IMAGE

Journal of Photography of the George Eastman House

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ABOUT IMAGE

In barely more than a century, photography has become recognized as the most facile means of communication known to man. Looking back on the early beginnings of this new art, it is at once remarkable how far we have been able to push the scope of the camera, and how excellent, within its limitations, was the work of the pioneers. The purpose of the George Eastman House, as defined in the charter granted to it by the University of the State of New York, is to show the progress of the art and science of photography. Our primary method of fulfilling this mission is to exhibit apparatus, photographs and moving pictures. But much of the story of photography can be told only in words, and it is the aim of IMAGE to publish articles which will reinforce our exhibitions and which will reach a larger audience than those thousands who visit us in Rochester. The articles will be brief; readers who wish further information are cordially invited to write to us. Material which appears in these pages may be reprinted with credit to the George Eastman House.

EARLY ASTRONOMICAL PHOTOGRAPHY

WHEN photography was given to the world in 1839, François Arago suggested that the daguerreotype process might be used to record the moon. Daguerre's primitive technique was not equal to the task, but within a decade heavenly bodies were recorded with a certain amount of success.

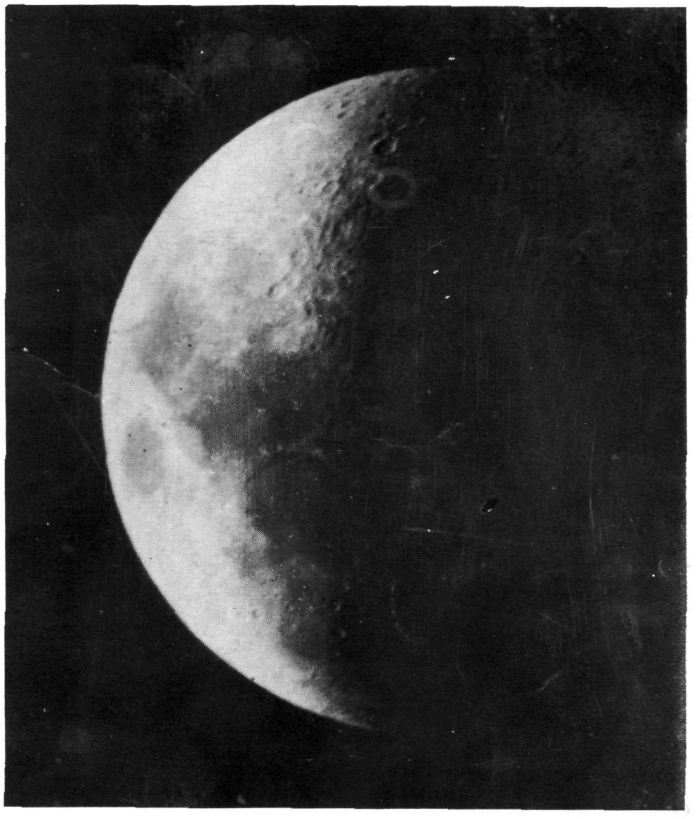
Samuel Dwight Humphrey, for example, secured a series of exposures of the moon at Canandaigua, New York, in 1849. He used an ordinary portrait camera. As the moon traveled across the heavens, he made several exposures on one daguerreotype plate. The images were hardly more than a quarter of an inch in diameter, but Humphrey demonstrated that it was possible to record with a camera the moon's disk.

In the same year, experiments were begun at Harvard College Observatory with the fifteen-inch refracting telescope, under the direction of William Cranach Bond. With this instrument, an image of the moon several inches high could be obtained, and a long exposure could be given because the telescope was fitted with a delicate mechanism to move it in synchronization with the heavenly bodies.

This first daguerreotype is now lost. But many others were taken at Harvard by the Boston daguerreotypist John Adams Whipple. He was awarded a medal for them at the Crystal Palace International Exhibition in London in 1851. A typical example, dated 1852, has been lent to Eastman House by the Harvard College Observatory. Like an ordinary portrait daguerreotype, it is enclosed in a velvet-lined leather case; it measures 3 ¼ x 4 ¼ inches.

On the night of July 16-17 the first daguerreotype of a star was taken at Harvard. The implications of this new technical achievement were commented upon in the press: "The ray of light which made the first impression on our Daguerreotype plate on Tuesday evening, took its departure from the star more than twenty years ago; long before Daguerre had conceived his admirable invention." From this simple beginning, photography has come to be the astronomer's most important tool. Telescopes today are cameras: the photographic plate stores images invisible to the naked eye and makes visible the worlds beyond.

