The 2019 West Virginia Day exhibition, “Picturing West Virginia: Early Photography in the Mountain State, 1840-1915,” explores the history of photography using examples from collections of the West Virginia & Regional History Center. The exhibit documents photographic processes, formats, and equipment from daguerreotypes to wet plates to brownie cameras, of the 19th and early 20th century. It also touches upon the ways photography impacted West Virginians and the world.

This article provides a brief overview of the processes and formats featured in the exhibit. “Picturing West Virginia” will be on display in the Center’s Davis Family Galleries through May 2020.

The Beginning of Photography

Attempts at capturing images date back to ancient times. The camera obscura, or pinhole camera, was known to the Chinese and Greeks more than 2000 years ago. It consists of a dark chamber (‘camera’) with a hole, and later a lens, in one side. Images from outside the chamber are projected through the hole onto the opposite wall of the chamber. The images appear reversed and upside down.

A mirror can be added to flip the images for a normal view. The camera obscura can be used to view eclipses without damaging the eyes. It was also commonly used by artists to assist them in creating proportionally correct drawings.

The camera obscura enabled only the projection of images. The invention of methods to permanently capture images did not occur until much later. In 1727, Johann Schulze discovered that silver salts could be darkened through exposure to light. He demonstrated his discovery by making words appear in the salts by exposing them to sunlight. While he did not attempt to ‘fix’ (make permanent) the images he produced, his discoveries, combined with the camera obscura, provided the basics needed for the invention of photography.

A little more than a hundred years later, Louis Jacques Mandé Daguerre, building upon earlier work of Nicéphore Niépce, invented the first successful photograph medium, the “daguerreotype.” Daguerre discovered that a copper plate coated in iodized silver, placed in a camera obscura, and exposed to light for five to seventy minutes, would hold a latent image. After exposure, the image could be further developed by putting it in another box and subjecting it to mercury vapor. The image could
then be permanently fixed by washing it with a solution containing table salt to dissolve the unexposed silver iodide. What was left was an image with a mirror-like reflective quality. In 1839, Daguerre sold full rights to his invention to the French government and published a pamphlet that described all the details of the process which became a best seller. Photography would soon become a burgeoning industry around the world, particularly in America.

**Daguerreotype**

Daguerre's process produced a direct positive, meaning no negative was created. The daguerreotype could not be reproduced unless photographed itself. Within a year of the publication of the process, improvements in camera lenses and sensitized plates shortened the exposure time to five to forty seconds. This made daguerreotypes practical and ideal for portraiture. Unless a prism was used in the camera to correct the image, daguerreotypes are laterally reversed meaning that text will appear backwards or wedding rings appear on the right hand instead of left.

Daguerreotypes were made in standard sizes ranging from a whole plate of 8½ by 6½ inches to a sixth plate of 2¾ by 3¼ inches. Sixth plates and quarter plates (3¼ by 4¾ inches) were the most common. Portraits were often colored by hand to add blush to the cheeks and sometimes gold was applied to jewelry. The daguerreotype plate was then placed under glass in a case, sometimes with a mat and preserver. Daguerreotypes were generally housed in photograph cases that ranged from simply decorated to highly ornate. While many were made of wood covered in leather, photograph cases were among the first items made of thermal plastic, a biodegradable moldable material that preceded petroleum-based plastic.

**Wet Collodion Process**

The wet collodion emulsion process was developed in 1848 and made available to the public in 1851. In this process, collodion (a mixture of nitrated cellulose, ether, and alcohol) was poured over the base material (usually glass or tin) which was then soaked in a silver nitrate solution. While still wet, the base was then placed in a holder, exposed in a camera, and then developed. This process had to happen quickly - typically within fifteen minutes - so it was better suited for portraits taken in a studio. For photographs outside of a studio, the photographer had to have all of his equipment and chemicals on site and set up a mobile photo lab. The collodion process was in popular use until around 1880. It was used to make ambrotypes, tintypes, and wet plate negatives.

**Ambrotype**

The ambrotype used a polished plate of glass as its base. The emulsified plate was underexposed in a camera and sometimes bleached after being developed creating a light white silver image. To make it appear positive, the glass base was backed with black cloth, paper, metal, or paint. Like the daguerreotype, the ambrotype is a direct positive image. Ambrotypes were also hand colored and put in cases but they do not have the reflective look of a daguerreotype. They are not usually laterally reversed like daguerreotypes as the glass base could be flipped over in the case to show the correct view. Cheaper than daguerreotypes, ambrotypes peaked in popularity in the mid-1850s.

