Journal of Photography and Motion Pictures of the International Museum of Photography at George Eastman House

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Front Cover: MALE AND FEMALE (DeMille, 1919): assorted boredom of the castaways, including Gloria Swanson (center) and Lila Lee (right). This was one of the early films for which James Wong Howe, later a famous cameraman, "held the slate" for identifying the shots. The still is by Karl Struss. Back Cover: LAUGH, CLOWN, LAUGH (Brenon, 1928): Lon Chaney in the only film of his which Howe photographed.

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Introduction

That the history of photography is still but a very youthful arena of study is apparent. New discoveries and hitherto unrevealed names and styles are uncovered at a fairly consistent rate — so much so that each year suggests a complete overhauling of the basic outline given us by the standard texts. It is certain, also, that we are far from possessing anything near to a fully appreciated overview of the medium's history since these discoveries frequently cause us to re-evaluate many of the assumed facts and accepted criteria of aesthetic judgments.

One of the more notable "new" facts to be discovered issues from a rather unsuspected locale. Only a few years after Niépce's heliographic process; somewhat before the daguerreotype process was being developed in France during the late 1830s; at the same time that William Henry Fox Talbot was experimenting with his photogenic drawings, which were to lead in the early 1840s to the first negative/positive process; and while Hippolyte Bayard was attempting to fix positive images on paper; it appears that a Frenchman by the wonderful name of Hercules Florence "invented" photography in the small Brazilian river town of Campinas.

Reading much like a ficcione by Jorge Luis Borges, the story of Florence and his diaries contains remarkable parallels with the mainstream inventions of photography in Western Europe. It seems that Florence, an amateur scientist, naturalist, and "artist," managed in relative isolation to work with the photosensitive properties of silver salts, to associate these properties with some sort of potential use within a camera obscura, and to have realized results with certain chemicals (most specifically ammonia which Florence found plentifully in urine). Florence did all this — or at least his diaries indicate he did — between 1829 and 1832, nearly a decade prior to the publication of Daguerre's famous process. On one of the pages of his diaries, dated 1832, we find clear and precise drawings of a small camera similar to Talbot's "mousetrap" cameras of a few years later; a series of outdoor printing frames almost identical with those used by Talbot and Henne-man in Reading while printing the Pencil of Nature after 1841; and most spectacularly, the word, in French, "Photographie," appears atop the same page, anticipating Herschel's "coining" of the word "Photography" by some seven years. And as early as 1829, this Frenchman in Brazil was manufacturing pharmaceutical labels for a friend in Sao Paulo, but he was producing these labels by developing out sensitized paper and chemically stabilizing them — in other words he was making photograms or photogenic drawings well before Talbot, Robert Hunt, et al. The correspondences are, indeed, remarkable.

Hercules Florence's early work with photography was first signalled by Gilberto Ferrez, a Brazilian photographic historian, in 1953. More recently his work has been studied by Boris Kossoy, also a photographic historian from Sao Paulo, who has been publishing essays on the history of Brazilian photography over the last five years. The following article is the result of Mr. Kossoy's lengthy involvement with Hercules Florence.

Most likely, the significance of Florence's "invention of photography" will be argued for some time to come. (The question has already been raised whether to include him in the main text or simply in a footnote to photographic history.) One thing is clear, however, and that is regardless of the "fact" that Florence was the first to make a photograph, his invention, his discovery, and even his use of the word "photography" did not extend far beyond the limits of Campinas nor did they influence the general course of the history of the medium. That the parallels and congruences are fascinating and elegant in many ways is certain, as is their academic interest. Hercules Florence's invention is yet another verification that during the 1830s, photography's time had clearly arrived.
Author's Introduction

The idea of making a study in depth on Hercules Florence, pioneer of photography, came up as a consequence of research work which I began in 1972, in an attempt to compile a history of photography in Brazil, by tracing its chronological development.

The role of Hercules Florence as one of the pioneers of photography is still a relatively unknown fact outside Brazil, although I have dealt with the matter previously in several publications, which, unfortunately, have not been widely circulated abroad. However, specific cataloguing is continuing, and I feel that we have now accumulated sufficient material to justify publication of the research.

According to existing manuscripts, photographs, and historical data, pre-Daguerreian experiments were carried out by Hercules Florence in Brazil, in Sao Carlos Villa (today known as Campinas) as early as 1832.

On August 12, 1973, I published an article on the Photography page of the Literary Supplement of the newspaper O Estado de Sao Paulo under the title "Hercules Florence, pioneiro de fotografia no Brasil" [Hercules Florence, pionear in photography in Brazil] with illustrations of the first experiment conducted by Florence, using rather primitive methods, in which he photographed, on a sheet of paper coated with silver nitrate and under the action of sunlight, certain images in a home-made camera obscura.