DAGUERREOTYPE OF MOON. Taken at Harvard College Observatory in 1852 by John Adams Whipple. Lent to the George Eastman House by the Harvard College Observatory.



PHOTOGRAPHY COMES TO AMERICA

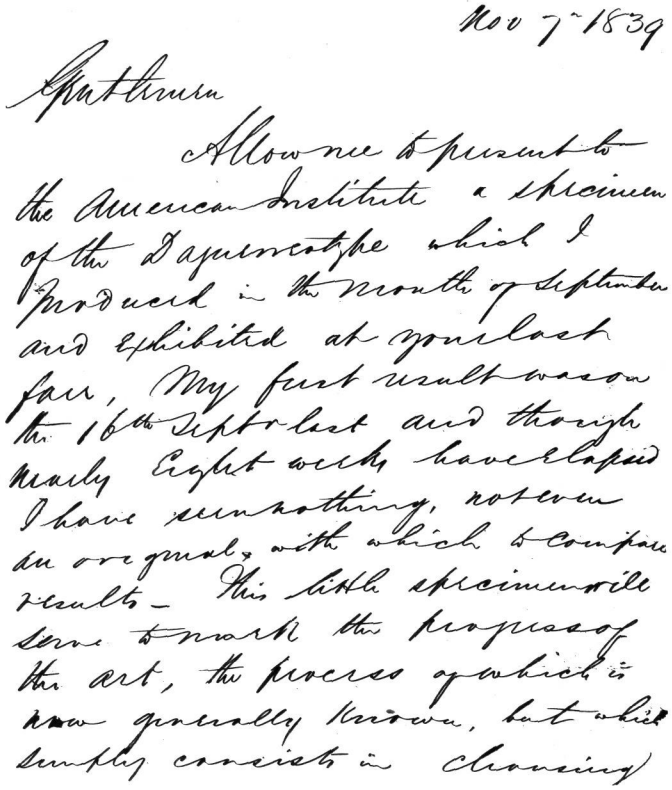
THE daguerreotype was born on Monday afternoon, August 19, 1839, in Paris. On that day the French Academy of Science, acting under government orders, held a special meeting to furnish the public with full instructions for making daguerreotypes. The secret had been purchased for the common good from the inventor, Louis Jacques Mandé Daguerre.

The public was ready for photography, and the news spread around the world as quickly as railroads and steamboats could carry it.

Just when the first photograph was made in the United States has long been a matter of conjecture. Samuel F. B. Morse, in the New York "Journal of Commerce" for September 28, 1839, stated that "the merit I believe belongs to Mr. D. W. Seager of this city, who has for several days had some results at Mr. Chilton's on Broadway." The exact date can now be established. The George Eastman House has acquired a letter from Seager to the manager of the American Institute, stating that he is sending to the Institute, for preservation, the daguerreotype which he took in New York City on September 16. Unfortunately we do not know what has happened to the daguerreotype.

There is a picturesque story, related by the brother of George W. Prosch, a pioneer photographer in America, that just as the ship in which Seager was sailing from London was leaving the dock, a friend threw him a copy of Daguerre's instruction manual. Was it this choice, by a nameless friend, of a bon voyage gift which brought photography to America?

AUTOGRAPH LETTER by D. W. Seager in which he claims to have taken a daguerreotype on September 16, 1839. "I have seen... nothing to compare," he tells the American Institute. No earlier record exists. George Eastman House Collection.



Nov 7th 1839

Gentlemen

Allow me to present to the American Institute a specimen of the Daguerreotype which I produced in the month of September and exhibited at your last fair, My first result was on the 16th September and though nearly Eight weeks have elapsed I have seen nothing, not even an original with which to compare results— This little specimen will serve to mark the progress of the art, the process of which is now generally known, but which simply consists in cleaning

THE FAVORITE FILM STORIES

OVER the years, film producers have returned again and again to a group of basic narratives as fondly as children who insist upon hearing their favorite bedtime stories repeated indefinitely. This is remarkable, for the medium of the moving pictures offers such a wide range to creative imagination.

Strangely enough, the most often repeated stories are tragedies: The Passion of Our Lord, Carmen, Dr. Jekyll and Mr. Hyde.

