

Amateur Photography. #

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One great charm of photography is that it unites in the bonds of friendship men of all countries under the sun — their common helper.

This, of course, is considering photography in its professional as well as its amateur aspect. The latter being free from the money making taint, offers its champions a wide field for experiment and investigation, not possible in the field of professionalism. Indeed, all progress in photography can be traced to the labors of the enthusiastic student of this particular pastime. This fact makes it important that one should study the early history of photography and become familiar with its progress before he can consider himself an amateur in the truest sense of the word. Photography is an evolutionary science. The key to the proper comprehension of the present, lies in the past; and no man can afford to neglect the rich mine of experience which is furnished by the works

of his predecessors.

Therefore we conclude that photography ought to be learned - and taught - historically. None of us should call ourselves amateur photographers on the strength of having "snapped" off a few dry plates - you must work yourself up experimentally along the historical path. Repeat the experiments of the early strugglers and you will learn to appreciate their labors, and will, in consequence, sympathize with them. You will accumulate a vast store of knowledge, and will take up your greener dry plates a thorough master of your trade.

Let us hope that the great increase in the number of photographic societies during the last few years will lead to the establishment of libraries in connection with them, and the formation of small museums in which interesting relics, illustrating some of the old fashioned processes, may be preserved - thus offering better facilities for becoming true amateurs

of photography.

With this short introduction, we will proceed with the history of photography from its origin to the present time.

Photography is the creation of optics and chemistry, intermingled with "gray matter," ordinarily known as common sense. As neither of these sciences reached anything like a thorough development until our present century, we can readily see why the art of taking photographs was unknown to our ancestors. Still, there are many facts that must have been known, even to the ancients, whose meaning if rightly understood, would have led to an earlier discovery of the art of photography. For example, a lens has been found in the ruins of Ninevah, a city which was destroyed more than a thousand years before Christ. Changes produced by the action of light upon matters such as tanning or bronzing human

skin by the sun's rays, must have been noticed. Pliny, (100 B. C.) noticed the fact that yellow wax is bleached by exposure to the sun. The Greeks knew well that the opal and the amethyst lost their luster by exposure to the solar rays.

The alchemists, who were looking for methods for changing the base metals into gold, found that a semi-transparent compound of silver and chlorine could be prepared by adding a solution of common salt to a solution of silver nitrate, and were greatly surprised when this compound, white when freshly prepared, turned black when exposed to sunlight.

In 1727, J. H. Schulze actually obtained copies of writing by placing the written characters upon a card surface previously prepared with a mixture of salt and silver nitrate solution. The rays of sunlight passing through the paper blackened the silver compound beneath, except

when protected by ink, and thus a white copy upon a black ground was obtained. Schulze is called by some, the "discoverer of photography."

Schulze, a Swedish chemist, (1771) noted the action of different colored lights, such as violet, blue, red and yellow, upon silver chloride, and by a series of experiments determined that light alone was the chief agent of the changes observed.

Not until the close of the 18th century, did any one think of applying the changes of color produced by the action of light upon silver compounds to any practical purpose; yet the camera obscura had long been known. It was invented by the Italian philosopher Baptista Porta (middle 16th c.). It consisted at first of a darkened room, to which light was admitted only through a small hole in the window shutter. In such a room, when the sun is shining brightly, is seen a faint inverted image of the external

objects, upon which the window looks. This image falls upon the white surface of a wall or screen within the room. Porta improved the contrivance by placing a double convex lens in the aperture of the shutter, outside of which was a mirror to receive the rays of light and reflect them through the lens. This made the image brighter, more distinct, and the object was shown in a natural or erect position.

The photograph camera is simply a miniature camera obscura, being a well made box with a lens at one end and a ground glass screen at the other.

So much for the blind progress of photography. Let us go forward a few years, and mention, very briefly, its promoters and their work.

In 1813, Joseph Niepce, a Frenchman, discovered what is known as the héliographe process in photography. He produced the first permanent photographs. It was he who first

tried to secure the picture thrown on the screen of the camera.