On October 18, 1975, my article entitled "Panorama de Fotografia no Basil desde 1832" [Panorama of photography in Brazil since 1832] appeared in a special edition of O Estado de Sao Paulo in its Centenary Supplement. Touching on the role of Florence in referring to photographic pioneers in Brazil, I concluded by saying: "The progress of this research work culminated in an isolated discovery that was made between 1832/33, a fact that has not yet been given due recognition."

French-born Hercules Florence was gifted with an inventive genius par excellence, which led him to a series of discoveries during the fifty-four years he lived in Brazil. Always depending on bare minimum working conditions, some of his inventions had a curious chain reaction, since they developed more likely than not as a consequence of the limited elements Florence had to work with. Such was the case of the impasse at which Florence arrived when he decided to reproduce many copies of his studies on animal voices (which he called Zoophonie). Since there was only one printing press in the province of Sao Paulo, he found himself faced with the necessity of inventing his own printing process, for which he carried out a great deal of research, making continual improvements — he christened the process poligraphie. Next, still working on the printing process, one day he came up with the idea of utilizing sunlight for this purpose, thereby discovering the photographic process, which he called photographie, a term that naturally occurred to him.

The history of all his inventions is not the aim of this work, but I believe it to be important to mention them, in order to convey an idea of the creative and scientific personality of Florence, as well as to show that the time in which he lived was not particularly propitious for him as an inventor. Within my proposed objective, which is limited to his photographic achievements, I will comment upon his experiments, noted in his handwritten diaries, excerpts of which are reproduced in transcription, in French, in the appendix.

The Manuscripts of H. Florence

The existing manuscripts which form the basis for the development of this study consist of three small volumes: Manuscript I*, entitled "Livre d'Annotations et des premiers materiaux," which contains 359 pages and measures 22x16.5cm; Manuscript II, entitled "Deuxième livre d'Annotations et des premiers materiaux," which has 185 pages and measures 21x16cm; and Manuscript III, entitled "Troisième livre d'Annotations et des premiers materiaux" which has 115 pages and measures 22x15.5cm.

There is still another larger manuscript volume of 423 pages, measuring 30.5x21cm, entitled "L'Ami des Arts livre à lui-même ou Recherches et découvertes sur différents sujets nouveaux" and a smaller volume entitled "Correspondence" of 170 written pages, measuring 21x15.5cm, in which Florence copied some of the letters he sent out.

In these volumes appear notes, conjectures,

*The dates noted on the cover of each manuscript: I, 1829; II, 1836; III, 1840; "L’Ami des Arts . . ."; 1837.
a sequence of scientific process reports such as "Voyage Fluvial du Tiete à L'Amazone" with beautiful illustrations, and some personal writings in which he airs his feelings, such as the impressive "L'Inventeur en Exile," which covers 150 pages of the big volume.

In all the manuscripts we find information, notes and deductions about his various inventions. However, in Manuscript I are the records of his day-to-day experiments.

The great manuscript which Florence entitled "L'Ami des Arts livre à lui-même ou Recherches et découvertes sur différents sujets nouveaux," dated 1837, condenses his notes about his inventions, among others, poligraphie, photographie (or imprinting by sunlight) and fixing the images in the camera obscura, studies of the sky, the ninth hydrostatic, research on animal voices (zooophonie), etc., ending this volume with the beautiful diary of the scientific expedition under the command of Baron von Langsdorff.

On pages 42 to 79 of this manuscript, Florence describes his discovery of photography.

Fortunately, all this material, today in the possession of his great-grandson, Arnaldo Machado Florence, is in a state of good preservation, thus making the continuation of our research possible.

The Inventor's Youth

In March of 1824, after a forty-five day voyage from Europe, the sailing ship Marie Thereze, under the command of Frigate Captain Du Campe de Rosamel, anchored in the Bay of Guanabara at Rio de Janeiro. On board was young Antoine Hercules Romuald Florence, twenty-one years old, a native of Nice, who, at the invitation of Captain Rosamel, had come to America.

A painter by profession, young Florence, since his early youth, had expressed a desire to travel and see the world. He was the son of Arnaud Florence, an eminent surgeon in Bonaparte's army, and of Augustine de Vignallys, of noble descent.

His sensitivity to the arts had been obvious from childhood. However, his interest in the sea and his curiosity about travelling had been growing ever since he was sixteen.

He had done remarkably well in his studies of mathematics and physics, developing at an early age ideas and projects that showed the

self-discipline which was to be so useful to him in the future. He devoted himself to painting, not only serving to occupy his mind, but to put some money in his pocket.

