

# Retouching glass plate negatives. What do old manuals say?

Catarina Cortes Pereira, Laura Castro

CITAR, Escola das Artes, Universidade Católica Portuguesa, Porto, Portugal

## Abstract

This paper aims to present a study of old photographic retouching manuals which is part of a research project on the retouching of gelatin silver glass plate negatives from Portuguese photographic collections from the first half of the twentieth century. Several contemporary authors of various nationalities were studied. Differences in approach to retouching have been explored in terms of techniques and materials, particularly as the authors addressed issues such as ethics and the legitimacy of photo retouching, as well as the relationship of photography to the other arts.

## Keywords

Dry Plate Negative, Retouching, Photography, Manuals, 19<sup>th</sup> - 20<sup>th</sup> Centuries.

## O Retoque de Negativos de Vidro. O que Dizem os Antigos Manuais?

### Resumo

Este trabalho aborda o estudo de antigos manuais de retoque de fotografia no âmbito de um projecto de investigação sobre o uso do retoque em negativos de gelatina e prata sobre vidro, de coleções fotográficas Portuguesas da primeira metade do século XX. Estudaram-se vários autores contemporâneos e de diferentes nacionalidades. Procuraram-se diferenças na abordagem do retoque em termos das técnicas e materiais, mas particularmente como os autores abordavam questões como a ética e validade do retoque em fotografia, assim como a relação da fotografia com as outras artes.

### Palavras-chave

Negativo de Vidro, Retoque, Fotografia, Manuais, Séculos XIX-XX.

## El Retoque de Negativos de Vidrio. Qué Dicen los Antiguos Manuales?

### Resumen

Este artículo enfoca el estudio de antiguos manuales de retoque fotografía en el ámbito del proyecto de investigación sobre el uso del retoque en negativos de gelatina y plata sobre vidrio de colecciones fotográficas portuguesas de la primera mitad del siglo XX. Se estudiaron distintos autores contemporáneos de diferentes nacionalidades. Se buscaron diferencias en las técnicas y materiales, pero también como los autores abordaron las cuestiones de la ética y la validez del retoque en la fotografía, así como la relación de la fotografía con otras artes.

### Palabras clave

Negativos en vidrio, Retoque, Fotografía, Manuales, Siglos XIX-XX.

## Introduction

This paper presents an introduction to the research project on retouching gelatin glass plate photographic negatives (the dry plate negatives process). What is presented here is the starting point, a review of some historical technical photography books from the late nineteenth century and first half of the twentieth century.

Apart from the historical literature, the least studied area in photography history and practice is the retouching of photographic negatives. There were only two known articles describing retouching techniques published in 2010 and a further two in 2011. These articles discuss the importance of retouching as a source of information for the history of photographic techniques and the visual culture of its time, without however exploring the topics further (Author, 2010; Cermanová, 2010; Herrera Garrido, 2011; Borýscová, 2011). In addition, Author and Herrera Garrido draw attention to the problem of the lack of knowledge on retouching materials when implementing conservation procedures (Author, 2010; Herrera Garrido, 2011).

In 2012 took place at the Metropolitan Museum of New York an exhibition entitled *Faking It*, which brought to the public's memory the history of retouching and other photographic manipulation techniques such as photomontage.

The exhibition and its catalogue (Fineman, 2012) addressed the still current controversy over the legitimacy and ethics of retouching, but focused on the final image, with less focus on the techniques involved. And it did not address the nature of the materials used, nor the question of the conservation of the retouched photographic objects.

In terms of conservation and restoration, lack of knowledge on how retouching was done and with what materials, can jeopardise the conservation of the photographic specimen. Today, as Herrera Garrido (2011) states, there is a risk of interpreting retouching as a deterioration or later introduction of foreign elements, so that during the conservation process they are simply removed or overlooked. Even when the conservator recognises the existence of retouching, he will not intervene because he does not have the information necessary to preserve them.

