

micro PHOTOMECHANICS #1

Alfred Donn  and the “daguerreotype theory” in practice

The first daguerreotypists emerged in the weeks and months following the publication of the daguerreotype process, along with theoretical disputes regarding the principle of the creation of the daguerreotype image. In addition, paths were sought of how to turn a mere curiosity which deservedly captivated by its “perfection”, detailed drawing and refinement into a practical tool, possibly of science and art. One of those who almost immediately became involved in all three areas was Alfred Donn  (1801–1878), a physician and bacteriologist from Paris. Despite the fact that he was probably the first to present to the public the evidence of the use of the daguerreotype plate as a graphic matrix, he is only mentioned sporadically in the history of photography, most typically as the co-author of the illustrated Atlas for the publication [*Cours de Microscopie compl mentaire des  tudes m dicales*](#).¹

Today, the name Alfred Donn  is far better known in the context of the history of medicine, be it in connection with the discovery of leukaemia, blood platelets and *Trichomonas vaginalis*, the invention of the lactoscope or with the development of haematology, neonatal care, sanitation, public healthcare, or microscopy. Donn  demonstrated the potential of the microscope in medicine many times in front of the specialists and lay public, from the onset of his medical career, and later took part in its technical advancement.²

The microscope became the prerequisite for Donn ’s achievements in the daguerreotype. As early as September 1839, he took part in a theoretical polemic in the French Academy of Sciences, about the principle of the origination of the daguerreotype image, which the manual for the production of daguerreotypes published on 19 August 1839 did not in any way elucidate. Like many times before, Donn  did not hesitate to oppose the authority of Fran ois Arago (1786–1853), or more precisely, his chemical explanation of the “daguerreotype theory”. At a session of the academics on 16 September 1839, this “determined adversary of Arago”³ demonstrated his physical theory according to which the effect of mercury vapours and light resulted in the change of the mechanical structure of the silver layer: the parts of the iodine-silver layer which had been exposed to light lost their original homogeneity and adhesion, became powdery and as such could be easily wiped off. Donn  arrived at his theory on the basis of continuous microscopic observations of a metal plate and emulsion in the course of the production of daguerreotypes and afterwards, and although it later

¹ Alfred Donn  – L on Foucault, *Cours de microscopie compl mentaire des  tudes m dicales : anatomie microscopique et physiologie des fluides de l’ conomie*. Atlas ex cut  d’apr s nature au microscope-daguerreotype, Paris 1845. Graphic illustrations were made after [daguerreotypes](#) created by L on Foucault (1819–1868).

² He designed, for example, the pocket microscope and together with L on Foucault introduced in 1844 a new model of the projection microscope with electric lighting. See especially William Tobin, Alfred Donn  and L on Foucault: The First Applications of Electricity and Photography to Medical Illustrations, *Journal of Visual Communication in Medicine* 29, 2006, no 1, pp. 6–13. – A.[Alexander] L. Thorburn, Alfred Fran ois Donn , 1801–1878, discoverer of *Trichomonas vaginalis* and of leukaemia, *British Journal of Venereal Diseases* 50, 1974, pp. 377–380. – Andr  Bertrand, La vie multiple d’Alfred Donn  (1801–1878), *Bulletin de l’Acad mie des sciences et lettres de Montpellier* 28, 1997, pp. 99–113.

³ Fran ois Brunet, *The Birth of the Idea of Photography*, Toronto – London 2019, p. 69.

turned out to be erroneous in principle, the microscopic observation itself was actually highly accurate.⁴

As Donné himself would repeatedly stress, this theoretical reflection at which he arrived on the basis of microscopic observations became the groundwork for his practical experiments: he tried to take the advantage of this drawback, i.e. the vulnerability of the daguerreotype, and with the help of nitric acid to remove the “powdery parts”, or potentially the exposed silver layer, and thus to turn the daguerreotype into a print matrix. He achieved this in a relatively short time. A week later, at another session of the Academy of Sciences on 23 September, he presented the first plates and prints showing, for example, a faun’s head and the human skeleton.⁵ Three weeks later (on 14 October) he submitted for the assessment of the quality of the new reproduction method a matrix and eight prints with the representations of the head of Ariadne (other sources mention a portrait of Antinous), a composition with the motif of the head of the Apollo Belvedere and a “petit écorché”, a reproduction of the bust of the popular mademoiselle Rachel, and finally a microscopic detail of a fly’s eye. Apart from these etchings and prints he also added a daguerreotype portrait after nature, in his opinion “done very well” which he had not engraved yet. Along with this figure he reportedly also created a daguerreotype image of a dead body;⁶ given the length of exposure at the time and Donné’s professional interests, a rather logical choice of model.