Upon landing in Brazil, Florence obtained employment with a Frenchman, the owner of a dress shop, M. Pierre Dillon. He worked for him for almost a year, but, reaching the decision that that type of work was not for him, he found another job in the printing shop-bookstore of another Frenchman, M. Plancher, the founder of the newspaper Jornal do Comercio of Rio de Janeiro.

He had been working there for four months when a neighbor showed him a newspaper ad reading "A Russian naturalist, having to travel to the interior of Brazil, needs a painter. Qualified candidates may call at the Russian Consulate."

The Langsdorf Expedition

Florence immediately contacted Baron von Langsdorff, the consul general of Russia, who was to head the expedition, and who accepted him as second painter.

The first painter was to have been Rugendas, who eventually gave up the job, and was replaced by Amado Adriano Taunay.1

The scientific expedition had the following persons as the intelligentsia of the group: Baron Georg Heinrich von Langsdorff,2 head of the expedition; Ludwig Riedel, botanist; Nestor Ruzhov, astronomer; Christian Hasse, zoologist, who, however, did not get to embark; Amado A. Taunay, first painter; Hercules Florence, second painter.

There were also a large number of slaves, and an additional member of the party whose presence was remarked upon in a gossipy passage narrated with much relish by the Viscount de Taunay,3 The story appears on page 78 of the Ensaio Historico e Literario [Historical and Literary Essay], 1900, by Estevam L. Bourroul,4 main biographer of Florence.

The expedition which had the Emperor Alexander I as its patron lasted for almost four years. It set out on September 3, 1825, from Rio de Janeiro and stopped over for a few months in Porto Feliz, S. Paulo, where the group made their final preparations for the long trip. There Florence met Maria Angelica Alvares Machado e Vasconcellos with whom he fell in love.

In June, 1826, the expedition entered the jungle and after covering 2,240 leagues (13,440km) returned to the capital of the empire on March 13, 1829.

This expedition is the subject of a marvelous report to be found in the manuscript of Florence's diary "L'Ami des Arts livre à lui-même," full of daring deeds and adventure, and of estimable scientific value.

Florence also wrote a separate report of the expedition: Some eighty-two pages under a title which translates into English as "Outline of a journey made by Mr. von Langsdorff to the interior of Brazil from September 1825 to March 1829."

Upon his return, Florence gave this report to the Taunay family because they had lost their relative Amado Adriano Taunay, who drowned while trying to ford the Guapore River. The report was translated and published forty-six years later by the Viscount de Taunay in the Quarterly Magazine of the Historical and Geographical Institute of Brazil, vol. XXXVIII, in 1875. However, the original manuscript which appears in Florence's diary, is only now being transcribed and translated by his great-grandson Francisco A. M. V. Florence.

After the expedition, Florence married Maria Angelica, the daughter of Dr. Francisco Alvares Machado e Vasconcellos, and they went to Campinas (Villa S. Carlos) to live in the year 1830.

Previous Inventions which led Florence to Experiment with Photography

The result of his observations concerning the sounds made by animals, of which he took note during the four years of the expedition, was one of Florence's first scientific essays, "Recherches sur la voix des animaux, ou essai d'un nouveau sujet d'études, offert aux amis de la nature."

At that time, there was only one printing press in S. Paulo, and one newspaper, O Farol Paulistano, which was printed in its own type-shop. Hercules found there were many obstacles in the way of his publishing his Zoophonie so he began to search for a different method of printing, and in 1830 discovered a totally new method to which he gave the name of polygraphe.

According to E. L. Bourroul (op. cit.) in 1831, Florence at R. Ogier's print shop, Rua da Cadeia 142, Rio, published a booklet of sixteen pages
studies on "polygraphy." In his manuscript "L'Ami des Arts . . ."; Florence commented on the background for his studies on "polygraphy."

Having had the desire in 1830 of publishing a memoir on the idea of making the voices of animals a new object of the study of nature, and being in a country where there is no printing press, I realized how useful this art would be if it could be simplified in its apparatus and processing, so that everyone would be able to print as much as he needed, I therefore dedicated myself to the study of the art of printing with the few books I then possessed, and discovered that lithography, which can become the more generally used, still employs very heavy stones, voluminous and expensive; that its process is still very complicated and requires material which can be found only in big cities. Engraving requires very well polished "planches en cuivre," which are expensive, and at the same time cannot be found in all places. Because of its big apparatus, the art of typography is still out of reach, quite beyond someone in my circumstances.

I dedicated myself, therefore, to research work, which led me, gradually, to a discovery whose usefulness has already been proven to me over the last five years of experimenting, giving me two great advantages, that I had not expected: first, the board (planche) inked only once for all the printing; and second, the simultaneous imprinting of all colours. ("L'Ami des Arts . . .", p. 12).