Moreover, retouching was done with specific technical and artistic intentions; these data bears important keys for understanding the history of photography and visual culture of its time, which otherwise may be lost or remain undiscovered.

The aim of the following review is to understand the retouching practice, recommendations and procedures and contextualise the above mentioned issues, that will be developed in the project.

### The Retouching Gelatin Glass Plate Negatives

*Retouching gelatin glass plate negatives is the correction of defects by means of a pencil or brush. It was in seeking to remedy the imperfections of the photographic portrait that our predecessors did retouching.* (Wurtz in *Boletim Fotografico*, 45, 1903:134)

*In summary, retouching should not be considered simply painting to cover over holes and smoothen features; it should be used in so far as it is necessary to reproduce exactly the effect caused by the model on the retina.* (Wurtz in *Boletim Fotografico*, 45, 1903:138)

Photography was meant to be the tool for recording the truth, even though, from the start, it had some technical limitations. Poor lighting and optics generated imperfections and errors that could not be considered the truth. Long exposure times made forced expressions and postures, and the photographic emulsion had limited sensitivity to some colours. These limitations were circumvented with the practice of retouching.

But images were retouched not only to correct defects. From the beginning, photographers turned naturally to retouching in order to achieve an art status, such as painting as a canon and a rival.

In an age without digital tools photographic images were altered or retouched by hand. It was the photographer or professional retoucher who undertook this work; and like a painter, they needed to have knowledge of artistic techniques. Also, as in painting, manuals were written to explain techniques and show how to prepare the materials. These books were sources for sharing knowledge and developing new techniques. Knowledge was transmitted and applied, and its influence can now be found in the archives and photography collections.

### **Period books**

In the books and other publications found on the retouching of negatives, from the late nineteenth until the mid-twentieth century, it is possible to trace technical differences or evolutions over time and from country to country, that followed its contemporary aesthetic trends. It was possible to identify key authors, with both artistic and chemistry backgrounds, who produced texts criticising, justifying and popularising the use of retouching. In the various books consulted some answers or clues were sought out to the questions that frame the project, about the ethics and validity of the retouching, visual culture of the time, technical evolution and identification of materials and intentions.

Next some authors and works from different countries are reviewed, namely of French, British, German, North American and Portuguese editions.

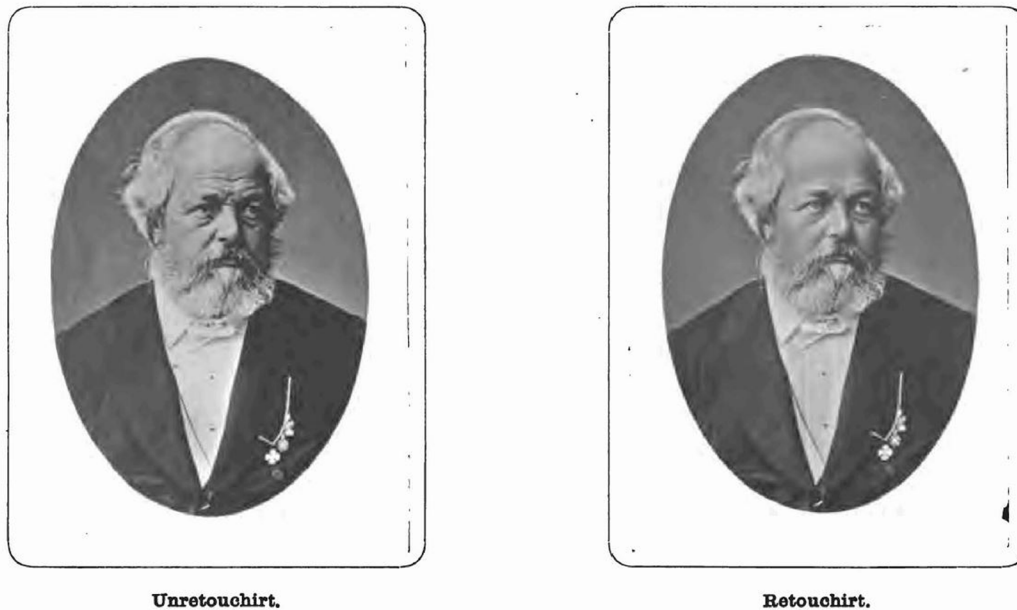
### **Retouching in German publications**

