They would also have to be stable and permanent, Aubenas adds. None of the photographic processes currently in use when the competition was launched in 1857 fulfilled these requirements satisfactorily.

Baldus's early experimentation in photogravure was therefore undertaken during a time of great interest in and excitement around new photomechanical printing methods. But unlike Hippolyte Fizeau, Nègre, Alphonse Poitevin, and other contemporaries in Paris who were actively engaged with advancing this technology, he was not particularly public in his endeavours. According to Malcolm Daniel, Baldus did exhibit his photogravures twice in 1855, in Amsterdam and Paris, and presented them to his colleagues in the photographic societies of Paris as early as 1854,⁷⁹ but he did not participate in the Duc de Luynes competition and did not publish his photogravure process at any point. He was significantly occupied otherwise, with four public and

⁷⁸ Aubenas and Poivert, *D'encre*, 3. Author's translation.

⁷⁹ Daniel, *Photographs*, Appendix 9, 242 and 35–36.

private photographic commissions and three entrepreneurial projects to complete between 1855 and 1862.⁸⁰ Nonetheless, the photogravure prints he produced and shared in the 1850s were well received. In 1854, Baldus presented one that reproduced a typical Jean Le Pautre engraving—two cherubs wreathed by swirling flora—to the editors of *La Lumière*. The critic Paul Nibelle wrote of this work:

We would like to write a long article about this fine work, which the artist has undertaken with much zeal and talent; but the plate we have before our eyes relates, better than we ever could, the progress that [Baldus] has made and the importance of his oeuvre.⁸¹

By the time the first instalment of *Palais du Louvre et des Tuileries* was issued in 1869, Poitevin's photolithographic process had been awarded the Duc de Luynes prize, Nègre had invented and published a photogravure process that produced widely renowned prints, and the Englishman Walter Bentley Woodbury's woodburytype, which eventually became the most popular photomechanical process of the nineteenth-century, was in common use. Baldus therefore had several workable photomechanical processes available to him, yet he continued to develop and apply his own. The reasons for this are manifold: by doing so he avoided patent fees; maintained and strengthened the reputation for technical brilliance that had helped elevate him above the many professional photographers working in Paris at the time; participated in the advancement of his medium in what was then deemed the most crucial way; and achieved visual results comparable if not preferable to those yielded by others' processes, and perhaps by simpler means.

⁸⁰ These are listed on page 1 of this thesis.

⁸¹ P. Nibelle, "Gravure héliographique," *La Lumière* (29 April 1854), 67. Author's translation.

Baldus's process

In the 2001 exhibition catalogue *Graver la lumière*, Malcolm Daniel published an account of Baldus's photogravure process that drew from historic texts including Louis Figuier's *Les merveilles de la science ou description populaire des inventions modernes* (1869) and H. de la Blanchère's *Répertoire encyclopédique de photographie* (1864). Figuier, a populist science writer, and de la Blanchère described Baldus's prints as issuing from both intaglio and relief methods of printing. This is unusual, as photomechanical processes are typically divided into intaglio, relief, or planographic methods. The process developed by Nègre, for instance, produced intaglio plates, meaning that the image was etched into the surface of the printing matrix. Ink was applied such that it was held only in these etched reservoirs, and then transferred to paper under the immense pressure of the printing press. In relief printing, the image is raised above the surface of the matrix and can thus be printed with text. Relief printing became possible at the industrial level only at the end of the nineteenth-century, following the concurrent invention and refinement of the halftone process by figures including Georg Meisenbach, Frederic Ives, and Charles-Guillaume Petit.⁸² In halftone printing, the image is broken into dots of black and white by a screen; by a trick of optics, this renders areas of grey. Planographic processes consist of printing from a flat surface, and are based on the immiscibility of oil and water—greasy printer's ink does not adhere to damp portions of the plate, which are created in correspondence with the light areas of the image. Photolithography, first developed by Poitevin (1855), is one example of the many planographic processes in commercial use from the 1860s right up to the digital era.

⁸² Thierry Gervais, "La similigravure : le récit d'une invention (1878–1893)," *Nouvelles de l'Estampe* 229 (May 2010): 6–25.

The term “photogravure” is typically applied to processes utilizing the intaglio method, such as Nègre’s and, at least intermittently, Baldus’s. From the 1850s to the 1880s, when it was essentially standardized following the advancements of the Austrian artist Karl Klič, the process for obtaining a photogravure print could vary significantly between practitioners. However, all processes stemmed from two principles: that certain light-sensitive materials harden and become insoluble where exposed to light, forming an acid resist; and that the more gradually acid is allowed to work through a resist, etching the image onto the plate, the more finely differentiated the depths of the etched reservoirs will be. This differentiation allows for the production of mid-tones—the greys that distinguish a photograph from a traditional intaglio or relief print, which are composed entirely of black and white—that, in the mid-nineteenth-century, was central to the concept of a successful photomechanical process.

De la Blanchère and Figuier (and through their writings, Daniel) explain the duality of Baldus’s process as the result of electroplating, a technique wherein a copper printing plate is attached to the pole of a battery while submerged in an acid bath. After obtaining an image in hardened bitumen of Judea or bichromated gelatin on the surface of a copper plate by exposure to light through a transparency, Baldus submerged the plate in a copper sulfate solution and connected it to either the carbon (positive) or zinc (negative) pole of a Bunsen cell, a battery invented in 1841 by the German chemist Robert Wilhelm Bunsen to extract metals. Connection to the positive pole caused the areas of the plate unprotected by the resist to build up on its surface, producing an intaglio plate, and connection to the negative led the same areas to be etched below the plate’s surface;

according to de la Blanchère and Figuier, this produced a matrix suitable for relief printing.⁸³

Figuier's *Les merveilles*, published five years after de la Blanchère's text, states that at the time of publication Baldus no longer utilized the electroplating technique in the production of his photomechanical prints. He now coated the copper plate with a layer of bichromated gelatin, exposed it to light through a transparency, and washed the unexposed gelatin away before placing the plate in a bath of ferric chloride. This was a rather ineffective means of creating the variegated reservoirs necessary for obtaining a broad tonal range, as it produced only a shallow relief. Figuier reports that, to compensate, Baldus rolled the plate with printer's ink—this acted as a temporary acid resist, adhering to the areas that were already dark enough—and then re-immersed the plate in the ferric chloride solution to further etch all the other areas. This was a standard printer's trick, and could be repeated until the engraved areas differed enough in depth to produce mid-tones in the final print.⁸⁴

Jennifer Yeates, drawing from Daniel's article and from comparative studies of photogravure prints by Baldus, Stieglitz, Emerson, Klíč, Nègre, Talbot, and Niépce de Saint-Victor in her 2010 thesis, arrives at the same conclusion that Baldus etched his plates repeatedly.⁸⁵ But it is very difficult to achieve subtle black-to-white transitions only through manual stopping out⁸⁶ and re-etching, and such transitions are a defining aspect of many of Baldus's *Palais* photogravures [fig. 3]. Charles Nègre's 1856 patent

⁸³ Owing to the limited scope of this thesis, I have chosen to exclude a detailed examination of this hypothetical aspect of Baldus's photogravure process.

⁸⁴ Louis Figuier, *Les merveilles de la science* (Paris: Furne, Jouvet et Cie., 1869), 136.

⁸⁵ Yeates, "Héliogravures," 38.

⁸⁶ The process by which certain areas of a photographic print or plate are masked to prevent their exposure to light or, in the case of photogravures, acid.

indicates that his photogravure process involved successive etchings in acid, and the ability of his process to produce mid-tones is forcefully evident in his famous images of Chartres Cathedral [fig. 4] and his photogravure illustrations for the Duc de Luynes' *Voyage d'exploration à la mer Morte* (1872). But Nègre also electroplated his plates with gold after exposure,⁸⁷ depositing a fine grain onto the surface of the plate that, as with the traditional printmaking process of aquatint, created a network of tiny pockets between the grains that could be etched to various depths, producing a tonal print.⁸⁸ The process of Abel Niépce de Saint-Victor also utilized this principle of aquatint; he dusted his plates with rosin following the dissolution of the unexposed bitumen. Indeed, the application of an aquatint texture to the surface of the plate eventually became a standard feature of the photogravure process as described by the contemporary practitioners Richard Benson and Jon Goodman.⁸⁹ Was this a feature of Baldus's process as well?