A detailed description of the process of poligraphie, is to be found in his manuscript "L'Ami des Arts . . ." on pp. 12-39.

The fact that the invention of poligraphie, a process that utilized a kind of stencil device for printing, was met with general indifference was probably Florence's first great disappointment. Nevertheless, he tried many different ways to publicize his poligraphie. In 1831, M. Edouard Pontois, Chargé d'affaires of France in Brazil, with whom Florence had already dealt, sent a report to his government in Paris with a complete description of the process and two "poligraphic proofs." In 1839, the newspapers A Phenix and the Observador Paulistano published several articles with complete information on "polygraphy." In 1840 Jornal do Comercio of Rio de Janeiro transcribed the articles from the Phenix and announced that twenty-two "poligraphic proofs" had been placed on public exhibition. In 1843 the Academy of Science and Arts of Turin, Italy, declared that his invention was something new, and that despite its pros and cons, it deserved the support of the Sardinian government. In 1843, Florence was honored by a tribute from the Academy of Fine Arts in Rio de Janeiro.

On pages 62, 63 and 64 of Manuscript III, as seen in the corresponding transcription from the manuscript, Florence notes in his diary on December 5, 1852, his dislike for Lipman's invention in 1848, which is "polygraphy" itself, and with which he had already obtained success seventeen years before (in 1831) and that from 1834 on, he had been printing perfectly and simultaneously in all colors.

The scientific establishment, diplomats and the press praised his invention, but nothing positive resulted in the way of financial compensation or protection rights for the inventor.

Going back to the inventor side of Florence's personality, as we can see he was spurred on by the difficulties he encountered in trying to invent "polygraphy," and, to quote his own words, the process "was born of a structured and premeditated calculation." (Bourroul, op cit., p. 459.)

**Photography**

Bourroul makes some superficial comments about the invention of photography, although transcribing certain ambiguous statements regarding it, made by the Viscount de Taunay in his preface to the 1877 translation of Zoophonie.

In the magazine of the Paulista Museum, vol. IV, 1900, on page 167, there is a passage in an article written by Dr. Jose de Campos Novaes, containing the following reference to photography: "... The documents about the latest scientific discovery, one of the most useful of our nineteenth century, made in Campinas by H. Florence and completed through highly subtle chemical manipulations by J. C. de Mello, are in the possession of his grandchildren who should give them the publicity they deserve. They have not claimed the invention publicly, since it coincided with an identical discovery by Daguerre and Niépce in France. . . ."

On June 26, 1948, Arnaldo Machado Florence, who, as the keeper of the estate of his forefathers, is in possession of manuscript diaries and other documents, gave a lecture in the Public Library of S. Paulo, about the life and works of H. Florence, accentuating his pioneer effort in photography. Bulletins 27 and 28, published by the Foto Cine Clube Bandeirante (July and August, 1948) printed the above mentioned lecture, with a preface by Dr. Eduardo Salvatore, president of that body.

As I mentioned in the introduction to this paper, I published several articles about Hercules Florence, giving as many details as possible in order to capture the historical and cultural era in which Florence lived, and to pinpoint his position as an independent, isolated inventor of photography in 1832/33. However, his original manuscripts offer us much more in the way of substantiation, and I found it useful to present the sequence of the evolution of his reported experiments which led me to writing this paper based on the data furnished in his own diaries.

My main purpose in this study is to try to locate the first reference to photography made by H. Florence still in the year 1832.

So from a narration of the discoveries and research work supplied to Dr. Manuel Ferraz de Campos Salles under the title "Noticia sobre os meus trabalhos científicos e artísticos feita a convite do Dr. M. F. de Campos Salles" [News about my scientific and artistic works made at the invitation of Dr. M. F. de Campos Salles] dated July 26, 1870 (written in Portuguese) cited by Bourroul, op cit., pp. 459, 460, the following description follows:

*I will not let the incident pass without comment, and that is that in 1832, without even thinking about it in advance, the idea of printing with sunlight came to me. I obtained several negatives, among them one of the jail house of Campinas*; I distributed 30 ad-

*Author's note: He kept this view of the jail inside a book to avoid the effect of light and it was still perfect fifteen years later, according to Bourroul's affirmation. However we cannot be precise as to the date of this photograph.*
That we located in his manuscript diary "Correspondence" in the specific passage in which Hercules Florence deals extensively with photography; however, there is one doubtful point to be clarified:

"Je ne passerai pas sous silence un incident qui a commencé en 1833. L'idée me vient un jour, c'était le 15 Aout, que l'on pourrait fixer les images dans la chambre obscure. . ."  