Competing versions of the Passion Play were on Broadway in 1897. The Lumières offered LA VIE ET LA PASSION DE JÉSUS-CHRIST in 1903 for international distribution; sections of the film found their way into parlors, to be viewed in miniature Mutoscopes.

In 1912 the American Kalem Company showed New York reviewers a film that has been in constant circulation ever since: Sydney Olcott's remarkable FROM THE MANGER TO THE CROSS. Filmed in Egypt and Palestine it brought authenticity to the telling of the age old story. In Germany, Robert Wiene (director of CALIGARI) tried his hand at the same theme with Asta Nielsen and Werner Krauss in I.N R.I. (1923), and Julien Duvivier assembled an imposing cast including Jean Gabin and Harry Baur to enact GOLGOTHA (1936). Of course Cecil B. De Mille has established Bible films as his cinematic specialty.

Carmencita, the heroine of Prosper Merimée's short story on which the famous opera is based, has flashed across countless screens since 1909, when Pathe Freres demonstrated her cinematic allure. In the United States, Colonel Selig brought CARMEN to the movies and in 1910 the Edison Company presented a version called THE CIGARETTE MAKER OF SEVILLE.

Film actresses yearned to play the colorful gypsy as fervently as their legitimate stage sisters longed to do Camille. In 1912 Marguerite Snow, the Thanhouser star, lured Don Jose to movie doom and the same year her rival, Marion Leonard appeared in a three-reel CARMEN.

De Mille turned his attention to the CARMEN story in 1915. His production was customarily spectacular and presented the opera singer Geraldine Farrar as a silent Carmencita with handsome Wallace Reid as her leading man. William Fox countered with Theda Bara in the role, certain that it was an ideal part for the silent movies' renowned femme fatale. Both of these films were mercilessly spoofed by Chaplin in his 1916 comedy with Edna Purviance as Carmen.

But Chaplin's satire was no deterrent to continuing generations of film gypsies. Dolores del Rio, Vivianne Romance, Rita Hayworth and a host of beauties of German, Spanish and South American studios enacted the Merimee story.

On at least one occasion, the actress was well acquainted with Spanish gypsy life: Jacques Feyder made his 1926 Carmen in Spain with the native singer Raquel Meller in the title role.

Perhaps the most memorable CARMEN was Pola Negri's 1918 film, made in Germany, directed by Ernst Lubitsch. The Slavic actress with her blazing dark eyes, swaggering insolence and devastating smiles of provocation, created a far more convincing Carmencita than the Latin performers. The realistic and splendidly executed settings of Karl Machus made the locale seem nearly as authentic as the backgrounds of Feyder's film, that were shot on location in Navarra.

DR. JEKYLL AND MR. HYDE has been familiar to movie

patrons since 1908, when Colonel Selig made his four-episode film. In 1910 a Danish JEKYLL AND HYDE appeared in this country to compete with a domestic version by the Bison Company. Thanhouser did the same story in 1912, and the next year Carl Laemmle's IMP Company starred King Baggott in the dual role.

A German adaption of Stevenson's tale was directed by F. W. Murnau in 1920, and John Barrymore found time while playing RICHARD III in New York in the same year to dash over to Astoria and complete a version for Paramount.

In the hands of Rouben Mamoulian, the same story brought an Academy Award to Frederic March in 1932. Victor Fleming attempted yet another treatment in 1941, with Spencer Tracy and Ingrid Bergman. The film originally contained unusually imaginative passages, dealing with Jekyll's subconscious mind, but these portions were altered so that the film, as seen, was mild and somewhat ineffective.

Christ, Carmen, Dr. Jekyll... At first glance the combination seems surprising. Yet what other narratives more completely sum up civilization's fundamental recognition of morality?

Between the extremes of ultimate good and triumphant evil, as exemplified in the life of Jesus Christ and in the diabolical destiny that hounds Carmencita, there lies everyman's no-man's land, so summed up in DR. JEKYLL AND MR. HYDE. The silent film knew how to speak to people of all the world. With intuitive wisdom beyond academic profundities the rough and ready film makers seem to have chosen the stories that best visualize the eternal verities in the universal picture language of the cinema.

GEORGE EASTMAN'S FIRST CAMERA DESIGN

IN 1888 George Eastman invented a simple box camera which he named the Kodak. It was already loaded with enough "American Film" for one hundred exposures when you bought it for $25. Anybody could operate it. You simply pulled a string (to cock the shutter), pressed a button (to release it) and turned a key (to wind on fresh film). After the hundred exposures had been taken, the entire camera was returned to the factory where the film was processed, and prints made from them. The Kodak system was a combination of a simplified camera, roll film, and processing service, and it was at once a great success.