**H. P. Robinson**, an English photographer, artist and critic conveys in his book that it was an accepted fact among his peers that retouching techniques were introduced to England via German photography (Robinson, 1891:118).

**H. W. Vogel** was a prominent German author who, although his work only briefly addresses retouching techniques, mentions the need for it and under what conditions he considers it legitimate ("Lehrbuch der Photographie", 1870; "The progress of Photography since the year 1879", 1883). Although his area of study was photochemistry he sees the potential of photography as an art and dedicates an entire chapter on "The art of Photography" including topics such as aesthetics (Vogel, 1870:387-467). He can be considered a purist because, for him, photography was primarily a recording technique, and the positive image should not be tampered with by retouching. He legitimates retouching of the negative, but only to correct technical limitations, and recommends following the guidelines of another German author, **Johannes Grasshoff** who was a photographer and watercolour painter (Vogel, 1870:380). Ironically, the work of this author also focuses on the painting of positives in watercolour or oils in order to make them approximate paintings.

Another prominent author is **Carl v. Zamboni**, Croatian and established in Viena, Austria since 1980, was a painter before becoming a photographer and sees retouching from the point of view of drawing. In the work of 1888, "Anleitung zur Positiv- und Negativ-Retouche" like Grasshoff he uses retouching techniques on positives and negatives. Zamboni, however, distinguishes the main feature of both. For him, the retouching of positives serves as a supplement to the work, while the retouching of negatives is a part of and completion of the final picture (Zamboni, 1888:22). The images included in the work show heavy retouches that altered facial expressions, where even the elderly show smooth skin (Figure 1). A chapter on landscape retouching is also included.

**Zamboni, Die photographische Retouche.**



**Figure 1** - Print with an example before and after retouching (Zamboni, 1888:e.1).

### **Retouching in UK and US Publications**

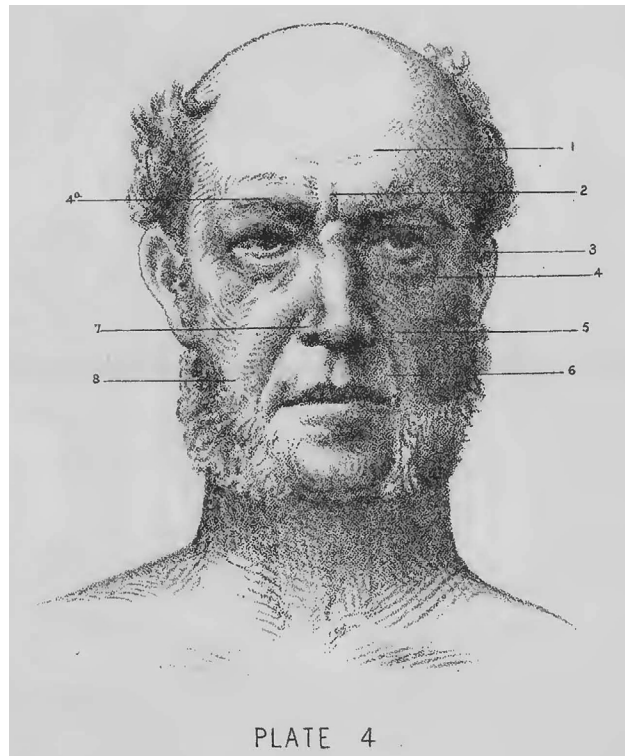
In the nineteenth century, photographers struggled with the true function of photography. Was it simply a means of recording something or a way of creating an image, an art form? Photographers understood that they could only claim photography to be an emerging art form if they could compare it with the other long established arts, the fine arts.