There is presently another common way of producing the continuous tone desired of photomechanical positives: the use of a screen to create a dot or grid pattern on the plate.⁹⁰ This method was also known in the 1850s—William Henry Fox Talbot, for example, used gauze as a screen in the technique he patented in 1852⁹¹—but remained unrefined and little utilized until the 1890s. Even Talbot had switched to the aquatint method by 1858, using gum copal powder melted onto the plate to produce the grain.⁹² The regular, sharp grain pattern of a print produced by a screen is recognizable under

⁸⁷ Lewis, *Charles Nègre*, 289.

⁸⁸ Benson, *Picture*, 40; Lewis, *Charles Nègre*, 280.

⁸⁹ Benson, *Picture*, 230; Jon Goodman, "A Note on the Photogravure Process," accessed 17 June 2013, <http://jgoodgravure.com/about.html>.

⁹⁰ William Crawford, *The Keepers of Light: A History and Working Guide to Early Photographic Processes* (Dobbs Ferry, New York: Morgan & Morgan Inc., 1979), 246–247; Deli Sacilotto, *Photographic Printmaking Techniques* (New York: Watson-Guption Publications, 1982), 116–119.

⁹¹ Crawford, *Keepers*, 244; Herbert Denison, *A treatise on photogravure in intaglio by the Talbot-Klic process* (London: Illife, n.d. ca. 1890), 132–133.

⁹² Crawford, *Keepers*, 244–245.



Fig. 3. *Palais du Louvre et des Tuileries*, Vol. II, Plate 7. Photogravure.



Fig. 4. Charles Nègre, *Chartres Cathedral*. South Transept Porch, Left Portal. Photogravure.

magnification. Examined with a loupe, Baldus's *Palais* prints exhibit an irregular and very fine grain pattern that is difficult to distinguish from the fibres of the paper. I therefore believe that Baldus grained his plates prior to etching in order to achieve the mid-tones visible in many of these prints, as Niépce de Saint-Victor and Nègre did, though neither de la Blanchère, Daniel, Figuier, nor Yeates wrote of this as an aspect of his process. Given the number of prints he made for *Palais du Louvre et des Tuileries* and his intention to profit from them, it is likely that for this step he used a cheaper alternative to the gold favoured by Nègre, such as a dusting of rosin or asphaltum powder, which adhered to the plate when heated.⁹³

Finally, though the *Palais* photogravures exhibit a range of tones between black and white, they are nonetheless often high in contrast. In fact, among their most striking

⁹³ Sacilotto, *Photographic*, 118.

features is the rich black background against which Baldus isolates bright plaster or stone objects in almost 20 percent of the prints.⁹⁴ This indicates that the ferric chloride solution Baldus was using etched more quickly through the gelatin resist than the acid bath used by Nègre,⁹⁵ whose *Voyage d'exploration* prints are far greyer, if also grainier, than Baldus's of *Palais du Louvre et des Tuileries*. The more slowly the acid worked through the resist, the longer the possible tonal range. Taken together, the features of the process developed by Baldus establish that it was among the most successful, by contemporary standards, of those conceived during this period of great interest in photogravure.

Formal attributes of the prints

Writing in 1867 of Baldus's photogravures, Ernest Lacan deemed them definitive proof that "photographic engraving is now a *fait accompli*."⁹⁶ But Baldus would naturally have shown the critic his best work; while many of his prints are indeed exquisite, the 300 that comprise *Palais* are demonstrably inconsistent, as will be discussed below. First, their uniformities, all of which relate to the presentation of the images:⁹⁷ the title of the publication appears at the top of each print; the subject of each print is identified as pertaining either to the interior or exterior of the two palaces by the letters 'INT' or 'EXT' respectively, which appear at the top left corner of every print, with the plate

⁹⁴ Volume I (Interior views): 30 black backgrounds, 70 white; Volume II (Exterior views): nine black backgrounds, 81 white, 10 façades (no "background"); Volume III (Interior and exterior views): 16 black backgrounds, 80 white, two façades.

⁹⁵ As yet there is no consensus on the chemistry of this solution, though William Crawford posits it as nitric acid. See Crawford, *Keepers*, 283.

⁹⁶ Ernest Lacan, "Gravure héliographique," *Le Moniteur de la Photographie* (1867), 45. Author's translation.

⁹⁷ Variations on the information subsequently presented are as follows: the title, *Palais du Louvre*, is not printed on Plates 11, 13, 14, 18, 19, 21, 23, 24, or 26 of Volume II, and is found in blank space in the centre of the print, rather than at the top of the page, in Plates 30 and 37 of Volume II; and the credit "Heliogre de E. Baldus" is not printed on Plates 6 or 10, Volume I, and appears as "Hre E. Baldus" in Plate 10, Volume II.

number at the top right; each print is captioned, though the amount of information provided by these captions varies—there is either a general caption, for example “Nouveau Louvre,” “Jardins des Tuileries,” “Entrée des Champs-Élysées,” or “Guichet de l’Empereur,” or a general caption combined with a secondary caption that suggests the nature of the object pictured or its location, such as “Ministère d’État,” “Salon Théâtre,” “Escalier,” “Grands Appartements,” and “Façade sur la Cour”;⁹⁸ and Baldus’s name is always printed below the caption, identifying the print as his.

By contrast, and as mentioned above, the images themselves vary from one to the next. This is clear in a sample set of plates comprising the first 20 of Volume III: for example, Plate 11 [fig. 5] shows what are likely two sections of a cornice from the Tuileries palace. Expertly isolated against a white background, the images are lined up along the top, providing a sense of the element’s continuation. The texture and form of each intricate detail is also vividly apparent—the tonal range is broad, with the shadow areas defined by progressively darkening greys—and the scale of the two images demands their gradual consideration by the slow movement of the eye over the entire page.

As a second example, Plate 6 [fig. 6] also shows two images against a white background: one full and one detail view of statues on the façade of the Louvre palace. But here the relation between the two images is unclear, the grain pattern is relatively coarse, and the images are not sharp and are smaller than those of the Tuileries palace cornice [fig. 5]. Furthermore, their isolation is far less clean or complete: we see areas behind them that Baldus would likely have wanted to eliminate, given the quality of other

⁹⁸ It is notable that while 99 percent of the prints in Volume I supply primary and secondary captions, only 45 percent in Volume II and none of the prints in Volume III do the same—all of the pictures in Volume III are labeled with primary captions only.

prints in this set of 20, and indeed the entire publication. The contrast in the print is stark, making it difficult to ascertain the details in some areas.

A last example, Plate 5 [fig. 7] shows a fragment of interior decoration destined for a staircase in the Tuileries palace, placed against a black background. Again, the contrast is strong in this print, with information lost in its darkest and brightest passages. But the effect of these contrasting shades is so striking that Baldus likely intended it.⁹⁹ white against black, seemingly floating in empty space, the element draws the eye irresistibly; a crucifix protruding from its top appears like a beacon in the blackness around it. Two *putti* carrying garlands and trailing streaming fabric appear at the left and right, flanking a central “N”.¹⁰⁰ The black background is opaque with a velvety texture, a common result of re-etching in photogravure. The details are sharp, with the mottled appearance of the plaster clearly rendered on the upper and lower portions of the element’s left side.

⁹⁹ Malcolm Daniel has imagined Baldus’s reaction to the cloister of Saint-Trophime in Arles in 1851 as one of attraction to the dramatic contrast between light and dark he found there, and a desire to render it photographically: “On the right a corner pier elaborately carved with the figures of Saints Peter, Trophime, and John the Evangelist began a lively rhythm of paired colonnettes, storiated capitals, and bas-relief piers, all dramatically three-dimensional in the strong sunlight of the cloister garden and the cool shadows of the gallery interior. Here, indeed, was a scene worthy of representation...” (Daniel, *Photographs*, 21); Ernest Lacan, writing in typically purple prose of Baldus’s photograph of a funerary monument by the sculptor Germain Pilon, noted the photographer’s expert use of lighting to describe the beauty of sculpted form: “[The light] slides softly across these pure faces, it passes lovingly between the light curls of hair styled *à la greque*, it follows the rounded contours of these delicate arms, these voluptuous breasts, to reveal their beauty; it searches beneath each diaphanous fold of fabric to reveal, to charmed eyes, the elegant forms it covers up: the sculptor’s genius has bestowed these chaste creations with beauty, and the light gives them warmth and life.” (Lacan, “Revue photographique,” *La Lumière* (1 July 1854), 103. Author’s translation.)

¹⁰⁰ The letter ‘N’, representing Emperor Napoléon III, is a common motif across the three volumes.



Fig. 5. *Palais du Louvre et des Tuileries*, Vol. III, Plate 11. Photogravure.



