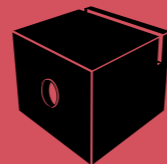


**SCIENCE, ART
AND HERITAGE.
THE ISOLATED DISCOVERY
OF PHOTOGRAPHY IN BRAZIL**

BORIS KOSSOY

Escola de Comunicações e Artes da Universidade de São Paulo
boriskossoy@gmail.com

Published by:



EARLY VISUAL MEDIA LAB
C I C A N T

*CIÊNCIA, ARTE E PATRIMÔNIO.
A DESCOBERTA ISOLADA
DA FOTOGRAFIA NO BRASIL*

Introduction

Produced by different techniques and processes, photographs have become means of visual knowledge, historic sources for the study and transdisciplinary research of multiple aspects of the history, culture, memory and identity of societies. The cultural heritage of a people finds, in the photographic image and in its artefacts, visual memory preserved.

My topic addresses precisely the moment prior to the dissemination of photography throughout the world. A moment when photography, or the idea of it, was still something that some researchers, very few, some distant from others, thought about and experimented with a similar aim: that of making permanent the images of the *camera obscura*. I am referring to the first decades of the 19th century and, more specifically, to the 1830s. Historic approaches, when they seek to analyse the possible causes that determine discoveries, usually repeat “that the idea was in the air”. Actually, this statement explains very little of the phenomenon, at least in the instance we will address here.

Keywords : History of Photography; Photography and Brazil, Hercule Florence

Introdução

Produzidas por diferentes técnicas e processos, as fotografias se prestam como meios de conhecimento visual, fontes históricas para o estudo e a pesquisa transdisciplinar de múltiplos aspectos da história, cultura, memória e identidade das sociedades. O patrimônio cultural de um povo tem na imagem fotográfica e nos seus artefatos, a memória visual preservada.

Meu tema se refere justamente ao momento anterior à expansão da fotografia pelo mundo. A um momento em que a fotografia, ou a ideia dela, era ainda algo que alguns pesquisadores, muito poucos, uns afastados dos outros, pensavam e experimentavam com um propósito semelhante: o de tornar permanentes as imagens da camera obscura. Me refiro às primeiras décadas do século XIX e, mais precisamente, à década de 1830. As abordagens históricas quando buscam analisar as possíveis causas determinantes das descobertas costumam repetir “que a ideia estava no ar”. Na realidade essa frase explica muito pouco sobre o fenômeno, pelo menos no caso que abordaremos aqui.

Palavras-chave: História da Fotografia, Fotografia e Brasil, Hercule Florence

Europe in the early 19th century¹

How can the phenomenon of the invention of photography – or indeed any other invention – be understood without the full knowledge of the historic, cultural, social, economic, political context of the place where it came about? How can the phenomenon be understood without the detailed study of the author’s biography: his life, training, worries and feelings, thinking and motivations? How can the dimension of the achievement of the different researchers be understood without that knowledge?

In this sense, it is crucial to highlight the favourable atmosphere for the advancement of science and technique, which could be found in some European countries since the 18th century, especially in England, the cradle of the Industrial Revolution. The idea of mass production lay at the root of this production. It was in a promising cultural and artistic atmosphere and in a century which teemed with all kinds of technological innovations that the idea of photography was developed by its precursors in Europe, particularly in France and England.

Meanwhile, on the other side of the Atlantic...

The 1820s and 1830s are crucial to bring us closer to the motivations and dreams which inhabited the imagination of Antoine Hercule Romuald Florence (1804-1879), a Frenchman from Nice, newly-arrived to Brazil (in 1824) as cabin boy of

the Royal Navy aboard the frigate *Marie Thérèse*; he was then twenty years old. Florence reveals in his autobiography that, from a very early age, when he read *Robinson Crusoe*, he became passionate about maritime travel and adventures:

1) I would like to thank Professor Victor Flores for the kind invitation to participate in the conference ‘Photographic Monuments’ held in Batalha and Leiria (15-16 June 2019), as well as Antonio Florence for suggesting it to me. It has been the first time I have participated in an academic gathering in Portugal, which gave me truly special satisfaction, also due to my fascination with the subject of this meeting. The text now published is based on the Portuguese and English editions of my book *Hercule Florence, a descoberta isolada da fotografia no Brasil*. São Paulo: Editora da Universidade de São Paulo, 2006 and *The pioneering photographic work of Hercule Florence*. New York/London: Routledge/Thames & Francis, 2018.