**Tintype**

The tintype, another direct positive image, produced using the wet collodion process, was introduced around 1856. As indicated by its name, the base of the tintype was tin plate. Tintypes could
be hand colored and placed in cases, but they were often put in paper mounts or albums or just left loose. They were less expensive than both daguerreotypes and ambrotypes. Tintypes were very popular with Civil War soldiers who would send them to their families at home.

**From Negative to Positive: Albumen Print**

The development of the collodion wet plate negative changed the primary photographic method from direct positives (daguerreotypes, ambrotypes, and tintypes) to the system of printing positives from negatives. As a result, using albumen printing out paper became the most popular printing process in the 19th century. In fact, albumen prints from wet collodion glass negatives comprise 80 percent of all 19th century photographs that survive today.

The use of albumen (egg white) as part of an emulsion mixture simplified the photographic process. Paper could be coated with the albumen emulsion, dried, and stored. When it was time for use, the paper would be sensitized by floating it in a silver nitrate solution and used immediately by placing it in contact with a glass plate negative (usually created by the wet collodion process) then exposed to the sun in a printing frame until the print had the preferred level of darkness.

Yellowing discoloration is strongly associated with albumen prints. Albumen yellowed in part because of the use of gold chloride in the fixing process as well as the natural aging of the egg albumen. Another characteristic of albumen prints is small cracking in the emulsion. Most albumen prints were made on thin paper and so they were mounted on cards.

**Salted Paper Print**

The calotype process used a paper negative to create a salted paper print. It was in use at the same time as the daguerreotype but never achieved wide popularity due to patent restrictions and the fuzzy quality of prints in which paper grain was visible. The calotype also lacked the range of tones that were seen in daguerreotypes. Still, the calotype is an early example of the negative to positive process that would eventually dominate after the development of the wet collodion negative and albumen print paper. Although the calotype process didn’t catch on in a big way, salted paper continued to be used and was paired with the wet collodion and other types of negatives to create prints in the late 19th century.

**The Carte de Visite**

Cartes de visite, commonly referred to as CDVs, were named after (and the same size as) French calling cards. When they were first introduced in the 1850s it was thought that they would soon replace calling cards altogether though that did not happen. They did, however, become incredibly popular beginning in 1859 and lasting through the early 1870s. In 1863, they inspired such a collecting furor, that journalists coined the term “cardomania” to describe the craze. Boston physician and photography enthusiast, Oliver Wendell Holmes suggested several reasons for the trend, “It is the cheapest, most portable, requires no machine to look at it with, can be seen by several persons at the same time...”

The standard CDV is 4 ¼ by 2 ½ inches in size and consists of a small portrait photograph mounted on a card backing. Most of the photographs were albumen prints created from wet collodion negatives, though sometimes other paper prints such as salt or gelatin prints were used. To create CDVs, photographers used a special camera that had multiple lenses and a moveable plate holder that captured several images at once. This enabled the mass production of the photographs. Some studios printed thousands each day.

“Secure the shadow ere the substance fades,” was one of the earliest advertising slogans used by mid-19th century photographers to prompt the sale of photographs, particularly CDVs. The ads encouraged the public to capture images of family and friends before their loved ones were gone but the idea of sharing these conve-
nient “likenesses” took on a life of its own. The proliferation of cartes de visite in households across America inspired another innovation that took the nation by storm -- the photograph album.

**Cabinet Card**

When CDVs began to decrease in popularity, larger card mounted photographs were introduced. Standard cabinet cards prints measured 4½ by 6¼ inches. The mounting cards routinely included ornate decorations as well as the name of the photographer and studio. Cabinet cards and larger card mounted photographs were popular well into the 20th century.

**Glass Plate Negative**

The glass plate negative, which produced a clearer, sharper image than earlier photographic methods, revolutionized photography in the second half of the 19th century. The collodion wet plate negative, primarily popular from 1860s to 1880s, essentially changed the primary photographic method from direct positives (daguerreotypes, ambrotypes, tintypes) to the system of printing positives from negatives.

The introduction of gelatin emulsion in the late 1870s significantly changed photography and is still the most commonly used emulsion to this day. Gelatin emulsion is a dry process that is used to create both negatives and positives. The medium was bulk manufactured enabling photographers to purchase paper, glass, and later film that was ready for use. Unlike the cumbersome and complex wet collodion process, gelatin emulsions worked quickly and were more portable, making it simpler for amateur photographers to take up the hobby.