Fig. 6. *Palais du Louvre et des Tuileries*, Vol. III, Plate 6. Photogravure.



Fig. 7. *Palais du Louvre et des Tuileries*, Vol. III, Plate 5. Photogravure.

Baldus's *Palais* prints therefore vary in their individual clarity, tonal range, and overall quality; despite the critical approval it received, Baldus's photogravure process was manifestly inconsistent. Like Nègre's, it continued to produce variable results after more than a decade of experimentation and practice.¹⁰¹ But it was also flexible and controllable enough to accommodate Baldus's changeable idea of what constituted a satisfactory final print, for example with regard to lateral reversal. This is a standard feature of intaglio prints, the result of turning the non-reversed plate over onto the paper in the press, but Baldus's prints do not always exhibit it. Owing to certain visual motifs or signatures, I have identified 14 plates as reading correctly.¹⁰² There are likely more, but as the majority of Baldus's *Palais* subjects are either symmetrical or possess no features that would identify them as reversed or not, such as letters or numbers, and without the actual objects from the New Louvre or Baldus's original photographs for reference, it is impossible to distinguish them from the reversed prints.

Examination of Baldus's prints indicates that like Niépce de Saint-Victor, Nègre, and Poitevin, Baldus had invented a photomechanical process wholly capable of producing prints that mimicked a photograph's tonal gradations. Based on the volume of prints he produced for *Palais*, his process was furthermore relatively usable and inexpensive. It also created prints that would have suited Baldus's taste for dramatic lighting and contrast, and interest in the articulation of three-dimensional space. How the photogravure process he formulated in the 1860s suited his new vision for his earlier

¹⁰¹ In his dissertation, Jacob Lewis writes of the "varying quality" of Nègre's photogravures for Louis Vignes' *Voyage à la mer Morte* and notes the "subtle differences between proofs pulled from different states of the plate." Lewis, *Charles Nègre*, 333.

¹⁰² The prints are as follows: in Volume I, Plates 9, 28, 81, and 83; in Volume II, Plates 8, 9, 12, 23, 29, 31, 32, 36, and 52; in Volume III, Plate 85.

Louvre images, and how he turned the process to the articulation of this vision through the retouching, editing, and cropping of his prints, will be explored in the next chapter.

Chapter 4: Baldus's editing process

Photogravure is by nature a hybrid process: part photography, part printmaking, it borrows aspects of each tradition to produce prints that satisfy a unique set of goals. By comparing photographs and photogravures that issue from the same Baldus negative, we can ascertain what Baldus wanted to achieve with *Palais* visually, and how photogravure enabled visual effects that photography did not. 30 photogravures in the *Palais* volumes correspond to photographs held in folios, numbered one through six and titled *Fragments du Louvre*, in the Hill Collection:¹⁰³ 19 from Volume I, nine from Volume II, and three from Volume III, and they stem from photographs in Folios 2, 5, and 7. Analysis of these image pairs reveals how Baldus retouched, cropped, sequenced, and selected his Louvre photographs in recreating them for *Palais*, and how the photogravure process made their ideal presentation in these volumes possible.

The photographic folios: *Fragments du Louvre*

It is difficult to know how many photographic images Baldus ultimately produced as part of his commission from the Minister of State to document the construction of the New Louvre.¹⁰⁴ The Hill Collection contains 628 photographs: 538 salt prints in the six *Fragments* folios, and 90 loose albumen prints.¹⁰⁵ On the spine of each folio is a label handwritten in French, indicating first its title, *Fragments du Louvre*, and its number in

¹⁰³ In an email from Robert Hill (22 August 2013) to the author, Hill states that who assembled these folios and when remains undetermined. According to the provenance report compiled by Hill and the Dutch dealer H.J. Hendriks, the folios were sold to a Belgian artist and decorator named Emile Ouetlet in 1881. Ouetlet's collection was subsequently put up for sale in 1904 by Louis de Meuleneere, a Belgian book dealer; the folios were among the unsold items that de Meuleneere retained in his stock. They remained in the shop until it closed in 2010, at which time they were put up for auction. Hendriks acquired the folios in the sale and sold them to Hill two years later, in 2012.

¹⁰⁴ See footnote 15.

¹⁰⁵ I have numbered these prints by Folio, Element, and Plate number in accordance with Hill's system.

Roman numerals. This is followed by the number of *planches*, or sheets, the folio contains and a list of the subjects of the photographs mounted to the sheets. The labels were probably created and affixed at the time of the folios' assembly, in 1860 or soon after.¹⁰⁶ Folio 1 is labelled as containing 66 sheets with photographs of borders with flat mouldings, *rondes ornées*, and cymatium; Folio 2 contains 71 sheets with friezes, panels, door and window frames, columns, and more borders with flat mouldings; Folio 3 contains 107 sheets with moulds, profiles, cornices, consoles, crowns, capitals, imposts, escutcheons, and *ornaments en zinc*; Folio 4 contains 97 sheets with *détails de la façade*; Folio 5 contains 104 sheets with caryatids, capitals, and pediments; and Folio 6 contains 80 sheets with groups and façades.¹⁰⁷ The remaining Louvre photographs in the Hill Collection do not pertain to a folio, but Hill has catalogued them as Folio 7 for ease of use. Their subjects include decorative surrounds, brackets, and ceiling medallions.

The folio labels are not always accurate and can be misleading: for example, Folio 6 is comprised entirely of views of single *putti* except for five prints that should pertain to Folio 5, and Folio 4 contains many of the same types of elements noted as existing elsewhere, including column capitals, panels, pediments, and mouldings. There are also 15 fewer sheets in the Hill Collection than is stated on the labels. Nonetheless, they serve to provide a general understanding of the comprehensiveness of Baldus's commission and how these photographs were used immediately following their production: as records of the work undertaken for the construction project. Each of the elements Baldus photographed, whether the sculptor's finished work or the plaster model that preceded it,

¹⁰⁶ I propose this date as the photographs are mounted on remainder materials from Louis de Clercq's *Voyage en Orient : recueil photographique exécuté par Louis de Clercq, 1858–1859*, published in 1860. Titles recognizable from that publication, such as "Jerusalem / Massif de la Tour Antonia," are printed on the versos of many of the cardboard mounts.

¹⁰⁷ All English terms are the author's translation.

was destined for the new building.¹⁰⁸ Each is marked with an identifying number and, in some cases, its intended location, such as “Escalier de la bibliothèque,” written on element 1219. A date also appears in some instances, as does one or more signatures, presumably the sculptors’.

As part of his commission Baldus also photographed façades, both under construction and completed. Amongst Hill’s photographs are two doors *in situ*, which are reproduced in photogravure as Plates 44 and 47 in Volume II of *Palais*. Eight more photogravures in that volume show façades from various distances and angles, with the latter seven, found between plates 92 and 100, providing context for many of the displaced elements that came before. In these images, we can see how and where the caryatids, friezes, and other objects pictured previously were eventually used on the new building. None of the façade photographs exist in Hill’s collection; by the collector’s supposition, they were stripped out of the folios prior to sale, owing to their individual value.¹⁰⁹

Deterioration

Looking at the 30 image pairs in the Hill Collection side-by-side immediately clarifies why the discovery of a workable process for reproducing photographs in ink was considered so crucial by photographers and publishers in the mid-nineteenth-century. Comparing Plate 33 of Volume I—showing an example of interior decoration pertaining to the staircase of the Louvre library, although reversed—to the matching Plate 39 of Folio 7 [figs. 8–9], we see that the photogravure displays none of the yellowing and

¹⁰⁸ Daniel, “Stone by Stone,” 116.

¹⁰⁹ Robert Hill, email to author, 20 May 2013.



Fig. 8. Folio 7, Plate 39. Albumen print.