Most of the steps leading up to the Kodak system are well known: Eastman's plate coating machine, negative paper, stripping "American Film" and roll holder. But the camera which he first designed is something of a mystery. Intensive search has failed to turn up an example, yet before the Kodak camera was even announced, at least forty "Detective Cameras" were sold.

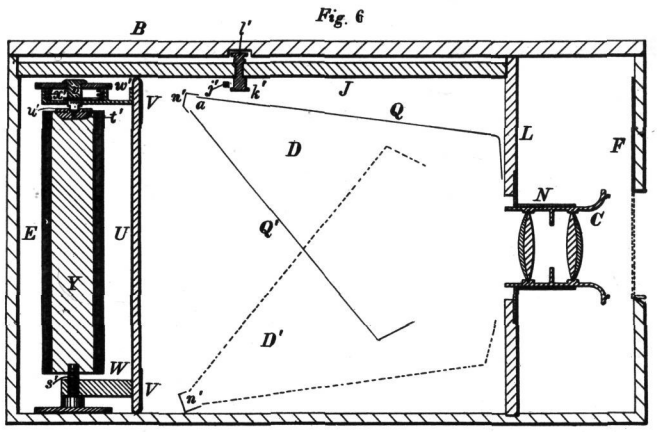
Full details about this elusive camera may be read in the specifications for U. S. Patent No 353,545, granted November 30, 1886, to George Eastman and Franklin M. Cossitt. The accompanying drawings show that the camera was outwardly the leather covered box which had already become familiar to the American public. Inwardly it was fitted with a most unusual shutter. A hollow, truncated, triangular prism of sheet metal was pivoted inside the camera box. The open base faced the lens. During exposure the apex of this funnel-like device traveled across the sensitive material; bit by bit the image of the lens

G. EASTMAN & F. M. COSSITT.

DETECTIVE CAMERA.

No. 353,545. Patented Nov. 30, 1886.

Fig. 6



PIVOTED DROP SHUTTER of Eastman's first camera in cross section. When button l' on top of camera is turned, shutter QQ' drops from D to D'; after exposure is returned to D by a knob on side of the camera, not shown in drawing.

was received by the plate or film. In a sense this was a focal plane shutter. For time exposures the upper and lower parts of the prism—the jaws, Eastman called them—could be separated. The camera accepted either a roll holder, for enough negative paper for forty-eight 4 x 5 negatives, or holders for glass plates.

A search through George Eastman's correspondence reveals that a model of the Detective Camera was first exhibited at the St. Louis Photographic Convention in June, 1886. He ran into production difficulties almost from the start. "We have been the victims of annoying delays," he wrote on November 17. "We have been unable to get the special form of brass rod for the double holders which are to be used with the camera. We have about 75 cameras nearly done which are waiting for the holders. We do not want to send any out until we are sure that the holder can be put into each and everyone without fitting."

A year later, in May: "The price of the Detective Camera is $45." By June the first fifty were completed to Eastman's satisfaction. In January of 1888—the year of the Kodak—Eastman offered W. H. Walmsey, a Philadelphia dealer in photographic goods, forty of the cameras at $33.75 each for sale at $50. "We shall not make any more of them," he wrote, "owing to the expense, there being no probability of our being able to make anything on them in any quantity. We therefore want to get rid of these without distributing them all over the country. Can you not make a specialty of them?"

In September the new Kodak camera, of much simpler construction, was put upon the market. In its design, Eastman learned much from his experience with the ill-fated Detective Camera. In outward appearance it was the same. But instead of a removable roll holder for American Film, spools were built in. The clumsy internal shutter was replaced by one of an equally ingenious design: the lens assembly was surrounded by a tube with two holes in it which revolved when the familiar button was pressed; as the holes passed across the lens, the exposure

was made.

It is hard to believe that of the forty cameras sold to Walmsey, not one now exists. The exhibition of Eastman's contributions to photography at the George Eastman House cannot be considered complete until an example of this 1886 Detective Camera is found.