We see in the manuscript, reference in letters to the year 1832 and Florence's first contact with photography. Although the idea, as we see, had come to his mind in 1832, it was only in 1833, on January 15, that the first records were noted down concerning it.

In the following paragraphs, I have tried to make a short summary, to indicate his more important conclusions and discoveries in the field of photography.

It was first Joaquim Correa de Mello, the botanist and druggist who, announcing to Florence the properties of silver nitrate, gave him the first impetus for the unraveling of the chain of subsequent facts.

Drawings and diagrams of his camera obscura give us an idea of his equipment the description of which appears on p. 59 of the manuscript "L'Ami des Arts. . ."

Florence's search became intense when he set himself to work for a definite end. After his first results, when he used silver nitrate as the solution for creating a sensitive surface, Florence began to experiment with other chemical substances that in one way or another would give better results after light had acted upon them. Narrating his first experiment (January 15, 1833) he mentioned his first problem, that of the change of the background color of the image he obtained, the white becoming gray or darker in tone after it had been washed and dried by sunlight.

Next he speaks of a second problem, connected to his getting a reversed image. On p. 58 of the manuscript "L'Ami des Arts. . ." Florence writes the following, which is a definition of the negative itself:

By placing a paper that has been wetted in the camera obscura, by a solution of silver nitrate, the objects on it are reproduced, but with the inconvenience that the parts that should be clear become dark and vice versa. From this it can be seen that, if because of the inconvenience in question, my investigations still held poor results, it is none the less true that I have obtained lines, forms and contours, harmonious between themselves, without the help of the human hand.  

Curious is his observation about the difficulty in obtaining a final image on paper, identical with the original subject. This problem showed the need for the performance of two operations. A description of this can be found on p. 132 of Manuscript I as well as a write-up on the photographic portrait and additional considerations on the reverse of p. 133.

Because of his background, Florence was always attracted to drawing and painting. He had an inkling of the progress that would be possible for the visual arts through the application of the photographic process and the perfection with which all subjects could be reproduced, especially drawings, and this is what motivated him to devote more and more effort to the improvement of his invention.

In his own words (Manuscript I, reverse of p. 133 — January, 1833) he gives a description of a process we could call negative-positive:

I decide to draw on a glass pane, "à la manière naturelle." I will take a copy with sunlight on another glass pane previously covered by me with a layer of silver nitrate of complete transparency; there will be the drawing, but in such a way that the white tones [clairs] will appear in place of the darks, and vice versa: I will then wash the glass to avoid having that which must not be dark appear as such, and I hope that the water will not remove what is colored, since it did not erase it on paper.

Then I will put sheets of paper under this glass and will have the copies from nature [au naturel].

Once this had been established, Florence began to make copies or printings of various subjects obtained from the matrix or negative.

In different parts of his manuscripts, Florence describes a way of multiplying writings and drawings through printing by sunlight, as in the

*Author's note: vara and covado are ancient units of measurements of length.
As I mentioned before, Florence devoted himself to searching for new chemical substances in order to find new bases for further research and in order to perfect his invention.

Since there were no scientific institutions in the area in which he lived, and as he so often remarked, he was so far away from any cultural or scientific centers that could have given him some recognition or glory, Florence worked alone from 1833 developing his studies in the field of photography.

It is worthwhile to note that Florence was not discouraged by his working conditions in the midst of the Paulista hinterland. He continued to experiment using submuriate of mercury, phosphorus, prussic acid, oxalic acid, oxilate of mercury, silver oxilate, chloridric acid, hydrocyanic acid, silver chloride, silver bromide, muriate of silver and dozens of other substances and chemical combinations and drugs, describing their properties and effects when exposed to light, as we see in his scientific diaries.

On April 8, 1833, in Manuscript I, on p. 141 and under the heading of “Interesting Findings,” Florence describes the use of nitro-hydrochloride of gold. Then explaining that by combining nitric acid with muriatic acid in equal proportions and pouring a small quantity of gold powder over the mixture, by wetting one side of the paper with the resulting solution (in this case he used a sheet of stationery), a sensitive emulsion would have been formed. Next, if this paper were placed in sunlight, taking care to cover part of it with an opaque object, the surface reached by the light would darken. Then, wetting the paper in urine for fifteen minutes and drying the excess with a cloth, putting it back in the sunlight for a few hours, he obtained a result that he considered to be very satisfactory: the white part that had been protected by the opaque object never altered.9

The combination of gold chloride and urine (p. 48 of “L’Ami des Arts. . .”) seemed to him to be most satisfactory because of the quality of the “printing” obtained: “I printed by means of photography, drawings as clear, as delicate as the finest engraving.” Florence captured the images by the effect of light alone on the light sensitive surfaces (no chemical development) in a way similar to printout papers.
Throughout his manuscript the reader will keep running across the names of famous chemists and their theories: everything that could possibly be of interest to Florence was reproduced. We thus find references to Berzelius, Saussure, Fourcroy, Ritter, Wollaston, Gay-Lussac, Laugier and many others.