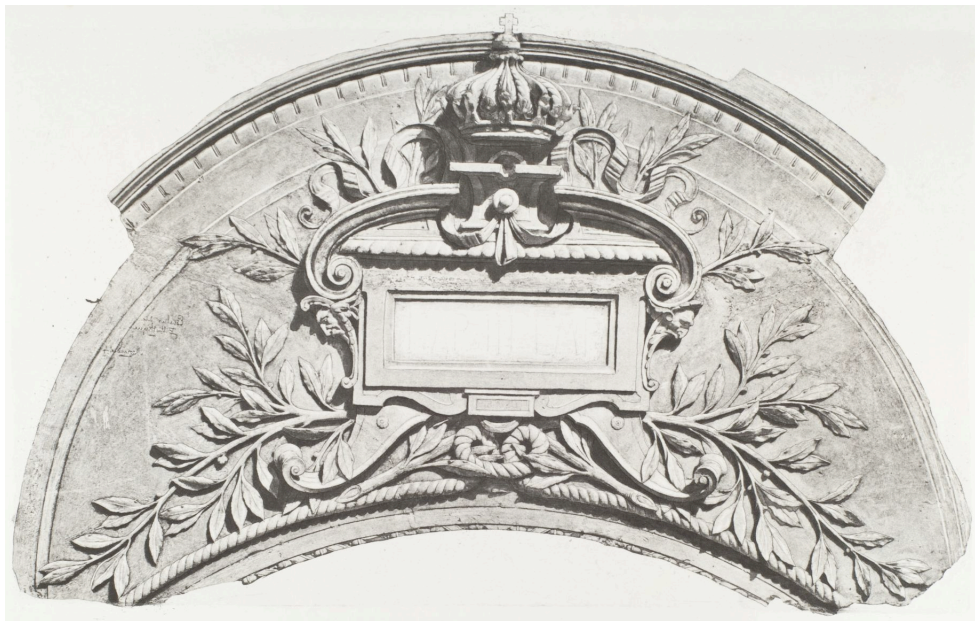


Fig. 9. *Palais du Louvre et des Tuileries*, Vol. I, Plate 33. Photogravure.

overall fading that is visible in the photograph, particularly in the highlights. This example typifies the differences observed through similar analyses: where the photographs have faded, lost highlight detail, and yellowed, the physical state of the photogravures is sound. Where the silver-based prints appear cloudy the ink prints are sharp, the shadow areas are dense, and the highlights are bright. Overall, the appearance of the latter is likely comparable to the original quality at the time of production, over 140 years ago.¹¹⁰ The paper on which the images were printed has deteriorated far more markedly than the images themselves, with several sheets showing evidence of foxing ranging from very mild to severe. This degree of preservation in the photogravures in itself clarifies the purposes of the Duc de Luynes contest, and the excitement it generated.

Even taking the photographs' earlier production date into consideration, this comparison evidences both the superior permanence of ink and the inherent instability of silver-based images, especially given that the photographs, which, according to the reconstruction of the provenance, languished for over 100 years in a Belgian book shop, would rarely have been removed from the folios and therefore were subject to relatively low levels of UV light, airborne pollutants, and mechanical damage. By contrast, the known successive owners of Hill's *Palais* volumes—Wallot and Wils—would presumably have paged through them at intervals, thereby exposing them to slightly higher levels of these corrosive agents as well as damage by handling. The respective condition of these two incarnations of Baldus's Louvre images is the most immediately discernible difference between them.

¹¹⁰ Different volumes evidence different levels of deterioration. The Volume III held by the CCA displays serious foxing on many pages, and the ink has become displaced in places, with a fine layer of powder over areas on some prints. One of the pages is also slightly torn.



Fig. 10. Folio 5, Element 325. Salted paper print.



Fig. 11. Folio 5, Element 378. Salted paper print.

Further, Elements 325 and 378 of Folio 5 [figs. 10–11] exemplify the wide variation in tones visible in the photographs, including those created by the same photographic process. While the photogravures are reliably black, the overall colouration of the photographs ranges from cool, purplish grey to warm reddish brown. This could be due to chemical deterioration, but also to the numerous variables that attended the printing of photographs prior to the commercial production of photographic chemicals and paper, which essentially standardized them, or developing-out paper.¹¹¹ Present-day curators and scholars have noted the plethora of colours visible in the salted paper prints and photogenic drawings of Baldus, Talbot, and other nineteenth-century photographers as contributing to the photographs' beauty.¹¹² However, *Palais* and Baldus's later

¹¹¹ Both salted paper and albumen photographs are typically printed-out, meaning that the image is formed solely by the action of UV light on the silver-halide emulsions embedded within (as with salted paper prints) or suspended on top of (as with albumen prints) the paper, and that the image is fully visible prior to fixing, toning, and washing. With the wide popularization of developing-out paper at the end of the nineteenth-century, which used chemical developers to bring out the latent image, print quality and appearance was no longer affected by the strength or quality of sunlight on a given day.

¹¹² This widely held sentiment has been eloquently expressed by Malcolm Daniel in his monograph: "We pause at the surface of the picture before moving from our own world into the photographer's and revel, as did Baldus's contemporaries, in the seductive *matière* of the still-handcrafted medium—the rich, velvety salted-paper prints in colors of gray violet, eggplant, cool black, and ruddy brown..."

photogravure publications indicate that he valued his images equally, if not more, as uniform black-and-white pictures. With the predictable colouration it generated, and the knowledge that ink prints would not fade as photographs did, the photogravure process must have been irresistible to a practitioner with Baldus's concern for aesthetics and professionalism.

Selection, sequencing, and arrangement

A comparison of the prints in *Palais du Louvre et des Tuileries* with the Hill Collection photographs and the *Réunion des Tuileries* albums held in the Musée d'Orsay reveals that the 300 images Baldus chose to reproduce in *Palais* generally represent a cross section of the subjects he photographed at the Louvre. That said, Baldus eschewed the statues of historical figures which decorated the northern, eastern, and southern façades overlooking the *cour Napoléon* and the Richelieu wing entirely. He also chose not to print the shaded, atmospheric "La colonnade intérieure, palais du Louvre, Paris," with its long view of a soaring interior gallery, nor many of the façade views that appear across the four albums. These choices reinforce the hypothesis that Baldus's project with his photogravure publication was the reproduction of decorative details for study by architects and artists.

Plates 26 to 36 in Volume III show, in order: a statue from the Tuileries gardens; a planter; another statue from the Tuileries gardens; two horizontal panels; two vertical

Daniel, *Photographs*, 97. The photographer and writer Alan Greene has described the tonal variation that is visible in developed-out salted paper prints as well, proposing that a quick exposure time combined with lengthy development, and a long exposure time combined with rapid development, produced two different print tones: cool blue-black with the former, and warm red-brown with the latter. See Alan Greene, "Les épreuves salées par développement (1843–1866)," trans. Virginie Greene, *Études photographiques* 14 (January 2004), 130–143.

panels; an oval-shaped panel; another planter; an oval-shaped panel; two horizontal panels; and a third planter. The three variously designed planters in this sample set suggest that one of his interests was thematic variation. To cite another example of this principle, in Volume I Baldus includes 12 column capitals carved with the heads of beasts—horses, rams, bears, wolves, owls, etc. His treatment of these with regard to retouching and cropping, discussed at length in the next section, is the same in each case, and their overall presentation is identical. By thus standardizing the context in which the capitals appear, Baldus renders the variations in their design details all the more apparent, again suggesting that the description of such details was among his primary concerns with this project. The sequencing of the photographs in *Réunion des Tuileries au Louvre*—which Baldus was not responsible for, though he may have contributed opinions—followed the completed architecture of the two palaces, with the photographs grouped according to the location of their subjects.¹¹³ The ordering principle of *Palais* is more discreet, as is evident in the randomly selected sequence of 10 plates described above; the order of these images seems arbitrary from a present-day perspective. But Baldus intended *Palais* primarily for architects and decorative artists as well as students in these fields, and in creating its prints he took great care to ensure that the details represented were distinct and that viewers would recognize the objects pictured as fragments of architectural design, not pieces of a construction project (discussed at length in the next section). Baldus would therefore have arranged the prints according to the formal attributes of their subjects; that is, so that the pattern of one object complemented, in his view, that of the next.

¹¹³ The catalogue of the Musée d'Orsay lists them as follows: *album 1 : décor de la façade Nord, sur la cour Napoléon ; album 2 : décor des façades Est et Sud sur la cour Napoléon; album 3 : décor des deux cours Sud, dites aujourd'hui Lefuel et Visconti; album 4 : décor de l'aile Richelieu.*

In *Palais*, Baldus places his images in different arrangements than those in which they appeared in the folios. Plate 80 of Folio 7 [fig. 12] includes two albumen prints of ceiling medallions: the print placed at the top features the heads of four cherubs around a decorative central disk, while the one below shows a cruciform design. Both photographs are reproduced in *Palais*, but paired with objects of greater similarity: the former appears with another ceiling medallion decorated with curly-headed cherubs [fig. 13], and the latter appears with a ceiling medallion featuring a similarly non-figurative symmetrical pattern [fig. 14]. This example is one of three comparable instances of rearrangement seen in the Hill Collection material, and it provides further evidence that Baldus's sequencing was deliberate and that, like his choices regarding the selection and arrangement of his images, it was intended to highlight the objects' formal attributes as much as possible.