The pictorialism movement (1891-1910) assumed the role of establishing photography as an Art, but its followers did not always take similar positions (Hannavy, 2007:1126-1131). Photographers draw inspiration from painting to define motives and composition and, in general, the movement rejects the retouching and colouring of the positive image. There was extensive use of photomontage but the issue of retouching negatives divided its followers.

The already mentioned, **H.P. Robinson**, was a well-known English pictorialist photographer. He is one of the first authors and photographers to defend photography as an art form. Most influential for his written work, wrote several books on photography. One, more practical, and focused particularly on composition and the validity of retouching, which he

considers legitimate, was "The studio and what to do in it" (Robinson, 1891). In the chapter on retouching, instead of addressing the techniques, Robinson prefers to approach its history, developments and uses (Robinson, 1891:116-121).

**J. P. Ourdan**, an American, in his work "The art of retouching" (Ourdan, 1880) also focuses on these subjects. For Ourdan photography is undoubtedly an art and on retouching he justifies it: "(...) for, as beautiful as the Art of Photography is, there can be no doubt that it abounds in shortcomings, and to meet these Retouching is without dispute a powerful adjunct". (Ourdan, 1880:vi) Retouching is a correctional technique, but one that the ultimate goal is to give artistic character to the image. Therefore he gives importance to drawing, including illustrations on the proportions of the human head (Figure 2), and also the areas of light and shade, or "artistic" effects, which he calls "Rembrandts".



**Figure 2** – Plate 4 showing parts of the human head (Ourdan, 1880:p.4).

**George B. Ayres** is another American author, artist and inventor who wrote "How to paint photographs" (1883). In his work, he refers to retouching as an "art-resource" and refers to the "License of art" as a way to justify the retouching beyond correcting the limitations of photographic techniques. He explains that the negative should always be retouched, even when the person requesting a work asks to be portrayed as he is, justifying that: "where the artist's better judgment suggests improvement which shall not impair the likeness as a whole, it will not be complained of as objectionable" (Ayres, 1883:24). He also underlines the existing tendency to exaggeration. And finally he states that only the result should be "enjoyed", while the retouching work should be "imperceptible" (Ayres, 1883:189).

Yet another English author, with extensive work also published in the US, **Robert Johnson** is a reference, particularly since he did revisions of his own work and, over several edi-

tions. In his work it is possible to follow some technological and industrial advances that most affected photography and retouching, such as the introduction of film instead of glass support, the arise of the motion picture and the major photographic companies such as Kodak and Agfa-Ansco. One of his notable works "The art of retouching and improving negatives and prints" (Johnson, 1941) was first published in the UK, for this review however, in its 14th edition published in the United States in 1941. It was written as a manual and differs from the English version by including several images with examples of retouching. He makes reference, not only to techniques, but also to new equipment, and retouching machines such as a pencil vibrated by electricity and airbrushes. He remarks on the need for glamour and beauty in the motion-pictures, and the sale of special make-up kits which were adopted by the photographic industry. He also stresses different aspects in the preparation before photographing in order to reduce the need of retouching, since negatives were also beginning to get smaller.

### **US - A woman Author**

Women were often employed as retouchers since the work required delicacy and patience, which were considered typically feminine characteristics. However, cases were that women also established themselves as photographers.

*In England and from the other side of the Atlantic the first established women photographers were drawing artists abandoning in part or totally the brush, the pencil or drawing stump, and consecrate themselves to photography portrait. Their way of work differs profoundly from our Parisian professionals.* (L. Gastine in *Boletim Fotografico*, n.32, 1902, pp.113-115)

This was the case with **Clara Weisman**, an American author who treated photography as a work of art similar to painting. Her work can be considered part of the pictorialism movement, and the result to be achieved was intended to be unique and not for the reproduction of copies.