Niépce and Daguerre finally formed an agreement by which they were to share each others discoveries and the profits accruing therefrom. Daguerre was bold, an energetic and accustomed to the applause of the world. In these particulars, he was the opposite to Niépce. Daguerre, in 1839, completed a process that he had been working upon for years. By it he was enabled to produce perfect images, except for the absence of colors. This discovery, to a certain extent, revolutionized art. It was immediately applied to numberless useful processes, and now the fine arts gained, for the eye, when once educated to the accuracy of the Daguerre pictures, will no longer be satisfied with a bad drawing, however highly it may be colored.

While Daguerre was working out his theories in France, Fox Talbot was advancing toward the

same end in England. He was finally rewarded for his labors by perfecting what is known as the "Calotype" process. It differed from the Daguerrotype process in that paper was the foundation upon which the sensitive solution was placed, while Daguerre used silver plates, following Niepce's example. Talbot salted his paper with common salt, and then brushed one side of the paper twice over with a solution of nitrate of silver. Double decomposition then takes place, and chloride of silver is formed in the pores and upon the surface of the paper; but there still remained some nitrate of silver. It is this combination of the two salts of silver that the increased sensitiveness to light (which he was working for) of the paper so prepared was found to be due. Later on he discovered a way of preparing his paper so the exposure necessary to secure a picture was lessened.

Sir John Herschel, who flourished about the time of Daguerre's discovery, suggested the use of glass plates as a support for the film. His plan was to place his glass plates at the bottom of a vessel containing finely divided silver chloride in water. The salt was slowly deposited in a uniform film on the upper surface of the glass plate, and the water was then siphoned off and the glass allowed to dry. Negatives from these plates were too thin to obtain good prints.

A nephew of Niepce improved the above method by mixing albumen with potassium iodide, potassium bromide, and common salt. The clear liquid obtained was poured upon the glass plates, dried, and heated, until the film became insoluble. It was then sensitized and exposed, while wet, or was allowed to dry. Development was effected by brushing the plate with a solution of gallic acid.

The next important improvement or advance was made possible by the discovery of soluble pyroxyline. This was dissolved in a mixture of ether and alcohol, forming a some what viscid liquid, and which was given the name of Collodion.

When this collodion was poured out on a sheet of glass the ether quickly evaporated and a delicate skin or film was left behind. When dry, this film became comparatively tough and horny. Scott Archer adopted collodion for photographic plates and was so successful in its manipulation that it practically displaced both the Calotype and Daguerrotype, and held sway from 1855 to 1880.

About this time photography began to grow popular. Large numbers of amateurs purchased expensive out fits; but with practice came the sad knowledge that there is no royal road to the taking of good pictures. A thorough knowledge of chemistry, some artistic taste, neatness, accuracy, and other qualifications were indispensable to

to success. Hence, this sudden popularity disappeared as quietly as it had risen; but leaving its effects in the form of photographic societies and journals treating on the subject of photography, which were a great power toward the advancement of the art. It was during this period that the renowned Voigtlander lenses first made their appearance.

Wet plates were naturally inconvenient to handle, especially when the manipulator desired to transport them a distance before using. With this defect in mind, there was a movement toward obviating it. At first, various solutions were experimented with, which had in view the retaining of the moisture on the plate for a longer period. Finally the dry plate came into use, it being found that the chemical action of light was practically as great on dry collodion as on the wet. Following hard upon the heels of this intelligence, we note a great number of dry plate "preservatives," such as the "collodio-gelatin process," the "Albumen-~~ben~~

process", and so on.

The collodian emulsion process, by which the silver nitrate bath is done away with, an emulsion of bromized collodian and silver nitrate being poured over the plate. This process is but the forerunner of the gelatine dry plates, which are now in such common use, and which possess such rapidity as was never dreamed of thirty years ago. The use of gelatine instead of collodian was advantageous in that it is, in some unknown way, a sensitizer, plates sensitized on gelatine being much more rapid than on collodian. Again, collodian dries so hard that the developer does not penetrate it easily, resulting in a weak negative. Gelatine finally has entirely displaced collodian.

While a good negative is practically the most important end that the amateur must have in view, yet it is almost useless to him unless he can produce a positive of pleasing tone and brilliancy.

