**THE BIRTH OF PHOTOGRAPHY, MONOCHROME**

References from the Ancient Greek: – monochomas “having one colour”

Photos -“light” graphein - “to draw” calotype – “beautiful picture”.

In today’s terms, “monochrome” describes paintings, drawings, design or photographs in one colour or shades of one colour.

A monochromatic object or image has colours in shades of limited colours or hues; Images using only shades of grey (with black and/or white) are called grayscale or black and white; however, scientifically speaking, monochromatic light refers to visible light of a narrow band of wavelengths – (spectral colour).

**Computing.**

In computing, monochrome has two meanings: -

1. It may mean having only one colour which is either on or off (also known as a binary image).

2. Allowing shades of that colour, grayscale.

A monochrome computer display is able to display only a single colour, often green, amber, red or white and also shades of that colour.

**Photography History**

In film photography, monochrome is typically the use of black and white film. Originally all photography was done in monochrome until the invention of colour film plates in the early 2oth century: -

1000 ad The first pinhole camera – Alhazan (Ibn Al-Haytham) a great authority on Optics at that time. Aristotle noted (300bc) why the sun could make a circular image when shined through a square hole.

1827 - Louis Dagurre:- Frenchman was experimenting to find a way to capture an image but it would take him another 12 years to reduce exposure time to less than 30 minutes.

1827 - Jospeph Nicephore Niepce made the first photographic image with a “camera obscura” (pin hole).

1829 - Louis Daguerre and Joseph Nicephore Niepce joined forces.

1839 - After several years of experimenting after Niepce’s death, he had developed a more convenient and effective method, naming it after himself – the **daguerreotype.** Daguerre’s process ‘fixed’ the images onto a sheet of silver plated copper; he polished the plate and coated it in iodine, creating a surface that was sensitive to light. He then put the plate into the camera and exposed for a few minutes, then bathed it in a solution of silver chloride; by 1850 there were over 70 daguerreotype studios in New York City alone.

**Negative to Positive Process**

1841 - The Inventor of the first negative from which multiple positive prints were made was by: - Henry Fox Talbot, an English botanist and mathematician and a contemporary of Dageurre.

He sensitized paper to light with a silver salt solution, and then exposed the paper to light, the background became black, and the subject was rendered in gradations of grey. This was a negative image, and from the paper image (negative), then reversed the light and shadows to create a detailed picture; he perfected this paper-negative process and called it a **calotype** , Greek for beautiful picture.

**Wet Plate Negatives**

1851 - An English sculpture: Frederick Scoff Archer invented the wet plate negative, using a viscous solution of collodion, he coated a glass plate with light sensitive silver salts, because it was glass not paper, this created a more stable and detailed negative. However these plates had to be developed very quickly before the emulsion dried.

**Tintypes**

1856 - Tintypes patented by Hamilton Smith, were another medium that heralded the birth of photography. A thin sheet of iron was used to provide a base for light – sensitive material, yielding a positive image.

**Dry Plates**

1879 - The dry plate was invented; a glass plate with a dried gelatine emulsion, these plates could be stored for a period of time, so photographers had no need for a portable dark room. This was the birth of a hand held cameras so to speak, cameras developed more rapidly.

**Flexible Roll Film**

1889 - George Eastman invented film with a base that was flexible, unbreakable, and could be rolled.

Emulsions coated on a cellulose nitrate film base, such as Eastman’s, made the mass produced box camera a reality.

1935 – The birth of Kodachrome

1940 –Commercially viable colour films were brought onto the market, these films used the new technology of dye-coupled colours in a chemical process in which the process connects the three dye layers together to create a colour image.

**Chemical Toning** – Dye toning/metal replacement toning/Sepia and Selenium toning.

This began in the 1880,s sepia was produced by adding a pigment called sepia, made from the Cuttlefish – ‘Sepia Offcinalis’ found in the English channel.

Today most toners work by replacing the metallic silver in the emulsion with a silver compound such as silver sulphide (Ag2S) there are others that can be used

**Digital Toning**

Toning can be simulated either in camera, or the use of filters or by post-processing. For beginners software like Photoshop Elements or other editing software can/will do this for you. More sophisticated software tends to implement sepia tones using the duotone feature. Some photographers like to use filters to change the tones instead of relying on the use of editing software.