Unlike other pictorialists such as **H.P. Robinson**, who made use of photographic manipulation such as photomontage to create their work, Weisman recommended retouching the negative and various preparations before the image was developed.

In her work "A complete treatise on artistic retouching, modeling, etching, art and nature, art and photography, character chiaroscuro, composition, style and individuality" (Weisman, 1903) retouching is explained with examples in which composition, lighting and retouching are equal tools, such as brushes and paints are in painting (Figure 3). The idea is not to produce an accurate picture but to capture the image beyond simply recording it. For her, the photographer needs to have artistic training and an understanding of human anatomy.

*The more artistic ability one possesses the more power he has to portray the pictorial.* (Weisman, 1903:10)



**Figure 3** - Left: Print of "Profile retouched properly" and right print of "Madonna and Child" (Weisman, 1903:p.3-11).

### Retouching by French Authors

Two French authors stand out in particular because they are known and published in Portuguese translations as well.

**C. Klary** is the author most often translated into Portuguese, both in Portugal and Brazil. Klary was the editor of the French monthly magazine "Le Photogramme" of which a February edition from 1901 covers the use of retouching. He held a position in 1901 at the "École Pratique de Photographie" in Paris, where he sold a device invented by himself and C. Kindermann, the Alenagraph - a retouching machine (Advertisement and invention data in "Boletim Photographico", n.24, 1901). His work 1897 "L'art de retoucher les négatifs photographiques" shows the clear influence and sometimes transcription of passages from the German author Vogel and the English author H.P. Robinson.

Another important author is **Paul Piquepé**, of French origin, worked in England, where his first writings were published. Only later did he also publish in French translation.

There are two works of note: the 1906 "Traité pratique de la retouche des clichés photographiques" and the 1886 "Practical treatise on enamelling and retouching photography". Written in manual form, he offers practical suggestions and examples. In his French works there are also references to different external sources such as photographic meetings in which he took part, or periodicals to which he had access, such as the "The British Journal of Photography" (Piquepé, 1906:67).

## Retouching in Portuguese Publications

In Portugal there were several technical works on photography circulating in the first half of the twentieth century, mostly translations of other foreign authors like Klary or Piquepé mentioned above.

One Portuguese author does stand out, however; **Arnaldo Fonseca**, who wrote several works in the form of manuals, essays and opinion articles. While there is no known work by this author that deals exclusively with retouching, there is one of mention from 1905 "Guia do Photographo", which is an important summary of the photographic techniques of the time. However, it does not extend, unlike the other authors mentioned here, to justifying the use of retouching, and merely presents it as just another photographic step.

Arnaldo Fonseca was also a teacher of photographic techniques at the "Academia de Estudos Livres" in Lisbon, on a course that started in 1900. Retouching was taught in the 4th part of the course devoted to the negative. The course followed the same sequence of topics as the aforementioned work with the addition of a final section devoted to the use of photography in science and industry (*Boletim Photographico*, n.3, 1900:36).

## Photography Establishments

Along with the industrialisation of photography, commercial establishments were set up dedicated exclusively to the business of photographic materials and equipments. Some also provided related services such as working as photography studios, exhibitions salons, provided training courses for amateurs, and were publishers of books and technical journals. These publications had several pages of advertisements at the front and back, listing of products and services available at their stores and other major suppliers.

In Portugal, among others there were the Armazéns do Chiado and Worm & Rosa, both in Lisbon, that published different works dedicated to photography. Worm & Rosa publication "Boletim Photographico" served as intermediary between Portuguese readers and news abroad. Worm & Rosa received foreign publications and then gave Portuguese readers access via translations; they also promoted events such as competitions and exhibitions abroad. This bulletin was published between 1900 and 1914 on a monthly basis and Arnaldo Fonseca was its editor in the first decade. A parallel edition was published in Brazil. The bulletin was intended as a forum for sharing innovations or experiences between professionals and amateurs. Photographers were encouraged to participate and send works for illustration of the bulletin. Among the illustrious contributions of known photographers also included are several members of the Portuguese Royal Family, known lovers and promoters of the Art of Photography; and the Frenchman C. Klary mentioned above.