We find that the evolutionary progress of the sensitive plate was accompanied by that of the printing-out papers, upon which the positive was printed from the negative.

Plain salted paper may be considered as the first real printing out paper to be used successfully. It is prepared by floating the paper for a few moments in water, ammonium chloride, sodium citrate, and gelatine, mixed in certain proportions. It is then dried and sensitized by being floated for some time upon a solution of silver nitrate. Later on, it was discovered that albumen could be mixed with this solution giving a gloss to the paper and securing greater brilliancy for the images.

The great trouble and time which it required to keep a supply of this paper on hand made it desirable to purchase prepared sensitized paper, and we need only to glance over photographic journals to realize to what immense proportions this industry has grown. We now can secure

at very reasonable prices papers suitable for any style of photograph, such as the "mat surface," "half mat" (for small portraits) "rough mat," (for enlargements) and "glossy" paper, with which can be obtained any "tone" desired. Each manufacturer publishes his own toning or developing formula, so that the most inexperienced novice can manipulate the paper with almost perfect results. Indeed, it seems impossible that science can accomplish more than has been done in the photographic world; but in spite of the perfection that apparently has been reached, new processes are being discovered continually, and we look forward expectantly to the time when colors can be produced as they really exist, so that nature, with her ever changing coat, can be stuck on card board, to be looked upon by those who are unable to see the original subjects.

space will not permit further elaboration from a historical standpoint, but a few words in picturing the contrast between modern amateurs and the

ancients will not be amiss.

By ancient photography we mean the practice of the art fifteen or twenty years ago, with the wet collodion process; a time prior to the general use of dry plates. Modern amateur photography is a very different thing. It consists substantially of pointing a camera and pressing the button. It requires no study, no knowledge, no genius, no skill. Even children are now taking photographs, and the camera is coming to be a toy. This, however, can hardly be honored by calling it by the dignified title of amateur photography. It is merely a pastime, indulged in for the same purpose as the little boy shoots his pop gun, - pure amusement. To succeed in the ancient photographic time, meant hard work, and study, for the enthusiast was required to make almost everything used in producing his photographs, - such as collodion to coat the plate, &c. He must also know how to sensitize and the develop the plate, how to

construct the silver bath in which the plate is sensitized, how to make the developer, how to clear the plate, in fact, to prepare all chemicals connected with photographic work. The amateur of those times was required to make himself familiar with the chemistry involved, in order that he might work intelligently and successfully, and to be qualified to determine with a degree of certainty what was the matter when chemicals did not work well. The negative bath was his most treacherous enemy, (or friend!); one result would be good, another bad, both baths being prepared in the same way so far as he knew.

It was such trying experiences that kept the ranks of the amateurs thin. When one did happen to become "Cranky" on the subject, he would get over it in a year or so, and so complete would be the cure that one would never suspect that anything had been the matter. To some, there was a fascination and

a satisfaction in experimenting. It is this sort that stick to the hobby, and get the most out of it.

To the strictly amateur camera "friend" of today, there is no keener delight than to do all the work connected with the completion of his own photographs. The development of an exposed plate brings him into close and intimate relation with nature.

The white plate is placed in the developer. When, lo! an image appears like a spectre from a winding sheet. As fold after fold comes off and each detail of the object comes out bright and clear, a happy expression settles on his face, and he has an almost uncontrollable desire to turn around in an effort to pat himself on the back.

Truly, photography has come to stay. Today it is on familiar terms with every avenue of life. It is associated with every form of science; it is the handmaid of the artist, the companion of the tourist, the historian of the

household. It reports the vibrations of the larynx, the finish at the horse race, and the first tottering steps of the baby. It is filling the recesses of fact, and unfolding new realms of fancy.

Because it is so useful, so versatile, and so suggestive, photography is a hobby that quite easily explains its own popularity. To every age and every condition it has some basis of appeal. Of all the sciences that have been taken up by amateurs as a hobby it is probably the most enticing and easy of attainment. Instead of being for self alone, others may share the joys of the producer. Though it may be said there are some poor results produced by the amateur, yet in general it may be said of the fruits of the amateur that they are interesting. It is a form of amusement, combined with study, and should be encouraged in every possible way.