Retouching and cropping

In rendering his subjects in photogravure, Baldus altered their appearance beyond the necessary parameters, i.e. more than would have resulted naturally from changing a photographic print into a photomechanical one. Perhaps the most drastic of these alterations is his staging of the fragments as though they existed apart from the New Louvre, or indeed apart from anything. The photograph Plate 53, Folio 7 [fig. 15], shows the surround of a door on the ground in front of a building: construction debris is strewn at its base; a window and pilaster are visible behind it; it is propped up by stacks of bricks. In the corresponding photogravure—Plate 30, Volume I of *Palais* [fig. 16]—all of these details and contextual clues in the fore and background have been stripped away



Fig. 12. Folio 7, Plate 80, Elements 1200 (top print) and 1191 (bottom print). Salted paper prints.



Fig. 13. *Palais du Louvre et des Tuileries*, Vol. I, Plate 58. Photogravure.



Fig. 14. *Palais du Louvre et des Tuileries*, Vol. I, Plate 60. Photogravure.



Fig. 15. Folio 7, Plate 53. Albumen print.

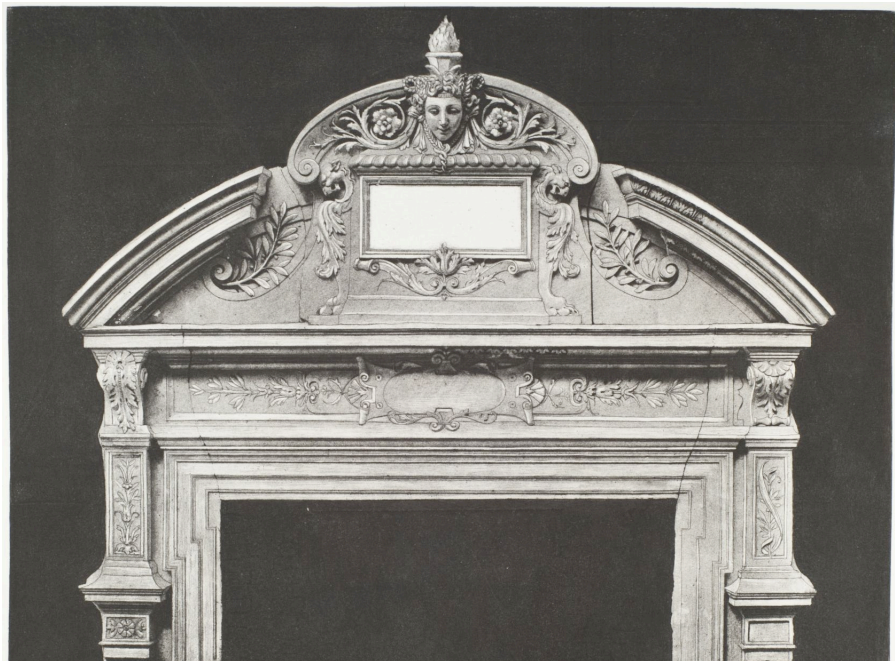


Fig. 16. *Palais du Louvre et des Tuileries*. Vol. I, Plate 30. Photogravure.

and replaced by swaths of solid black. The isolated object hovers against an empty background. Divested of its context, it now constitutes a subject without referent.

It appears that this de-contextualization is the effect Baldus sought. He eliminated all background information in 96 percent of his *Palais* prints,¹¹⁴ isolating the decorative motifs pictured in such a way that there is nothing—none of the drapes, scaffolding, debris, or supports pictured with them in the photographs—to distract from them. Examination of Plate 49, Folio 7 shows how, where the process (in this case, albumen printing) did not allow such remarkable alterations to the original scene during print production, the photographer—or one of his assistants—attempted to alter the finished print through crude manual techniques.¹¹⁵ Here, the space inside the fireplace surround has been blacked out with a pigment applied to the surface of the photograph. This photograph was not reproduced in *Palais*, but in a similar image, Plate 87 of Volume I, the interior area of the enframement is rendered as a clean black rectangle. Baldus's other techniques for isolating his photographic images included trimming them as closely to the edges of the object pictured as possible [fig. 17] and cutting photographs which showed two elements into two pieces, again eliminating the “unnecessary” space around or between the objects, and then gluing the manually cropped photographs to the mount board side-by-side [fig. 18].

Barry Bergdoll has written of the effect of these isolation techniques on the viewer of *Palais*: “All sense of context, of the larger architectural project, has disappeared.” While this is certainly accurate, his subsequent statement that “to the

¹¹⁴ This calculation was based on a total of 288 images, excluding those 12 where isolation would not have been possible, such as with the façades.

¹¹⁵ Baldus worked with assistants to produce the thousands of photographs destined for the New Louvre project files and the presentation albums *Réunion des Tuileries au Louvre*. It is therefore



Fig. 17. Folio 5, Element 423. Salted paper print.

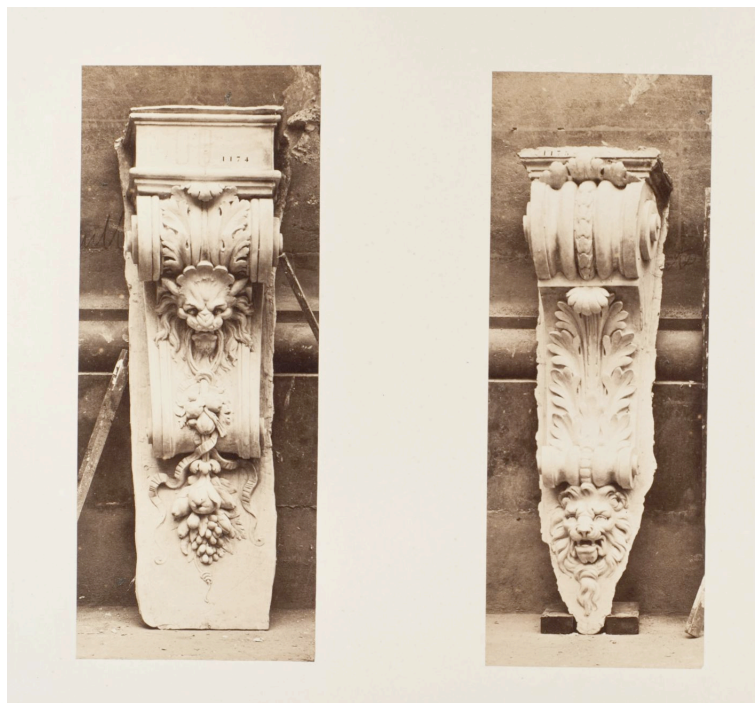


Fig. 18. Folio 7, Plate 54. Albumen prints.

modern scholar these volumes [of *Palais du Louvre et des Tuileries*] defy all logic”¹¹⁶ is true only in the sense that they do not present the palaces pavilion by pavilion, as *Réunion* does. With *Palais* Baldus was acting on a different intention, which becomes apparent if we consider the photogravures in context with the corresponding photographs: to show the formal and textural qualities of each object as directly as possible, and to highlight their shapes as they existed apart from the building. This would have increased the appeal and usefulness of these images to his primary audience.¹¹⁷

Returning to the image of the door surround described above, the date carved into the pediment, “1858”, is not visible in the corresponding photogravure (compare figures 15 and 16). The only other photograph on which a date appears in this set of 30 is a ceiling medallion carved with cherubs [fig. 19]; here, too, the date has been removed from its photogravure match [fig. 20]. Further, in the two instances where the element’s intended location is inscribed on its surface, those marks have been removed; in the seven instances where the sculptor’s name is visible in the photograph, it has been removed in the photogravure; and in every case but one, the element number, stenciled onto every object, presumably as a tracking method devised by the project managers, is either masked or invisible in the photogravure.¹¹⁸ Therefore, in *Palais* an object is typically

impossible to state unequivocally, pending further research, that it was he who made the manual alterations to the photographs discussed in this thesis, though presumably his assistants would have been following his direction, rather than making their own decisions.

¹¹⁶ Bergdoll, “Architects,” 118.

¹¹⁷ This audience was previously hypothesized by Bergdoll; see page 12 of this thesis.