In England it is noteworthy the Marion & Co (Hannavy, 2007:892-894), with a store in London. In the last quarter of the nineteenth century it was an active promoter of amateur photography with the sale of sets of amateur photography and retouching materials (Figure 4). It was one of the first stores to treat photography as an industry, becoming one of the largest, if not the largest in England of that time. One publication worth mentioning dedicated to retouching, published in 1898 by the aforementioned **Robert Johnson**, was called: "A complete treatise on the art of retouching photographic negatives". In relation to other works already mentioned, this book focuses more on the aesthetic aspects of retouching. In this regard he compares photography with the other arts and makes reference to different authors such as Leonardo da Vinci, Lord Byron and John Ruskin, his contemporary.





**MARION'S  
'PERFECT'  
RETOUCHING  
DESK.**

Fitted with Faber's Pencils, Retouching Medium, Water Colours, Brushes, Palette, Knife, and Pencil Pointer, complete in Drawer.

In Polished Mahogany . . . 85/  
In Polished Pine Blacked . . . 70/

This is the most complete Desk ever invented, combining all the desiderata for a Retoucher. It has, in addition to the completely fitted drawer, several special features of its own. Provision is made for retouching negatives of any size up to 12 x 10, and it is so constructed that a portion only of the negative may be viewed through, so that the attention of the artist may be centred, but in the cases of groups the whole width may be left open. The silvered Glass Reflector may be easily adjusted to any angle; whilst the supports of front may be readily fixed to any desired elevation.

**Figure 4** - "Marion's 'Perfect' Retouching Desk". Advertisement for a retouching table, including all the materials necessary, at the back of a book published by Marion & Co (Johnson, 1898:176).

In the USA, worth of reference, Scovill & Adams company sold photographic material in New York and had an editorial headquarters in Washington. They published complete collections dedicated to photography in manual format, divided into practical lessons. One relevant example from 1889 was "The modern practice of retouching negatives, as practiced by french, german, english & American experts" frequently attributed to **Paul Piquepé**, referred to above, was in fact a compilation by three authors: **Piquepé, H. P. Robinson** and **Johannes Grasshoff**, cited above by Vogel. This work is particularly interesting because it provides an analysis of the different views of each author, from France, England and Germany, respectively. The practicality of Piquepé, the pictorialism intentions of Robinson when referring to portrait photography and the emphatic retouching by Grasshoff, in the chapter dedicated to landscape photography.

### Recipe Books

Amongst the different works on photographic techniques there were also those that could be classified as "recipe" books. Unlike the above mentioned works, these were organised by theme or simply in alphabetical order, and were designed as reference books, without the inclusion of a critical view, each topic being treated in a practical way. A significant work by **A. Shaeffner** from 1888, "Notes photographiques expliquant toutes les opérations et l'emploi des appareils et des produits nécessaires en photographie", is noteworthy as it included, within the topic on the health and safety of the photographic professions, a section on the retouching of glass plate negatives, and recognises the professional status of the retoucher (Shaeffner, 1888:86-87).

## Conclusions - or the Beginning of a Journey

The works reviewed here, express ideas that reveal the position of their authors on the parameters of aesthetics and visual culture of their time, and illustrate the differences from one author to the other and from country to country.

To know which retouching practices each author accepts, recommends or advises against is to know a certain artistic and aesthetic ideology that each one adopts, shares and debates.

While the legitimacy of retouching in photography shows no signs of consensus to this day, all of these authors recognise the need for retouching on gelatin glass plate negatives and reflected and presented their justifications and their arguments. Those with a background in science recommend it primarily as a way of overcoming technical limitations, while those with experience in the arts manifest a freer position with retouching being considered as an artistic tool.