SIR JOHN F. W. HERSCHEL

ONE of the first Englishmen who became interested in Talbot's invention of a way to make pictures by the action of light, was Sir John F. W. Herschel, the famous astronomer. As early as January 29, 1839, he wrote in his notebook: "Experiment 1013. Tried hyposulphite of soda to arrest action of light by washing away all the chloride of silver or other silvering salt; succeeds perfectly." In these words Herschel first described the process of "fixing," with the chemical now known as sodium thiosulphate. His discovery made both Daguerre's and Talbot's techniques practical and has been used ever since. Talbot called his process "photogenic drawing". Herschel suggested that a better word would be "photography"; the world adopted it at once. He also coined the words "negative" and "positive".

Ever the man of vision, in 1860, in the days of the wet plate process he made a prediction:

"What I have to propose," Herschel wrote, "may appear a dream; but it has at least the merit of being possible, and perhaps, a realizable one—realizable that is to say, by an adequate sacrifice of time, trouble, mechanism and outlay. It is the stereoscopic representation of scenes in action—the vivid and lifelike reproduction and handing down to the latest posterity of any transaction in real life—a battle, a debate, a public solemnity, a pugilistic conflict, a harvest time, a launch—anything, in short, where any matter of interest is enacted within a reasonably short time which may be seen from a single point of view.

"I take for granted nothing more than the possibility of taking a photograph, as it were, by a snap-shot—of securing a picture in a tenth of a second of time; and that a mechanism is possible by which a prepared plate may be presented, focused, impressed, displaced, numbered, secured in the dark, and replaced by another within two or three tenths of a second."

Herschel, who first used the word "snapshot", did not live to see any. In the very year he died, 1871, gelatin was first used for coating dry plates and within a few years anyone could accomplish in black and white what had seemed to him a dream; before the century had run its course snapshots in color were a reality.

The portrait of Herschel which we reproduce from the Alden Scott Boyer Collection at the George Eastman House, was taken by Julia Margaret Cameron in 1867. It is one of the finest portraits taken by this English photographer who was a life-long friend of the great astronomer.

PIGEONS AND MICROPHOTOGRAPHY

DURING the Seige of Paris in 1870-71, when the citizens were surrounded by the Germans for four months, the only means of communication with the rest of France was by air. Almost daily free balloons were launched, bearing letters and dispatches. The travel, however, was one way, for the balloons were at the mercy of the winds, and could not be navigated. Pigeons and photography brought Paris news from the outside world. Printed messages, reduced on collodion films 1½ x 2⅜ inches in size, were sent to the beleaguered citizens by carrier pigeon. On arrival in Paris the films were projected and the messages transcribed by hand. It is estimated that, in the course of the siege, 115,000 separate messages were delivered by this precursor of V-mail and Airgraph systems of World War II.

The technique was worked out by René Prudent Dagron, a specialist in microscopic photography, who made those popular novelties in which tiny photographs were mounted behind lenses in such ivory objects as a miniature pair of opera glasses, the handle of a crochet hook, or a pen knife. A contract was drawn up with the government, and Dagron with an assistant, Albert Fernique, left in the balloon "Niépce" with half a ton of equipment on November 12, 1870. They landed in enemy territory, but luckily the photographers were able to make their way with their bulky apparatus to Tours, and there began operations.

After experimentation, the technique was finally standardized. Messages were first set up in type by a printer. As many as three to four thousand of these twenty word messages were photographed on a single plate, 1½ x 2⅜ inches in size. From the negatives contact prints were made on collodion plates. The thin film of collodion, which might bear as many as eighty thousand words, was stripped from the glass support, rolled up and put in a quill tied to the wing of a carrier pigeon.

Of course not all of the pigeons arrived at home base. The Germans resented the invasion of their blockade and brought down many of the birds by rifle fire or by setting trained falcons to attack them. Some birds were insufficiently trained and did not fly home, while others were not strong enough to bear their burdens. But the virtue of this first V-mail technique was that delivery was guaranteed. Duplicates were sent until word came from Paris by balloon of the safe receipt of the messages.

One of the bottlenecks in the program was the transcription of the microfilms, which were illegible without strong magnification. The fragile collodion films were soaked until they unrolled, and were then bound between glass and put into a lantern slide projector. Sixty-seven clerks copied the messages on to telegraph blanks for delivery.

Photography was also employed during the siege to reduce the size of newspapers thus lessening the load of the balloons. "La Cloche" was reduced by photolithography to one side of a sheet 8½ x 11 inches. The newspaper could be read with an ordinary reading glass.

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