“[...] this taste was given to me by that of Geography, and I would spend long hours perusing a good atlas we owned. There was no point on the globe where I did not intend to go someday. The Mediterranean seemed to me to be very small, and I only aimed to roam it as one would roam a lake in his own country before leaving it”².

The Langsdorff Expedition

Florence was an accomplished artist, and that talent made him apply for the position of illustrator in one of the more famous scientific expeditions to visit Brazil in the 19th century. Two years after his arrival, Florence was hired as one of the draughtsmen of the Langsdorff Expedition, sponsored by the Imperial Government of Russia – at first by Alexander I (1777-1825) and, following his death, by his successor Nicholas I (1796-1855), an expedition which roamed the inland of Brazil by river between 1825 and 1829. This was a scientific mission led by the physician and naturalist Baron

von Langsdorff, who also held the position of Consul of Russia in Rio de Janeiro³. The task of recording all the various aspects of the trip fell to Aimée-Adrien Taunay⁴ and Hercule Florence, respectively the first and second draughtsmen of the expedition. A series of misfortunes, however, happened along the route; Adrian Taunay drowned in the Guaporé River, and Langsdorff and his companions were victimized by malaria, beriberi and other tropical diseases. The leader of the

expedition, stricken by mental insanity, would never come to his senses. Given these incidents, it was up to Florence to make the full report of the expedition.

Florence describes the meeting with the Apiacá Indians on 11 April 1828. At the top, the illustration depicts a canoe transporting a group of Indians. Below, Langsdorff's arrival and the welcome given to them by men, women and children. At the centre we see the *cacique* (tribal chief), wearing a uniform and a hat deformed by time. On the vessel, the baron flaunts his uniform of general consul, a bicorne hat, sword and decorations (as can be read in Florence's report). The author also highlights that, at the time, Langsdorff was already suffering the consequences «of the intermittent fevers [...]». The excess of these fevers disturbs his ideas completely and causes memory loss in him».

Iconographic work

The major problem is that, with Langsdorff's illness and death, the collected material and the drawings remained forgotten for a long time in the Academy of Sciences of Saint Petersburg, later known as Academy of Sciences of the

Soviet Union. If the iconographic documentation had been published, Florence's fate would have been different, like that of artists Debret⁵ and Rugendas⁶, who also depicted Brazil, and whose artworks met with acclaim in Europe. This would constitute Florence's first great frustration.

Polygraphy

In 1829, upon his return from the expedition, Florence wanted to publish his observations on the sounds produced by the animals whose records the artist made notes on during the years of the voyage. He titled this research *Zoophonie*. It was then that he realized the void he found himself in. He was troubled by his isolation in the face of the difficulty to print any text since there was only one printing shop in the whole province of São Paulo and it was located in the capital city. This made him undertake – considering the modest possibilities available to him – a broad study on alternative printing systems, an effort which resulted in the method by which he could print, including colours. He gave his discovery the name *Polygraphie*. In 1832 he was already rendering printing services of “writing and drawings” in Vila de São Carlos, as attested by the petitions sent to the local Town Hall.

2) *L'Ami des arts livré à lui-même ou Recherches et découvertes sur différents sujets nouveaux*, Vila de São Carlos, p.177.

3) Georg Heinrich F. von Langsdorff (1774-1852) received a PhD in Medicine from the University of Göttingen in 1797. He was physician of the court of the Prince August von Waldeck, which led him to Portugal. He remained in this country until 1800, where he devoted himself to his profession. In the following years he lived in Spain, integrating the English fleet. In 1803 he was appointed corresponding-member of the Academy of Sciences of Russia abroad. Next, he participated in a long voyage of circumnavigation around the world, sponsored by the Russian government, an occasion which made him interested in ethnography, geography, linguistics, botany, economics and other disciplines. The work *Bemerkungen auf einer Reise um die Welt in den Jahren 1803-1807*, published in Frankfurt, in 1812, was the result of this expedition which, for its acknowledged contribution, became renowned among the scientific community. In this same year, he was elected extraordinary member of the Academy of Sciences of Saint Petersburg and General Consul of Imperial Russia in Rio de Janeiro. In 1813, he was already living in this city, where, apart from his diplomatic duties, he ran the Fazenda da Mandioca, a property he would purchase a few years later.