¹¹⁸ Details with regard to this kind of retouching, as illustrated by the image pairs found in the Hill Collection, are as follows: Volume I, Plate 27: element number, location, and sculptor removed; Volume I, Plate 33: element number, location, and sculptor removed; Volume I, Plate 41: element number and sculptor removed; Volume I, Plate 45: element number and sculptor removed; Volume II, Plate 58: element number, sculptor, and date removed; Volume I, Plate 54: element number removed, sculptor not removed; Volume II, Plate 50: element numbers removed, sculptor not removed; Volume II, Plate 75: element number not removed.



Fig. 19. Folio 5, Element 526. Salted paper print.



Fig. 20. *Palais du Louvre et des Tuileries*, Vol. II, Plate 58. Photogravure.



Fig. 21. Left: Folio 5, Element 603B. Salted paper print. Right: *Palais du Louvre et des Tuileries*, Vol. II, Plate 86. Photogravure.



Fig. 22. Left: Folio 7, Plate 50. Albumen prints. Right: *Palais du Louvre et des Tuileries*, Vol. I, Plate 27. Photogravure.

divorced both from its physical environment and the circumstances of its creation: who made it, when, and for what purpose.

The fact that Baldus left traces of information on some prints that he rendered invisible elsewhere suggests that his process, or skill, did not necessarily allow for the facile elimination of numbers, dates, and names. Owing to the general condition and quality of these pictures and the many photographs for which he is now famous, I believe that Baldus was careful in the execution of his photogravure plates and prints, but that his efforts were nonetheless more successful in some cases than in others [figs. 21–22]. But this also suggests that Baldus was more concerned with hiding non-pictorial data than with its seamless removal. Using photogravure, he could make the viewer unaware of the object's original context, thus allowing him or her to view it solely as an object of design, a work of aesthetic value for study, emulation, or contemplation, rather than a fragment of the New Louvre in mid-construction.

By recreating his images in photogravure, Baldus was further able to remove surface cracks from objects, often excising these imperfections completely. In Element 405, Folio 5 [fig. 23]—a column capital decorated with the heads of war horses, a shield, and weaponry—a sizeable fissure runs from the top of the capital on the right hand side through the carved horse head below, and there is a more superficial crack extending upward from the bottom right of the element to the base of the central shield. Neither is evident in the corresponding *Palais* print, Plate 15, Volume I [fig. 24]. Baldus effected this change in four other photogravures in the set of 30;¹¹⁹ in several others, he left the cracks as they were, such as with the image of the fireplace surround discussed above. But unlike in the case of identifying numbers, there are no noticeable instances of

¹¹⁹ These plates are as follows: Volume I, Plate 13, 26, 41, and 45.

partially or crudely removed cracks in any of the volumes. I therefore believe that, like laterally reversed motifs, Baldus did not consider them damaging to his project of presenting the elements as architectural fragments divorced from the New Louvre construction.

It was important to Baldus that every sculpted detail of these ornate objects be well represented. Where clarity was lacking, he used engraving tools to draw lines into the plate; often, this was done to emphasize the outline of a particular design feature in the object, or the shape of the object as a whole. The goal was the articulation of form, and Baldus often pursued it to the point of eliminating any trace of photographic realism; indeed, many *Palais* prints exhibit the visual syntax of charcoal drawings [fig. 25].

Measurements taken of 29 of the 30 photographs and photogravures show the elements pictured to be the same size.¹²⁰ However, Baldus did crop them differently, adding more space around them in some cases and tightening the framing in others. The column capital decorated with warhorses and weaponry and its photographic match [figs. 23–24] can illustrate this as well: the cropping is tighter at the sides of the element in the photogravure than in the photograph, and more expansive at the top and bottom. With the fragment of decoration from the Louvre library staircase [figs. 8–9], the cropping is slightly tighter on all sides than it is in the corresponding photograph. A comparison of Plate 44, Volume II with Plate 89, Folio 7 [figs. 26–27], which show a richly ornamented door in the façade of the Louvre, comprises a rare example of a *Palais* photogravure depicting more than its corresponding photograph: here, the photograph has been manually trimmed along the edges of the door, while the photogravure includes the wall

¹²⁰ The image shown in Plate 15, Volume I measures *smaller* than its photographic match, Element 405, Folio 5.

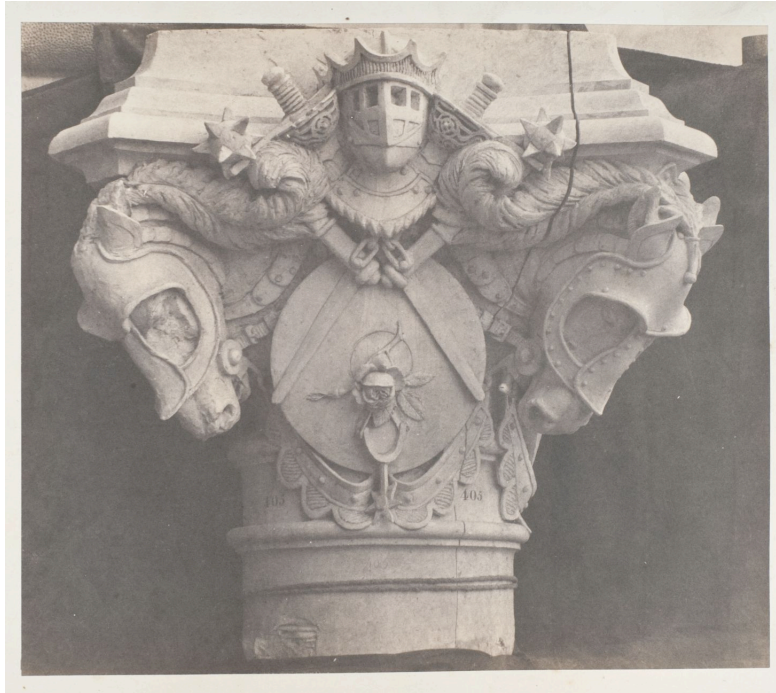


Fig. 23. Folio 5, Element 405. Salted paper print.



Fig. 24. *Palais du Louvre et des Tuileries*, Volume I, Plate 15. Photogravure.



Fig. 25. *Palais du Louvre et des Tuileries*, Volume I, Plate 26. Photogravure.



Fig. 26. Folio 7, Plate 89. Albumen print.

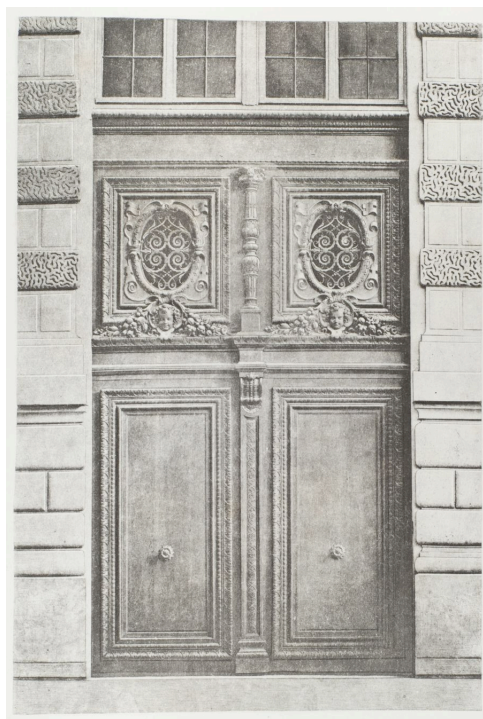


Fig. 27. *Palais du Louvre et des Tuileries*, Vol. II, Plate 44. Photogravure.

around it.¹²¹ This may indicate that while the surrounding wall was not relevant to Baldus's New Louvre commission, he found its forms and placement in the image visually appealing; in this case, the element that Baldus is concerned with representing is better appreciated in context. Comprehended as a door, a mundane feature of every inhabitable structure, its flourishes appear even more remarkable.

For Baldus, photogravure promised both increased longevity for his Louvre pictures and greater control over their appearance and content. As demonstrated by the widespread removal of contextual information that he effected with these prints, the

¹²¹ The example held by the Musée d'Orsay, *Porte du pavillon de la Bibliothèque, palais du Louvre, Paris*, is also cropped far more closely than the *Palais* photogravure, though some wall space is evident around the door in this print.

process allowed him to present building fragments, photographed on a construction site, as artistic works with individual value. And through the deliberate choices he made with regard to the selection, sequencing, arrangement, retouching, and cropping of his images, he emphasized the formal qualities and intricacies of the palaces' decorative elements. In so doing, Baldus presented his images such as he felt they would be best appreciated by his audience: both as studies for artists, architects, and designers and as dramatic representations of Second Empire design.