This was a period in which authors and photographers in general sought ways to define photography as an art; for some, in comparison with Painting, for others, as a technique independent of it. As proof, note the use of the word Art in the title of several works; and how some of the authors present themselves as painters or artists.

The industrialisation of photography and photographic houses were cornerstones in the democratisation of photographic techniques, including retouching. The most heavily criticised retouching was that done at some studios, with no artistic intention and in a standardised way which often led to excessive uniformity of the image, with loss of individuality. This happened because, although many retouchers had artistic training, the studios needed to work quickly to meet demand.

During this project the issues dealt with here will be revisited and confronted with the reality encountered in different Portuguese photographic collections. The influence of French authors on Portuguese collections is to be expected as it was noticed close exchange between them and Portuguese authors.

This is an ongoing research project that has set objectives for the conservation and preservation of retouched gelatin glass plate photographic negatives. The knowledge of the culture of the time, expressed in the manuals studied, provides important information about how the retouching practice was understood, and opens relevant clues on how to approach and preserve it for the future.

## References

Author, 2010.

AYRES, G. B. *How to paint photographs in water colors and in oil how to work in crayon, make the chromo-photograph, retouch negatives*. 6<sup>th</sup> Ed. New York: Daniel Appleton & Company, 1883. [Accessed: 03.05.2016].

<https://archive.org/details/cu31924031285319>

BORÝSKOVÁ, Š. Úpravy povrchu negativů. (Treated surfaced layers on negatives). In *Forum pro Konzervátory-Restaurátory*, 2011, pp. 34-36.

CERMANOVÁ, T. Retuše skleněných deskových negativů (Retouching Glass Plate Negatives). In *Restaurování a ochrana uměleckých děl / retuše uměleckých děl. Sdružení pro Ochranu Památek Arte-fakt*, Litomyšl. Czech Republic, 2010, pp. 16-18.

FINEMAN, M. *Faking It: Manipulated Photography before Photoshop*. New York: The Metropolitan Museum of Art, 2012.

FONSECA, A. *Guia do Photographo*. Lisboa: Worm & Rosa, 1905.

FONSECA, A. (Ed.) *Boletim Photographico*. 1900-1906, n.1-48 and 61-84, Lisboa, Worm & Rosa [Accessed: 03.05.2016]. <http://hemerotecadigital.cm-lisboa.pt/Periodicos/Boletim-Fotografico/BoletimFotografico.htm>

HANNAVY, J. (Ed.). *Encyclopedia of Nineteenth-Century Photography*. New York: Routledge, 2007.

HERRERA GARRIDO, R. Técnicas de retoque de negativos fotográficos historia y conservación. *Pátina*, 16, (2011), pp. 125-136.

JOHNSON, R. *A complete treatise on the art of retouching photographic negatives*. 4<sup>th</sup> Ed. London, Marion and C<sup>o</sup>, 1898. [Accessed: 03.05.2016]. [https://archive.org/details/completetreatise00john\\_0](https://archive.org/details/completetreatise00john_0)

JOHNSON, R. *The art of retouching and improving negatives and prints*. 14<sup>th</sup> Ed. Boston: American Photographic Publishing Co, 1941. [Accessed: 03.05.2016]. <https://archive.org/details/artofretouchinga000681mbp>

KLARY, C. *L'art de retoucher les négatifs photographiques*. 4<sup>th</sup> Ed. Paris: Gauthier-Villars et Fils, Imprimeurs-Libraires, 1897.