Florence describes the use of substances that sensitize wood and textile. He is even prophetic in describing the solidifications of bodies through the effect of light, which would lead to obtaining images in relief through the use of gases in the interior of the camera obscura.

In the same way he also investigates the possible formation of images through the action provoked by the presence of hydrogen and chlorine in the interior of a vase (p. 165 of Manuscript I). Nor did he neglect to make predictions based on the principles established in the spectrum, about color photography (still in 1833). Up to the present time, I am not quite sure whether or not he used hyposulphite in the fixing of his photographs. However, he noted in Manuscript II on p. 50, the following reproduction of the words of Berzelius:

"Hyposulphite can be recognized by the fact that it dissolves recently precipitated silver chloride or if it becomes sweet tasting." He also notes that "If the formiates are mixed with silver nitrate, and we heat the solution slightly they reduce silver."

And finally, Florence notes the following (Manuscript II, p. 67):

I discovered a way to keep the proofs from darkening: add a layer of silver nitrate to the paper and allow it to dry in the dark; dip it in a solution of water and table salt, and allow it to dry in the dark; pass liquid caustic potash over it and allow it to dry, but always in the dark. Print in the sunlight, wash with spirits of ammonia.

This experiment has been made and confirmed by the Rochester Institute of Technology with very good results.

The texts in the appendix are the transcription of his manuscript diaries in French, done by one of Florence's great grandchildren, Mr. Francisco Alvarex Machado e Vasconcellos Florence, who was, without a doubt, the most qualified person to do the translation since he is familiar not only with the subject but with Florence's handwriting.

Besides the manuscript diaries, from which I extracted the data and notes on the discoveries in photography, there are still in existence some photographic documents and drawings by H. Florence of an estimable importance in the history of photography. They are reproduced in the following plates:

1) Drawings (measurements: 19x20.5cm) of his camera obscura and other accessories for copying, which illustrate the description contained on p. 59 of the Manuscript “L'Ami des Arts...”

2) Photographic reproduction (contact print) of a “Mason's Diploma" (measurements: 29x20cm). This print shows against light a water mark of the original paper dated 1829.

3) Photographic reproduction (contact print), measuring 29.5x20.7cm, of pharmacy labels, which Florence mentions in his manuscript “L'Ami des Arts...” on p. 54 in the chapter “Avantages,” and Manuscript I, p. 150 (August 26, 1833) in the chapter “Avantages.”

I consider it apropos to mention two articles...
that came out in Brazilian newspapers soon after the news of the discovery of photography, as it was announced in Paris.

The first one is an article in which H. Florence reveals his position with regard to his being a pioneer in polygraphy as well as in photography. Published in the newspaper Jornal do Comércio of Rio de Janeiro on December 29, 1839, it transcribed the material published in the Sao Paulo newspaper Phenix, dated October 26, 1839, and bears the editor's title:

The readers may compare dates and decide for themselves whether the world owes the discovery of photography or at least polygraphy to Europe or to Brazil:

"For nine years I have been working on this new method of printing and for more than six years I have done it here in this town; I have also filled orders from the Capital and from other parts of the province. So my discovery is well known to the people of Sao Paulo. Even in Rio de Janeiro, some people of high public rank, some distinguished artists, and some famous business people, have been informed that I invented Polygraphy and if it were really necessary I could give the names of many respected persons. I have not given wide publicity to this discovery, because I wanted to perfect it, and it is quite clear that in this Villa of S. Carlos I had need of resources to make quicker progress. Sennefelder had to work for many years without any personal profit, facing poverty in Germany, which has so much to offer, and lithography took seventeen years to get from that country to France.

"Polygraphy is already a confirmed fact, which the arts are going to adopt. The proof is, as I have already said, that for six years I have used it in printing for the public in this province.

"I have strong reasons for making this declaration. Moved by principles I deem it unnecessary to declare, I have not kept my process a secret from people worthy of my confidence. I have been surrounded by difficulties here: in moments of total discouragement I felt as if my process would end by destroying me: I wanted to launch it among the artists and a text containing a full description was taken to Paris last year by a kind person who has done me the favor of appreciating my invention.