4) Aimé Adrian Taunay (1803-1828) was born in Paris. He was the son of Nicolas Antoine Taunay (1754-1830), one of the members of the French Artistic Mission which, at the invitation of King John VI, arrived in Rio de Janeiro in 1816. Fascinated by art and by the expeditions, as a young man he joined the voyage of circumnavigation undertaken by Freycinet. Artist of rare talent, his life was tragically cut short in 1828, during the journey of the Langsdorff expedition.

5) Jean-Baptiste Debret (1768-1843), born in Paris, France, was a painter, engraver, illustrator, set designer and teacher. He worked in Napoleon's court in the early 19th century and integrated the French Artistic Mission which came to Brazil in 1816. He taught painting in the Imperial Academy of Fine Arts and wrote a vast body of work depicting customs, types, daily life, landscapes, etc. Back in Paris, he published *Viagem Pitoresca e Histórica ao Brasil*, in three volumes, illustrated with lithographs from his watercolours.

6) Johann Moritz Rugendas (1802-1858) born in Augsburg, Germany, was hired as illustrator to be part of the Langsdorff expedition. He arrived in Brazil in 1821 and travelled at his own expense until 1825. In 1824, he had fallen out with the mission chief, and this is the reason he never participated in the famous expedition carried out from 1825 to 1829. When he returned to Europe in 1825, he gathered part of the drawings made in Brazil in a deluxe edition, published in Paris in 1835, with texts in French and German, under the title *Voyage pittoresque dans le Brésil* [Picturesque trip to Brazil]. His iconographic records placed him in a prominent position among the artists-travellers who worked in Brazil during the first half of the 19th century.

Florence made his method known throughout the province of São Paulo and undertook several attempts to disseminate it through letters (with schemes and details of his process) to institutions in France and Italy, in search of an official recognition of this discovery, but without success. Going into details on poligraphy, which was his second frustration, falls outside the scope of this discussion. What is important to highlight here is that the search for practical and cheap printing methods was a goal he would not abdicate from. This would fill a void in terms of printing in the region where he lived. And, indeed, using poligraphy, Florence printed texts, as well as advertisements for hat sales and even an itinerary map of the province roads. Providing his region with the possibility of a device which could print, advertise, inform was his main motivation. From that moment onwards, his involvement with graphic experimentation and the desire to implement his innovations would be recurrent in his path.

The idea of photography. First experiments

The idea of photography came to him, on the one hand, from information he received from the young pharmacist Joaquim Corrêa de Mello⁷ on the properties of silver nitrate when exposed to light. Florence knew of the *camera obscura* as an

auxiliary drawing device, ideal to delineate a view, a landscape. Like every artist and traveller of his time, he knew of the properties of the instrument: its principle was widely known and used in Europe; it dated from a remote past. Aware of the properties of silver nitrate, he used this substance to sensitize the paper, which he placed inside a rudimentary, home-built *camera obscura*, and obtained his first photograph on

7) As a very young man, Joaquim Corrêa de Mello (1816-1877) worked in the apothecary of Álvares Machado, Hercule Florence's father-in-law, from 1832 to 1834. He had been brought to Vila de São Carlos, following his father's death, by Álvares Machado himself, who, in turn, was the brother of young man's stepmother. In 1834, Álvares Machado sent him to the court to study in the regular course of pharmacy. He was a dedicated and remarkable student, and in 1836 he received his diploma with the distinction: *optime cum laude*. Upon his return to Vila de São Carlos, Álvares Machado made him a partner in the apothecary, and he ran this establishment for many years. After the apothecary was closed, following his partner's death, Corrêa de Mello dedicated himself to botany, and his first study was devoted to indigenous medicinal plants. Better known in Europe than actually in Brazil, he kept close contact and collaboration with the greatest botanists of his age. The information which Corrêa de Mello conveyed Florence regarding silver nitrate was, unquestionably, decisive for the latter to start his experiments with photography.

Change of course: impression by light (utilitarian experience) rather than capturing images from his surroundings (aesthetic experience)

Despite the bewilderment he experienced with the unexpected aesthetic experience of retaining the images of the things of the world within the *camera obscura*, he decided to apply this knowledge to develop a technique to reproduce his themes on photosensitive paper copied in contact with a glass matrix. This was a way of "printing by light", in other words, of multiplying the information. There is, therefore, a coherence between this technique and its use in *practical applications*. It is, anyway, an immediate unfolding of his experience with the *camera obscura*. He gave this invention the name of *Photographie*.