Conclusion

Palais du Louvre et des Tuileries arose from deliberate, reasoned choices made by Édouard Baldus in the interest of creating images of economic, pedagogic, and aesthetic value from his Louvre photographs. Why did he choose the photogravure process for this project? Beginning in the 1850s, identifying a process that would allow for the production and wide dissemination of stable photographic images was a pressing concern for both photographers and publishers.¹²² Photogravure and its potentialities were part of what photography *was*, and photomechanical printing represented in the collective imagination the medium at its most refined point. By experimenting with and working in photogravure, Baldus was engaging with photography as it was in his time. Furthermore, he was ensuring that his work would remain of interest to his peers beyond his government commissions, and guaranteeing its relevance to larger, contemporary discussions on the advancement of photography.

Once Baldus had developed a workable photogravure process, it presented itself as the best means of turning his vast store of New Louvre photographs to the new and advantageous use he had imagined for them with *Palais*, and the only way to produce the images he envisioned for their reincarnation in these volumes. What did these hypothetical prints look like? Baldus conceived of *Palais* as a book of reproductions of artistic design, a genre he knew well from the early 1850s when he photographed paintings and sculpture by Corot, Delacroix, Michaelangelo, and others.¹²³ The three photogravure publications that preceded *Palais* were also dedicated to the reproduction of fine and applied artworks: *Receuil d'ornements* (1866), *Œuvre de Marc-Antoine*

¹²² Barry Bergdoll has stressed the importance of photomechanical processes to the development and dissemination of photographic images during Baldus's time. See Bergdoll, "Architects," 116–118.

¹²³ Daniel, *Photographs*, 35–36.

Raimondi (1867), and *Œuvre de Jacques Androuet dit Du Cerceau* (ca. 1869). But Baldus faced a difficulty with *Palais*: at the time Baldus documented the decorative elements of the Louvre, they had been situated in such a way that made it difficult to regard them as objects that embodied an ideal artistic style, despite their Classical forms and sumptuous decoration. They were propped up on scaffolds, surrounded by debris, stamped with identification numbers, and inscribed with indications of their eventual location. To be presented as pieces of art, representative of the highest goals of architectural design, they had to be divorced from the building project for which they were intended, and photogravure allowed for this de-contextualization in a far more dramatic way than purely photographic processes. Furthermore, photogravure promised increased longevity and circulation for the prints, and made it possible for Baldus to retouch and arrange them so as to highlight their formal details. Thus, in their new form, Baldus's Louvre commission photographs became useful models for architects, designers, artists, and students in these fields. He had identified his market and, using photogravure, created a product to suit it.

How is *Palais* to be understood in relation to Baldus's larger output? It is characteristic of his work; it demonstrates his technical aptitudes and his interest in technical and compositional experimentation; and it reinforces his predilection for a dramatic picture, as well as his ambition and professionalism. For these reasons, this body of work should be considered as significant as the silver-based Louvre prints. Yet it has not been acknowledged as such, and this thesis represents the first time that *Palais*, or indeed any of the photographer's photogravure publications, has been examined in depth

or fully integrated within the contexts of Baldus's career and the development and practice of photography in nineteenth-century France.

I believe that the lack of attention *Palais* has previously received, and its common designation as a “commercial” enterprise, attests to the ongoing marginalization of photomechanical processes in histories of photography. In addressing the photographic medium, scholars and curators have traditionally followed the critical model of modernism, and *Palais* is at odds with crucial modernist contentions: its prints issue from a hybrid process, and thus are not examples of “pure” photography; the multiplicity of the prints draws attention to reproducibility as a primary characteristic of photography, thereby confounding the notion of the print as a singular and authored object; and finally, the pictures in *Palais* often possess the syntax of other representational forms, such as drawings or engravings. In these respects alone, this body of work is valueless to photography as articulated, directly or indirectly, by such influential figures as Sadakichi Hartmann, Frederick Evans, Edward Weston, Clement Greenberg, John Szarkowski, and Michael Fried, all proponents of “straight” photography.¹²⁴

In order to understand what photography was, and what it promised, to mid-nineteenth-century practitioners, we must embrace hybrid images as a crucial part of the story. Scholars such as Geoffrey Batchen, Elizabeth Edwards, and André Gunthert have pioneered an approach to the historiography of the medium that explores its connections to the broader history of image making and dissemination, and the journals *Études*

¹²⁴ See Frederick Evans, “Frederick Evans on Pure Photography,” *The Photographic Journal* 59 (April 20, 1900): 236–41; Michael Fried, “Art and Objecthood,” *Artforum* 5 (June 1967): 12–23; Clement Greenberg, “Modernist Painting,” *Art and Literature* 4 (Spring 1965): 193–201; Sadakichi Hartmann, “A Plea for Straight Photography,” *American Amateur Photographer* 16 (March 1904): 101–109; John Szarkowski, *The Photographer's Eye* (New York: The Museum of Modern Art, 1966); and Edward Weston, “Seeing Photographically,” *The Complete Photographer* 9 (1943): 3200–3206.

photographiques and *Photographies* in particular have expanded the field to include studies of press and vernacular photography and photographic archives, which were largely overlooked prior to the institutional acceptance of photography in the 1990s.¹²⁵ Furthermore these publications, along with Edwards' seminal *Photographs Objects Histories* (2004), have established and propagated a school of thought that emphasizes the objectness of photographs and the importance of a methodology that addresses their materiality in tandem with their subjects. Yet despite this activity, we are still only beginning to move beyond silver-based photographs as the only valuable subjects of study and collection, as evidenced by the continued neglect of Baldus's photogravure publications in academic and curatorial evaluations of the photographer and French photography during the nineteenth-century.

I have aimed in the preceding pages to contribute to the new, more inclusive approach to photographic scholarship by identifying *Palais du Louvre et des Tuileries* as a key project in Baldus's career, and by positing a critical analysis of Baldus's work in photogravure as crucial to our understanding of the photographer and the historical period he inhabited. Additionally, in providing detailed information about the conception, production, and distribution of *Palais du Louvre et des Tuileries*, I hope I have

¹²⁵ In his introduction to the first issue of *Études photographiques*, André Gunthert wrote of photography as positioned "at the crossroads of numerous disciplines," and summarized the new journal's mandate: "To publish work issuing from all areas that can illuminate the field of photography: the history of art, science, techniques, and representation, but also conservation, sociology, aesthetics, our semiotics." ("Éditorial," *Études photographiques* 1 (November 1996): 5.) 11 years later, *Photographies* launched with the express aim of fostering "a forum for thinking about photography within a trans/disciplinary context, open to different methods, models, disciplines and tactics" and addressing "the sites of production, consumption and the multifarious industries of distribution and dissemination that make photographic images so central in much of our culture." ("Editorial Statement," *Photographies* 1.1 (February 2008), 1.) Among the articles published in the journal's next issue was Geoffrey Batchen's "Snapshots," which demonstrated the unsuitability of the art historical model in the analysis of photographs and proposed an alternative methodology. See Geoffrey Batchen, "Snapshots," *Photographies* 1.2 (November 2008): 121–142.

represented this publication as demanding further study by scholars interested in the early history of the conception, production, and dissemination of photographic images.

Appendix I

This provides a listing of public institutions holding complete or partial sets of *Palais du Louvre et des Tuileries*. It has not been possible at this time to determine the publication details of these sets.