"Another briefer descriptive text was sent in 1831 with M. Pontois. Fearful that these writings might fall into the hands of those who would appropriate the discovery as their own, and it being only fair that at least the basic idea which gave it birth be publicly acknowledged as belonging to its rightful owner, I am impelled to make the above declaration to the public.

"Another of my discoveries also known in this town, as well as by some people in Rio de Janeiro is photography: the text sent to Paris carried two titles at the end: 'Discovery of photography or printing by sunlight' and 'Investigations into the capturing of the images in a camera obscura by the effect of light.' A photographic drawing I had made was presented to the Prince de Joinville and put in his album by a person to whom I am indebted for this favor. I have just been informed that in Germany they have printed by light, and that in Paris they are doing very well at capturing images. As I have done very little with photography because of a shortage of more sophisticated conditions and for lack of a better knowledge of chemistry, I will not dispute the discoveries with anyone because two people can have the same idea, because I always found the conclusions I reached to be somewhat shaky, and to each his own: but I make this declaration with regard to polygraphy which has such beautiful properties that its inventor may be known for all time."

On February 10, 1840, the newspaper Jornal do Comércio, referring to H. Florence's declaration which had been published on December 29, 1839, took up the subject again:

Today we have more data than we had at that time, so that we are able to settle the question in favor of Brazil.

The reasons that led us to make this de-

*Author's note: The person to whom Florence refers as being the one to whom he owes the favor of having placed a photograph in the Prince de Joinville's album was Felix Taunay, director of the Academy of Fine Arts in Rio. The Prince de Joinville was married to D. Francisca, daughter of D. Pedro I, and sister to the heir to the throne of D. Pedro II. The Prince de Joinville was himself the son of King Louis Philippe of France. The photograph that was presented to him was a photographic reproduction of a drawing (portrait) of a Bororo Indian (made by Florence).

Epilogue

Florence, from 1832 on (with the assistance of Joaquim Correa de Mello) had it in his mind that the use of silver nitrate would be the ideal solution for creating a sensitive surface. And as soon as he realized this, he began to record in his diaries the effect of light upon silver nitrate and in January, 1833, Florence obtained a negative and entitled his invention photography.

What is intended in this work is only to add one more chapter to the history of photography with regard to its early beginnings, which are
practically unknown and of an importance that speaks for itself.

According to Florence: "I will not dispute my discovery with anyone because two people can have the same idea."

Although a succession of disappointments pushed him to the point of self-deprecation, when he said (after hearing about the discovery of photography in Europe) that other inventors had attained better results, it is up to the readers and researchers to make the final judgment in the face of the evidence presented herein.

One fact must be recognized—that the scientific isolation in which Florence lived, described so well in certain passages of his manuscripts, was the factor that determined his scientific and creative extermination insofar as his inventions never received any recognition.

However, there are definite proofs that Florence was the first in Brazil and in the Americas, so this must be accepted as a fact.

I fervently hope the sequence of his research, as has been demonstrated, ending in his independent discovery of photography in the villa of S. Carlos, S. Paulo, Brazil, between 1832/33, has finally emerged from obscurity.

Notes

1. Amado A. Taunay (1803-1828), a French painter who together with his family, came to Brazil in 1816 as a member of a French Artistic Mission.
2. Baron Georg Heinrich von Langsdorff (1774-1852), medical doctor, graduate of the University of Gottingen, accompanying the Prince of Waldeck to Portugal (at the age of 23) where he introduced the use of vaccine. He was part of several scientific expeditions and published observations from many undertaken after he left the U.S. in 1804 a 1807; Plantes recueillies pendant le voyage des russes autour du monde de 1810 a 1813; Memoire sur le voyage de 1829 [Outline of a voyage made by Mr. Langsdorff in the interior of Brazil, desde Setembro de 1825 ate' Marco de 1829] in the magazine of the Historical and Geographical Institute, vol. 38, 1875.


3. When Florence published his second paper in February 1839, the word "photography" since the major role is performed by light.

4. In the margins of his text, Florence noted titles referring to the subjects presented in it. The title "Photographie" [Photography] in the preface of the re-edited work "Outline of a voyage made by Mr. Langsdorff in the interior of Brazil..." published in February 1839 in the magazine of the Historical and Geographical Institute, vol. 38, 1875.

5. Florence made the following comment on the use of the camera obscura in "L'Ami des Arts..." p. 59: "The action of the light drew for me the objects in the camera obscura, but I noticed some contradictory contrasts, but with the imperfection that the lighter parts become darker and vice versa. In spite of this fact that it is said to be made by nature and not by our hands, putting aside its actual precariousness, is this new fact in the Arts, not really interesting? Is it not better to prefer it?"