In figure 3 (top left corner) we see the schematics of his handmade *camera obscura*. Figures 1 e 2 depict his boards to print copies, by contact, using exposure to sunlight. The wood board was placed according to the position of the sun by means of adjustable mountings. In the lower part of the board we see a bulge which was used as support for the matrix board (in glass), where the drawing is outlined. The

20 January 1833⁸. Florence also mentions other images he made using the *camera*: a bust of La Fayette and the view from the Campinas prison⁹. Actually, Florence obtained an image in "negative". During that very month of January, he would write in his diary:

If, however, the image can be set on the glass, only the first operation will be indispensable, adjusting then the prepared paper underneath [the glass] and placing it in the sunlight, and the image will acquire its true sense (*son vrai sens*). If the glass does not hold the colours, an extremely thin and transparent paper may, unquestionably, do.¹⁰

8) *Livre d'annotations et de premiers matériaux, Vila de São Carlos* [Book of annotations and first materials, Vila de São Carlos], 20 Jan 1833, pp.131v.-132. Florence tells in his diary that he built his first *camera obscura* in a rudimentary fashion, using a box which he covered with his painter's palette. The hole was covered with a spectacle lens.

9) This photo is mentioned in a letter he sent Manoel Ferraz de Campos Salles (1841-1913), still young at the time, but who would become, around the end of the 19th century, President of the Republic of Brazil. Besides this recipient, we can mention Joaquim Antonio Pinto Júnior (1817-1880), lawyer, politician, and teacher, among other people.

10) *Livre d'annotations et de premiers matériaux* [Book of annotations and first materials], p.134. In January 1833, Florence described the essence of the photographic concept based on the negative-positive system.

photosensitive paper was placed between the wood board (painted black) and the glass board (the negative matrix).

Over the course of five years, Florence reports in his diaries the experiments he carried out, developed from the study of works by Berzelius (his main reference), Fourcroy, Laugier, among several other renowned scientists. His diaries, and the specimens of masonic diplomas and pharmacy labels copied by his photographic process, bear witness to his progress between 1833 and 1838.

Photosensitive materials and solvents to make images permanent

Among all the substances studied, his preference regarding paper sensitization fell on silver chloride and gold chloride. The same happened regarding his search for a solvent which could remove or dissolve the silver salts not struck by light and, thus, make images permanent. Florence found in urine and ammonia the solution for this. He used urine (depending on the ammonia in its composition) as a substance which made the prepared photographic copies stable, especially

with gold chloride. From his readings of Berzelius, Florence came into contact with the properties of ammonia as a substance which eliminated the silver salts not struck by light. He then started using caustic ammonia (ammonium hydroxide) as a means to prevent his specimens from "fading". *All this indicates that he was the pioneer to "fix" a photographic image effectively.* It was only in 1839 that Daguerre and Fox Talbot

started using sodium thiosulfate to fix their specimens. Up till then they still used kitchen salt, an unreliable and hardly effective method for the task of removing silver salts not struck by light¹¹.

Both the aesthetic experience of *recording* the themes of nature through the *camera obscura*, and the practical experience of *reproducing* or obtaining *serialized* specimens of masonic diplomas, pharmacy and trade labels, drawings (such as that of a Bororo Indian) and advertisements (like that of a hat

11) For the detailed knowledge of the materials, techniques and procedures used by Florence in his discovery see, by the author: *Hercule Florence, a descoberta isolada da fotografia no Brasil* [Hercule Florence, The Isolated Discovery of Photography in Brazil]. São Paulo, 3rd ed., Editora da Universidade de São Paulo - Edusp, 2006 (1st ed., 1977). (There are editions of this book in Spanish, German, French and English).

factory), at the time and the place they happened, became facts of particular importance in the context of the history of the discovery of photography¹². Bear in mind, and this is the most remarkable element, that such "prints" circulated publicly around the province of São Paulo, during the 1830s, years before the famous 19 August 1839, when Daguerre's discovery was announced in Paris.