The news of Donné’s relative success with the etching of daguerreotypes soon spread, and not only in France and in specialist circles. The inventor himself played a key part in this; apart from many other functions and roles, he regularly transmitted news from the sessions of the Academy of Sciences, in the form of feuilletons which he published for many years in the pages of *Journal des Débats*. Naturally, information was also circulated by the Academy proceedings *Comptes rendus*, from which it was adopted by the editors of specialist yearbooks and anthologies such as Dingler’s *Polytechnisches Journal* or Hessler’s *Jahrbuch für Fabrikanten und Gewerbetreibende*. With only a slight delay the news reached the readers of newspapers and social periodicals, for example, *The Times*, Frankfurt’s *Didaskalia*, *The Athenaeum*, *Leipziger Allgemeine Zeitung*, *Bohemia*, *Wiener Zeitung* and many others. A number of journalists (not mentioning the readers) in September and October 1839 did not know Donné’s prints and matrices from autopsies or at least from reproductions, and what is more, had no experience with the daguerreotype as such. Possible evaluations of quality, the faithfulness of reproduction or the potential of this invention should thus be taken with a pinch of salt. Unfortunately, the quality is impossible to judge even now as no matrices and prints created and presented by Donné at the two mentioned sessions and later at other sessions of the French Academy of Sciences in 1839 and 1840 are known today.

After this wave of mostly positive responses Donné tried for several months to improve and promote his method, among both scientists and artists,⁷ and refused to publicize it, probably in an

⁴ Alfred Donné, Sur ce qui se passe pendant les diverses parties de l’opération, *Compte rendu des séances de l’Académie des sciences*, séance du lundi 16 Septembre 1839, *Comptes rendus hebdomadaires des séances de l’Académie des sciences* 1839, IX, pp. 376–378.

⁵ *Journal des Débats* 24 September 1839, p. 3.

⁶ Alfred Donné, Académie des sciences, Séance du 14 octobre, *Journal des Débats* 16 October 1839, p. 2. – Alfred Donné, Transformation en planches gravées des images formées par le procédé Daguerre, *Compte rendu des séances de l’Académie des sciences*, séance du lundi 14 Octobre 1839, *Comptes rendus hebdomadaires des séances de l’Académie des sciences* 1839, IX, pp. 485–486.

⁷ In December, he initiated a committee assessment of his invention in the Academy of Fine Arts. See Séance du samedi 14 décembre 1839, *Procès-verbaux de l’Académie des Beaux-arts: 1835–1839*, VI, eds. Béatrice Bouvier – Dominique Massounie – Jean-Michel Leniaud, *Mémoires et documents de l’École des Chartes* 75,

effort to achieve the same recognition or compensation as Daguerre. However, he soon gave up these ambitions and published his invention, which in fact proved to be somewhat primitive, at a session of the Academy of Sciences on 15 June 1840.⁸ He reached a conclusion that he had achieved maximum (especially as regarded his printing skills) and also, that his other obligations and duties in the Charité hospital, at university, in his private practice, on the editorial board of *Journal des Débats* and elsewhere did not allow him further involvement in this respect. This is also confirmed by the spectrum of Donné’s scientific interests – apart from bacteriology he then intensively pursued the micro-daguerreotype, microscopy and the potential of gelatine, the last not in terms of photography but nutrition.⁹ However, one of the reasons why Donné abandoned the further refinement of printing from daguerreotypes was probably the fact that as early as April 1840 the Vienna anatomist Josef Berres succeeded in developing a new and more ingenious method, as well as the fact that the technology of the production of daguerreotypes then started to take a new direction which actually clashed with the principle of Donné’s “daguerreotype theory”.

Perhaps the greatest recognition Donné received was the silver medal awarded by the Société d’encouragement pour l’industrie nationale in 1842, “for the part he took in opening the competition for the discovery of ways to multiply photogenic images”.¹⁰ Although the Society acknowledged Josef Berres’s discovery in the very same way, reputedly, Donné himself derived great satisfaction from the fact that “his scientific research showed the possibilities that might be exploited by others, for the sake of art or profit”.¹¹

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2003, pp. 372–373. – Cf. Correspondence, *Compte rendu des séances de l’Académie des sciences*, séance du lundi 15 Décembre 1839, *Comptes rendus hebdomadaires des séances de l’Académie des sciences* 1839, IX, pp. 801–802.

⁸ Alfred Donné, *Procédés de gravure des images photogéniques sur plaqué d’argent* (Extrait par l’auteur), *Mémoires lus*, *Compte rendu des séances de l’Académie des sciences*, séance du lundi 15 Juin 1840, *Comptes rendus hebdomadaires des séances de l’Académie des sciences* 1840, X, pp. 933–934.

⁹ In summer 1841 Donné was involved in experimental research into gelatine, as a potential food replacement for the population living in poverty; during the experiments he even tried to apply pure gelatine intravenously, with dogs, and reportedly “without producing any injury” (*Literary Gazette* 28 August 1841, no 1284, p. 564).

¹⁰ Extrait d’un rapport fait par M. le baron Seguier, au nom d’une commission spéciale, sur le concours pour des perfectionnement dans la photographie, *Bulletin de la Société d’encouragement pour l’industrie nationale* 41, 1842, pp. 124–125.

¹¹ Reproduction par la gravure des images photogéniques, *L’Écho du monde savant* 17 June 1840, no 547, p. 342.