Europe

Austria

MAK Bibliothek – Vienna

Denmark

Danmarks Kunstbibliotek
Designmuseum Danmark

France

Bibliothèque des arts décoratifs – Paris
Bibliothèque centrale des musées nationaux
Bibliothèque nationale de France
École nationale supérieure des beaux-arts de Paris
Université Lille III – Charles-de-Gaulle

Germany

Bayerische Staatsbibliothek
Hochschulbibliothek Regensburg
Kunstbibliothek – Staatliche Museen zu Berlin
Staatsbibliothek zu Berlin – Preussischer Kulturbesitz
Technische Informationsbibliothek & Universitätsbibliothek Hannover
Universitätsbibliothek TU München
Zentralinstitut für Kunstgeschichte – Munich

Italy

L'École française de Rome
Kunsthistorisches Institut – Florence

The Netherlands

Centrale Bibliotheek
Koninklijke Bibliotheek
Rijksmuseum Research Library
Technische Universiteit Delft
Universiteit van Amsterdam

Spain

La Biblioteca Nacional de España

Switzerland

ETH-Bibliothek Zurich
Stiftung Bibliothek Werner Oechslin

United Kingdom

The British Library
The National Art Library
Royal Institute of British Architects

North America

Canada

The Canadian Centre for Architecture
Concordia University
The National Gallery of Canada
Queen's University
The University of Calgary
The University of Manitoba

The United States

Arkansas State University – Jonesboro
The Art Institute of Chicago
Ball State University
Bowdoin College
Brigham Young University
The Brooklyn Museum
The Brooklyn Public Library
Brown University
The Buffalo and Erie County Public Library

The Clark Institute
The Cleveland Public Library
Columbia University
Cornell University
The Cranbrook Academy of Art
Fordham University
The Free Library of Philadelphia
The George Eastman House Museum of Photography and Film
The Harry Ransom Humanities Research Centre
Harvard University
The Huntington Library, Art Collections & Botanical Gardens
Johns Hopkins University
Lawrence Technological University
The Library of Congress
The Metropolitan Museum of Art
The National Gallery of Art
The New York Public Library
Northwestern University
The Ohio State University
The Smithsonian Institution Library
Southern University
Stanford University
SUNY – Buffalo
The University of Illinois – Urbana Champaign
The University of Massachusetts – Amherst
The University of Minnesota – Minneapolis
The University of Oklahoma
Washington University – St. Louis
Vanderbilt University
Yale University

Israel

The National Library of Israel

Australia

Macquarie University

Bibliography

- AIA Brooklyn. "Past Presidents." Accessed 16 July 2013.
www.aiabrooklyn.org/officers/past-presidents/.
- Aubenas, Sylvie. "Alphonse Poitevin (1819–1882) : photographe et inventeur : la naissance des procédés de reproduction photographique et de la photographie inalterable." PhD diss., École nationale de chartes, 1998.
- . "The Photograph in Print." In *A New History of Photography*, edited by Michel Frizot. Translated by Susan Bennet, Liz Clegg, John Crook, and Caroline Higgitt, 224–231. Köln: Könemann, 1998.
- , ed. *Des photographes pour l'empereur : les albums de Napoléon III*. Paris: Galerie de photographie, Bibliothèque nationale de France, 2004.
- and Michel Poivert. *D'encre et de charbon : le concours photographique du Duc de Luynes 1856–1867*. Paris: Bibliothèque nationale de France, 1994.
- and Paul-Louis Roubert, eds. *Primitifs de la photographie : le calotype en France 1843–1860*. Paris: Editions Gallimard, 2010.
- Benson, Richard. *The Printed Picture*. New York: The Museum of Modern Art, 2008.
- Bibliographie de la France*. Paris: Cercle de la librairie, 1871, 1888, 1896, 1900.
- Boyer, Christine. "La Mission Héliographique: Architectural Photography, Collective Memory and the Patrimony of France, 1851." In *Picturing Place: Photography and the Geographical Imagination*, edited by James Ryan and Joan Schwartz, 21–54. London: Taurus, 2003.
- Bresc-Bautier, Geneviève, Françoise Heilbrun, Emmanuel Jacquin, and Marie-France Lemoine-Molimard. *Le photographe et l'architecte : Édouard Baldus, Hector-Martin Lefuel et le chantier du Nouveau Louvre de Napoléon III*. Paris: Réunion des musées nationaux, 1995.
- Borcoman, James. *Charles Nègre, 1820–1880*. Ottawa: National Gallery of Canada, 1976.
- Crawford, William. *The Keepers of Light: A History and Working Guide to Early Photographic Processes*. Dobbs Ferry, New York: Morgan & Morgan Inc., 1979.
- Dahlberg, Laurie. *Victor Regnault and the Advance of Photography: The Art of Avoiding All Errors*. Princeton, NJ: Princeton University Press, 2005.
- Daniel, Malcolm. "Stone by Stone: Édouard-Denis Baldus and the Nouveau Louvre." *History of Photography* 16, no. 2 (Summer 1992): 115–123.
- . "The Beginnings of Photogravure in Nineteenth Century France." In *Graver la lumière : L'héliogravure d'Alfred Stieglitz à nos jours, ou la reconquête d'un instrument perdu*, edited by Malcolm Daniel and Florian Rodari. Vevey: Fondation William Cuendet & Atelier de Saint-Prex, 2001.

- . "The photographic railway albums of Edouard-Denis Baldus." PhD diss., Princeton University, 1991.
- and Barry Bergdoll, *The Photographs of Édouard Baldus*. New York: The Metropolitan Museum of Art, 1994.
- de la Blanchère, H. *Répertoire encyclopédique de photographie*. Paris: 1864.
- De Mondenard, Anne. *La Mission héliographique : Cinq photographes parcourent dans la France en 1851*. Paris: Monum, Ed. du Patrimoine, 2002.
- Denison, Herbert. *A treatise on photogravure in intaglio by the Talbot-Klic process*. London: Illife, n.d. ca. 1890.
- Evans, Frederick. "Frederick Evans on Pure Photography." *The Photographic Journal* 59 (April 20, 1900): 236–41.
- Figuier, Louis. *Les merveilles de la science*. Paris: Furne, Jouvet et Cie., 1869.
- Fried, Michael. "Art and Objecthood," *Artforum* 5 (June 1967): 12–23.
- Ganz, James. *Édouard Baldus at the Château de La Faloise*. Williamstown, Mass.: Sterling and Francine Clark Art Institute; New Haven, Mass.: Yale University Press, 2007.
- Gervais, Thierry. "La similigravure : le récit d'une invention (1878–1893)." *Nouvelles de l'Estampe* 229 (May 2010): 6–25.
- Goodman, Jon. "A Note on the Photogravure Process." Accessed 17 June 2013. <http://jgoodgravure.com/about.html>.
- Greenberg, Clement. "Modernist Painting." *Art and Literature* 4 (Spring 1965): 193–201.
- Greene, Alan. "Les épreuves salées par développement (1843–1866)." Translated by Virginie Greene. *Études photographiques* 14 (January 2004): 130–143.
- Hartmann, Sadakichi. "A Plea for Straight Photography." *American Amateur Photographer* 16 (March 1904): 101–109.
- Heilbrun, Françoise and Philippe Néagu. *Charles Nègre, photographe, 1820–1880*. Paris: Éditions des Musées nationaux, 1980.
- Herschman, Joel A. and Clark, William W. *Un voyage héliographique à faire: The mission of 1851: The first photographic survey of historical monuments in France*. Flushing, N.Y.: The College, 1981.
- Jammes, André, Musée de l'Elysée, Musée Nicéphore Niépce, and Kunsthaus Zürich. *De Niépce à Stieglitz : la photographie en taille-douce*. Lausanne: Musée de l'Elysée, 1982.

- Jammes, André and Parry Janis, Eugenia. *The Art of French Calotype: With a Critical Dictionary of Photographers, 1845–1870*. Princeton, N.J.: Princeton University Press, 1983).
- Korom, Joseph J. *Skyscraper Façades of the Gilded Age: Fifty-One Extravagant Designs, 1875–1910*. Jefferson, N.C.: McFarland and Company, 2013.
- Lacan, Ernest. “Gravure héliographique.” *Le Moniteur de la Photographie* (1867): 45.
- . “Revue photographique.” *La Lumière* (1 July 1854): 103.
- Lewis, Jacob Warren. “Charles Nègre in Pursuit of the Photographic.” PhD diss., Northwestern University, 2012.
- Néagu, Philippe. *La Mission heliographique : photographies de 1851*. Paris: Direction des musées de France, 1980.
- Nibelle, P. “Gravure héliographique.” *La Lumière* (29 April 1854): 66–67.
- Rosen, Jeff. “Lemercier et Compagnie: Photolithography and the Industrialization of Print Production in France, 1837–1859.” PhD diss., Northwestern University, 1988.
- . “The Printed Photograph and the Logic of Progress in Nineteenth Century France.” *Art Journal* 46.4 (1987): 305–311.
- Sacilotto, Deli. *Photographic Printmaking Techniques*. New York: Watson-Guitt Publications, 1982.
- Sutnik, Maia-Mari. *Édouard-Denis Baldus: Héliogravures: Selections from “Les principaux monuments de la France.”* Toronto: Art Gallery of Ontario, 1994.
- Szarkowski, John. *The Photographer's Eye*. New York: The Museum of Modern Art, 1966.
- Weston, Edward. “Seeing Photographically.” *The Complete Photographer* 9 (1943): 3200–3206.
- Yeates, Jennifer I. “Héliogravures: The Unpublished Photogravure Process of Édouard Baldus.” MA thesis, Ryerson University, 2010.