OURDAN, J. P. *The art of retouching*. New York: E. & H. T. Antohny & Co., 1880. [Accessed: 03.05.2016]. <https://archive.org/details/artofretouching00ourdiala>

PIQUEPÉ, P. *Practical treatise on enamelling and retouching photography*. London: Piper & Carter, 1886. [Accessed: 03.05.2016]. <https://archive.org/details/practicaltreati00piqugoog>

PIQUEPÉ, P. *Traité pratique de la retouche des clichés photographiques suivi d'une méthode très détaillée d'émaillage et de formules et procédés divers*. Paris: Gauthier-Villars, 1906. [Accessed: 03.05.2016]. <https://archive.org/details/traitpratiquede00piqugoog>

SCHAEFFNER, A. *Notes photographiques expliquant toutes les opérations et l'emploi des appareils et des produits nécessaires en photographie*. 2<sup>nd</sup> Ed. Paris: Librairie Gauthier-Villars, 1888.

ROBINSON, H. P. *The studio and what to do in it*. Londres: PIPER & CARTER, 1891. [Accessed: 03.05.2016]. <https://archive.org/details/studiowhattodoin00robi>

*THE MODERN practice of retouching negatives, as practiced by french, german, english & American experts*. 4<sup>th</sup> Ed. Scovill's Photographic Series. New York: The Scovill & Adams Company, 1889. [Accessed: 03.05.2016]. <https://archive.org/details/modernpracticeof00piqu>

VOGEL, H. W. *Lehrbuch der Photographie*. Berlin: Verlag con Robert Oppenheim, 1870.

[Accessed: 03.05.2016]. [https://archive.org/details/bub\\_gb\\_rjYaAAAAAYAAJ](https://archive.org/details/bub_gb_rjYaAAAAAYAAJ)

VOGEL, H. W. *The progress of photography since the year 1879*. Philadelphia: Edward L. Wilson, 1883. [Accessed: 03.05.2016].

[https://archive.org/details/gri\\_33125001045331](https://archive.org/details/gri_33125001045331)

WEISMAN, C. *A complete treatise on artistic retouching, modeling, etching, art and nature, art and photography, character, chiaroscuro, composition, style and individuality*. Saint Louis: H. A. Hyatt, 1903. [Accessed: 03.05.2016].

<https://archive.org/details/treatiseonartist00weis>

ZAMBONI, C. *Anleitung zur Positiv- und Negativ-Retouche: Herausgegeben und durch praktische Beispiele erläutert*. Halle a. S.: Wilhelm Knapp, 1888. [Accessed: 03.05.2016].

<https://archive.org/details/anleitungzurpos00zambgoog>

## **Agradecimentos**

Este artigo insere-se no projecto de doutoramento de Catarina Pereira que recebe financiamento pela FCT, Ref: SFRH/BD/116315/2016.

## **Authors CV**

### **Catarina Cortes Pereira**

Presently a Researcher and PhD student at the School of Arts, CITAR, Catholic University of Porto. She holds a Master degree in a Master in Science in Conservation by Nova of Lisbon in 2013 and a degree in Art - Conservation and Restoration of Paintings by School of Arts of the Portuguese Catholic University in 2007. Fellow in Conservation and Restoration at the Laboratory HERCULES, University of Évora from 2013 to 2015. In Spain, 2009, she obtained training and internship at the Conservation and Restoration Institute of Valencia in the Documents department.

**Contact:** [catarinacortes@gmail.com](mailto:catarinacortes@gmail.com)

### **Laura Castro**

Director of the School of Arts of the Portuguese Catholic University and Assistant Professor. Researcher at the Research Center for Science and Technology of the Arts (CITAR) in the same School. She holds a PhD in Art History by the Faculty of Fine Arts of the University of Porto in 2010 and a Master degree and Master in Art History from the Faculty of Social Sciences and Humanities of the Nova of Lisbon in 1993 and a degree in the same area by the Faculty of Arts of the University of Porto in 1985. Member of the Portuguese Association of Art Historians and of the International Association of Art Critics.

**Contact:** [lcastro@porto.ucp.pt](mailto:lcastro@porto.ucp.pt)