Statements to the press after finding out about Daguerre's discovery

Florence had two statements published by the Brazilian press after he heard about Daguerre's discovery¹³. In none of them does he claim for himself the paternity of the discovery: "[...] I will not dispute discoveries from anyone, because one single idea can come to two people, because I have always found precariousness in the facts I achieved, to each what is due to him". This is a generous attitude from a man disgruntled with

his situation of cultural isolation: "an inventor in exile", as he himself confided in his diary.

Florence would not return to his photographic experiments, and his discovery went unnoticed in the enslaver and scravo-catic environment in which he lived, as well as by the generations that followed. His leading experiments with photosensitive materials and his discovery of photographic processes would remain immersed in obscurantism for 140 years.

Concluding remarks

Florence was a self-taught artist. Unlike Jean-Baptiste Debret or Johann Moritz Rugendas, he never attended an academy of fine arts and neither was he ever immersed in the systematic study of drawing or painting. Nevertheless, his participation

as illustrator in the scientific expedition to the Brazilian hinterland bears witness to one of the most important iconographic artworks carried out in the American continent in the early 19th century. Likewise, he never had scientific training in some higher education institution in France, from where he left at the age of nineteen; his interest in the various scientific disciplines was absolutely personal, he learned from the textbooks available to him and from his own empirical research, always with a view to practically applying his discovery.

12) In his book entitled *Photography and literature*. London, Reaktion Books, 2009, p.13. Pierre Brunet remarks: "Many of the pioneers' first experiments involved the copying of written or printed documents, including lithographs in Niépce's case, diplomas in Hercules Florence's, and manuscripts in Talbot's early photogenic drawings".

13) The first, by the periodical *A Phenix*, of São Paulo, published in 26 October 1839. *Jornal do Commercio*, of Rio de Janeiro, reproduced the same statement on 29 December of the same year. The second statement was also published by Periodical *Jornal do Commercio*, on 10 February 1840; the piece reproduces the statement sent from São Carlos, on 18 January 1840, to the editor of the periodical. It is possible that Florence had access to the article published on the same periodical the previous day, regarding Comte's demonstrations in Rio de Janeiro. On this topic in particular, see, by the author: O mistério dos daguerreótipos do Largo do Paço [The mystery of Largo do Paço daguerreotypes] in: *Revista USP*. São Paulo, Edusp, 2019, n.120, pp.127-152.

The fact is that photography had *multiple paternities*. Photographic processes could be discovered even overseas, even in the remote Vila de São Carlos, thousands of miles away from the large producing and exporting centres of the western culture. However, the technical improvement of photography and its simultaneous development could only take place in socioeconomic and cultural contexts that were totally diverse from those of Brazil and the whole Latin America: in those countries experiencing the Industrial Revolution taking place at the time.

Florence's discovery adds a new fact to the history of photography. Still, certain facts dug up from the past are not always welcome in the temple of the official history. Such narrow views of the world naturally clash with cultural approaches to history. Here I recall Marc Bloch when he said: "*The past is, by definition, a datum that nothing in the future will change. But the knowledge of the past is something progressive, which is constantly transforming and perfecting itself.*"¹⁴

It is well known that there are conservative attitudes, even superficial, which keep repeating traditional versions that find a place in the footnotes of official histories, the achievements that were not "recognized". I am referring, once again, to the isolated facts which have remained buried and to the anonymous agents who have promoted them: their lives, habits, features and knowledge, to all that us, ultimately, considered uninteresting and, therefore, systematically kept in the underground of history.

The historiography of photography has kept the tradition of what was consecrated from a Eurocentric perspective. That is its ideological stance.

I was privileged to have carried out a project aiming to attest and scientifically reconstruct Hercule Florence's pioneering experiments presented internationally from 1976 and contribute to allow this artist and inventor to deserve his due recognition as one of the discoverers of photography. The existing manuscripts as well as the surviving photographic specimens are precious "photographic monuments" that bear witness to Hercule Florence's isolated discovery, which took place in the remote Vila de São Carlos (Campinas) in São Paulo Province, in the Brazilian hinterland, a pioneering discovery

in the Americas and dating from the same period as those that occurred in Europe. These artefacts and their stories enrich the universal material and immaterial cultural heritage and assuredly have their place in the Memory of the World.

¹⁴) Bloch, Marc. *The Historian's Craft*. New York, Vintage Books, 1953, p. 58 (Translated from the original: *Apologie pour l'histoire ou Métier d'historien*. Paris: Librairie Armand Colin).