Gelatin dry plate glass negatives first became available in 1879 and remained in use until approximately 1920. These plates were thinner than earlier glass plates and came in standardized sizes of 4x5, 5x7, 8x10, and 11x14. They were coated in an even layer of the gelatin emulsion. Gelatin glass plate negative images are generally more starkly contrasted in their black and white whereas wet collodion plates exhibit cream and gray tones.

**Stereographs**

Stereographs are card mounted photographs made through assorted photograph processes, that offer two images placed side by side on a single card. The images are usually made simultaneously by a camera with two lenses placed adjacent to each other so as to recreate the view that a person would have looking through two eyes. When viewed through a special viewer -- the stereoscope -- stereographs exhibit a three-dimensional effect. While early stereographs were made using both daguerreotypes and ambrotypes, the introduction of the albumen print increased

*Stereocard with images of a Ferris wheel at a fair in Middlebourne, WV, 1905.*
the format's popularity during the 1850s. The popularity of CDVs minimized interest in stereographs during the 1860s, but their popularity resurged after the card craze died down. The stereoview remained in common use well into the 20th century.

**Cyanotypes**

Cyanotypes are paper prints immediately recognizable by their blue color. The cyanotype process was in use as early as the 1840s but didn’t reach popularity until the 1880s. Inexpensive and easy to process, they were favored by amateur photographers while professional photographers often used them as proofs to decide which images they would select for printing. The cyanotype is the forerunner of the modern blueprint.

**Panoramic Photography**

While the ability to take a panoramic photograph is standard on digital cameras today, the roots of panoramic photography date back to the beginning of photography. The earliest panoramic views were created by shooting scenery in sections and then placing the resulting photographs next to each other to get the desired effects. By the end of the 19th century, special cameras were developed to take panoramic views. These included the swing-lens cameras in which the lens rotated while the film remained stationary, and the 360-degree rotation camera in which both the camera and the film rotated. The mass produced panoramic Al-Vista camera, introduced in 1898, and the Kodak #4 which came out a year later, were both swing-lens cameras. They used roll film and didn’t need a tripod. The Cirkut camera was patented in 1904 and began production a few years later. Primarily used by professional photographers, the Cirkut was a 360 degree rotation camera with both the camera and the film rotating on a special tripod. The Cirkut camera was capable of making a twenty foot long 360 degree photograph.

**A Significant Development: Gelatin Emulsion**

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Gelatin printing paper came in two varieties, printing out paper and developing out paper. The printing out paper was placed in contact with a negative and exposed to light until the image appeared as desired, just as with the albumen printing paper. Gelatin developing out paper held a latent image that was unseen until it was placed in chemicals and developed. At the end of the 19th century, gelatin printing and developing papers along with collodion paper competed with albumen prints. Gelatin developing out paper eventually surpassed all others and has been the leading paper since 1910.

**Victorian Photo Albums**

The advent of photography brought about the invention of the photograph album. The first commercially produced photo album was developed in 1860. A decade later hundreds of styles of albums were available to consumers. Made with cloth and wood, they were filled with photos of family and friends as well as pictures of leading celebrities.

**Photography for the Masses: Eastman Negatives and Kodak Cameras**

While the gelatin dry plate glass negative was a great advance in simplifying the photographic process, glass plates were easy to break. George Eastman addressed this issue by introducing gelatin paper stripping negatives in 1886. Made of paper coated in gelatin, the negative strips were placed on rolls and loaded on a roll holder inside a
camera. In addition to solving the problem of fragile glass plates, the negative rolls eliminated the cumbersome need to change plates for each exposure. The photographer could simply advance the roll after each shot. These negatives produced round shaped prints that were mounted on a square. Eastman improved his invention the following year by introducing cellulose nitrate (rather than paper) film. Though this film would prove to have stability issues over time, the introduction of photographic negative film revolutionized the industry.

Eastman’s film along with the Kodak No. 1 and No. 2 cameras opened up photography to the masses. The slogan “you push the button, we do the rest” describes the ease of the whole process. When a person bought a camera, it came loaded with film. After the photographer took the pictures, advancing through the roll, the camera was sent back to the Eastman Kodak company to have the photos developed. The prints and the camera, reloaded with film, were returned to the photographer who was ready to start all over again.

