

Developments in the History of Photography

The Camera Obscura (a dark room)

The method involved viewing and recording exterior scenes from an interior vantage point. It was a popular medium used by artists in the 17th Century. The set up or procedure was similar to that of a pinhole camera and some Camera Obscuras used a pin hole instead of a lens. The method didn't give very accurate results because the perspective angles were wrong due to the simplicity of the lens at this period of time; this caused distortion of the subject. The camera wasn't very portable either due to its large size! The image would disperse onto a translucent surface inside the dark box-like structure; where it would be traced. In the 1700's the Camera Obscura was reduced to a 24 inch box.

Joseph Nicephore Niepce

Niepce stabilized the first camera image by exposing (using the camera obscura), a metal plate coated with bitumen; this is where the chemistry behind photography began. The plate was then immersed in oil solvent that removed the bitumen that hadn't been affected by light. He called this discovery, "heliography".

Limitations of the discovery were long exposure times and insensitivity of the bitumen; which gave little detail to the image and a blotchy appearance. Niepce despaired believing his method had little purpose or success until he received a letter from a man who had been carrying out similar experiments; Louis Daguerre.

Niepce and Daguerre

Within a year Niepce visited Daguerre in Paris and two years from then in 1829 a ten year partnership was agreed. Sadly, Niepce died four years into the partnership. Daguerre received royalties, from the invention of his former partner, when it was offered to the world.

The Daguerreotype

Daguerre presented a refined version of Niepce's, "heliography" at the academy of sciences in 1839. He managed to shorten exposure time and the quality of image due to the change in the chemistry behind the process:

- Daguerre produced a light sensitive emulsion, silver iodide, by plating a copper sheet with silver and exposing to iodine vapors
- The plate was then exposed inside a camera obscura and developed with mercury vapors
- The image was even fixed in hyposulfite of soda

Sir John Hershel

Hershel, an astronomer and a scientist, has to receive some thanks for discovering that the chemical used of fixing (hyposulfite of soda) would protect an exposed image through time. He gave name to the reversed and re-reversed copy; with the term common to us as the positive and negative image. Hershel also named the light writing process photography.

William Henry Fox Talbot

The British scholar was amazed by The Daguerreotype. Unaware, Talbot had formerly been developing a process that would fix an image of light on to paper. Six years prior to Daguerre's demonstration, Talbot had invented a permanent photographic process.

He coated paper with silver chloride, a light sensitive chemical, and placed objects on the paper then exposed to the sunlight. The chemical emulsion darkened where it wasn't protected from the light by the objects; leaving behind a silhouette (a contact print). In 1841 Talbot patented this process under the name "calotype". The calotype succeeded in ways the Daguerreotype had not: they could be made on paper, they were quite durable, and there was capability for duplication. Daguerreotypes on the other hand, were very fragile and were produced on metal. Two other major differences between the processes are that the calotype gives a negative image and the daguerreotype gives a positive image.

The Collodion Process

In 1851 a solution to the lengthy exposure arrived.

An Englishman, Frederick Scott Archer, had been experimenting with collodion; a chemical combination with tough and transparent qualities. It was originally used to regenerate new skin for burns victims. By coating a glass plate with collodion and silver iodide, exposing and developing immediately the exposure time was decreased.

The Collodion Process requires the use of a darkroom or a light proof tent could be carried to make the process portable. Although it was a quick method of photography, it wasn't ideal to carry around the camera, plates, chemistry and darkroom with you. However, the results obtained were very reasonable. Archer released his invention to the world free of charge.

Colour Photography

James Clerk Maxwell, a British Physician, carried out experiments to discover that a colour image could be produced by photographing and then projecting

three different slides of the same image on a screen. The projected slides also had to be filtered through different coloured solutions. The experiment was a success but regularly viewing many photographs in this way would be ridiculous!

Eastman Kodak

In 1935, Kodak marketed a film consisting of three colour emulsions; all fixed on a single plastic film. Although the processing of the film required precise control, the problem was overcome by customers sending their exposed film rolls to the Kodak factory for development. By 1947, Kodak with help from a German company, manufactured films that could be processed at home. The photographer could now shoot, develop and print in colour with the Kodak Ektacolor System.

Zeiss

In 1949, a Germany company called Zeiss developed the Contax S SLR Camera. It was the first SLR without a reversed image to be seen through the viewfinder; they invented the pentaprism viewfinder.

Polaroid

Polaroid appealed to the public in the 1950's with a simple to use, and more importantly, speedy method of photography. There was no necessity of a darkroom or complicated chemistry. The whole process of capturing and developing took only minutes and was contained in a single lens reflex camera.