6. Florence presented a careful report in "L'Ami des Arts..." concerning the use of gold in his printing process. The printing was made by contact with a paper coated with a gold chloride layer, and then washed in sun light, with a drawing on a glass plate, and then washed in urine and water for fifteen minutes. According to Florence, Manuscript I, p. 9, (reverse) the usage of the noun "photographie" as well as the noun "photographie" in Portuguese, which appears in his photo of pharmacyustat. In printing, they were not convenient for they absorbed too much chloride. The use of gold chloride as a light sensitive material was confirmed by experiments at Rochester, New York. (see note 3).

7. In 1837, in "L'Ami des Arts..." p. 51, Florence described the properties of silver chloride, its insolubility in water and solubility in caustic ammonia (ammonia hydroxide), which stated his perspective, that his chloride would be dissolved while the print was not altered by the light. However there was the inconvenience that the ammonia altered the drawing, making it very light.

Appendix

MANUSCRIPT I "LIVRE D'ANNOTATIONS ET DES PREMIERS MATERIAUX"

Le 20 Janvier. Dimanche 1833. Découverte tres importante. Ce que j'ai dit dans l'article précédent du 15, visiblement d'une importance tres heureuse. Premier Exp. J'ai fait trois irremédiablement une chambre obscure, avec une petite caisse; je l'ai couverte de bibliotheque jaune, et rempli de différents chiffons et de tissus, de diverses couleurs et de toutes sortes de matériaux. J'ai ensuite gardé, j'ai jointe au tableau une lenteur qui avait appartenu a une lorgnette (ces détails sont pour montrer la précocité des moyens). J'ai place le papier a la place des chiffons et l'ai recouvert de papier au troisième chiffon, d'une manière convenable, un morceau de papier qui avait été imbibé d'une dissolution faible de nitrate d'argent. J'ai place cet appareil a la place du chiffon et je l'ai fait tremper dans une solution de nitrate d'argent..."
le nitrate d'argent; ce qui était déjà noir, ne perdit rien
de son intensité au soleil, pendant une heure; ce qui
était bleu se décolora, sans changer sa nature, mais
jAMAIS pour faire disparaître le dessin.
Or, il ne manqua plus qu'à trouver le moyen d' em-
ployer que ce qui est blanc se ternisse de la moindre
des choses, et faire que ce qui est obscur dans l'
objet, reste obscur sur le papier; nous allons bientôt y
songer, mais traitons de la deuxième expérience, qui
pratiquement est bien plus concluante.
Je dirai, pour une satisfaction à moi particulière, que
ce n'est pas cette expérience-ci qui est la première
parce que je l'ai faite avant l'autre.

JANVIER 1833, p. 133

J'ai propo5e de dessiner sur un verre à la manière
naturelle; je tirerai une copie au soleil, sur un autre verre
et là j'aurai ce que je désire, sans qu'on puisse voir
ni de planches en cuivre ou en bois, ni de papiers
liographiques, et enfin, rien de tout ce qui est en
un devoir dans tous les arts d'imprimerie que l'on connait
jusque à ce jour.

Avantages de cette découvrette:

1) Lorsqu'on a la gravure et la lithographie exigent un
appareil trop compliqué, trop lourd et trop volumineux,
pour qu'un voyageur puisse s'en servir. Les imprimeurs
portent une masse de gravure, et qui ne me servent
pas. La lithographie, d'ailleurs, n'y a pas d'impriméries
de quelqu'un des genres cités; on est
privé des moyens de publier un écrit ou un dessin. Le
photographie exige un appareil trop compliqué, trop
lourd et trop volumineux, pour qu'un voyageur puisse s'en
servir. Les imprimeurs portent une masse de gravure,
qui ne me servent pas. La lithographie, d'ailleurs,
n'y a pas d'impriméries de quelqu'un des genres cités; on
est privé des moyens de publier un écrit ou un dessin.

2) On écrit ou dessine en sens naturel, avec la même
cheminée, que l'on emploie pour faire soi-mème?

3) On peut donc servir pour différentes personnes et pour
différentes choses.

4) On peut n'imprimer qu'au fur et à mesure de la
vente; ou de l'émission, sans que jamais il soit besoin
da livager d'une nouvelle, lorsqu'on cesse ou
reprend le tirage; la planche se conserve toujours la
précision, et on peut la réutiliser dans la même
imprimerie pourront seules donner toute leur valeur,
de la même manière que l'on peut réutiliser les
mêmes chiffres de cette découvrette.

Comme toutes les découvertes à leur berceau, celle-ci
présente des inconvénients: ils sont même si grands, que
mes amis m'en ont fait une objection; ils sont autant de
disparités que le vient de les imprimer en couleur,
auxquels les personnes entendues dans les arts d'im-
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