

Historical photographic developers and their chemistry: the Lumière's contribution

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From the time of its invention in the 19th century, Photography was used as an important scientific tool as well as a document whose authenticity would promote the spread of scientific knowledge in society. However, the early photographic techniques were not easy to handle, and it was the discovery of the gelatin silver-bromide emulsion in 1871 by the British physician Richard Leach Maddox (1816-1902) that brought speed and convenience to the use of photography both in science and in other fields. Formation of the latent image was discussed throughout the century with different theories trying to understand the role of the emulsions and of the reducing agents in the development of the photographs. At first the gelatin silver bromide dry plates which came on the market were developed exclusively with pyro-ammonia developer which had been brought over from the collodion process. In Germany Momme Andresen (1857-1951) took part in the successful investigation of organic developers for the dry plates and patented several of these compounds.

In France, Auguste (1862-1954) and Louis (1864-1948) Lumière, better known for the invention of cinema and the autochromes, did a lot of research on photographic methods since the middle of the 1880's. The Lumière brothers and the organic chemist Alphonse Seyewetz (1869-1940) conducted several experiments on this subject in the photochemical laboratory of their dry-plate factory at Lyon. They wrote a series of papers with their results in several prestigious scientific and photographic periodicals on the theory of developer substances, including the study of the role and structure requisites of the organic developers, among them the paramidophenol.

In this work we intend to trace-out the evolution of the different techniques and processes carried out by those researchers giving an emphasis on the chemical interpretation of the role of photographic developers.

Bibliography:

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