Postcards

The history of the postcard dates back to 1861 when the U.S. Government passed legislation that permitted cards weighing one ounce or less to be sent through the U.S. mail. That year John P. Charlton copyrighted the first American postcard. Early postcards did not initially bear pictorial images. One side was reserved for the sender’s message while the other was generally marked “This side for address only.” Images were introduced gradually as the end of the 19th century neared. The modern postcard, with an illustrated cover and a reverse side divided into message and address sections, was introduced in 1907. The ensuing decades are now considered to be the “Golden Age of Postcards” with millions of postcards printed. During this period photography enthusiasts could create their own photo postcards using a special Kodak camera that produced postcard size negatives that could be printed on postcard paper.

MARAC Visits Morgantown

The Mid-Atlantic Regional Archives Conference (MARAC) held its Spring 2019 conference in Morgantown. Over 240 archivists from across the region attended the meeting at the Morgantown Marriott Hotel. The West Virginia and Regional History Center hosted the annual Friday night reception. Conference attendees enjoyed food and entertainment in the Libraries Milano Room and then visited the Center to see collection highlights. The conference and the reception were well received and garnered high ratings on the post-event evaluation. The Center’s Danielle Emerling, Lori Hostuttler, and Jane LaBarbara served as Co-Chairs of the Local Arrangements Committee.

WVRHC Director John Cuthbert discusses the Pearl S. Buck Collection with a MARAC conference attendee.

Selected Recent Accessions


Typed copy of a manuscript entitled “Recollections of the Civil War 1861-1865” written by Confederate veteran John Edmund Charles Lewis Hatcher and compiled by his son Charles S. Hatcher between 1933 and 1937, while John Hatcher was in his nineties. Hatcher served as a private for his entire military career; he recounts the experience of a rank-and-file soldier, including many hardships. Hatcher describes difficult river crossings; carrying disassembled artillery down cliffs; and marching barefoot after the Battle of Lynchburg back to West Virginia. In a darkly humorous observation, Hatcher writes that his monthly pay of near-worthless Confederate dollars was only enough for a month’s supply of tobacco.

Spiral bound volume containing a listing of burials at the Old Stone Church Cemetery in Lewisburg, West Virginia, developed using a survey of the cemetery done by local historian Marcellus Zimmerman in the late 19th century. Listings include the name of the subject, dates of birth and death, parents’ and spouse's names, cause of death, and the section of the cemetery where the grave is located.


Material regarding Leonard H. Ballard, a West Virginia native and World War II veteran who served in the United States Capitol Police Force from 1947 until 1984. Ballard was the first person in the history of the organization to rise from the rank of private to that of inspector during his service. Includes a bound transcript of oral history interviews conducted with Ballard regarding his career in the Capitol Police Force (1983-1984), copies of photographs of Ballard (undated), and a newspaper article regarding Ballard’s memories of the late Senator John McCain (2018).


Property tax ledger of Doddridge County, West Virginia (1863). Includes information collected annually regarding property owned by individual citizens of the county for purpose of taxation. Includes names of residents (in alpha order) and their property. Property listed includes horses, mules, carriages, cattle, sheep, hogs, watches, clocks, pianos, furniture, investments, etc. Also includes assessment of free negroes and slaves. There is an entry for Joseph Hubert Diss Debar (1820-1905), a French-born American artist and the first commissioner of immigration for West Virginia.


One bound volume consisting of approximately 150 issues of the the “South Branch Intelligencer” published in Romney, (West) Virginia, between June 1834 and May 1837. The “South Branch Intelligencer” was founded by William Harper in 1830 and continues today as the “Hampshire Review and the South Branch Intelligencer”.


Six issues of “The Echo”, a newsletter published by the employees of the West Virginia Ordnance Works. Content of the newsletters includes introductions of new employees; recognition of exceptional performances; updates regarding the facility; and news regarding the progress of the war, particularly the role of ordnance. The West Virginia Ordnance Works (WVOW) was a United States Army ammunition manufacturing facility located in Point Pleasant, West Virginia that operated from 1942-1945.


Records of the Davis Coal and Coke Company, a corporation created in the 1880s by Henry Gassaway Davis that was located in Thomas, West Virginia. The company was named after both the founder and the Coal and Coke Railroad that it primarily used. Later in the company's life it purchased lands and established its own mines. The company was finally dissolved in 1950. The collection includes administrative correspondence, reports, financial records, employee records, and other material.


A four-page letter from the general manager of the Colored National Associated Press (CNAP), William Murrell, to Stephen B. Elkins, on CNAP letterhead, which sheds light on the political mobilization of African Americans in the 1884 election. In the letter, Murrell describes a trip to West Virginia in which he writes, in part: “During my sojourn in that State I was surprised to see that there were hundreds of colored people who have never registered or taken any part whatever in politics. From the best information I could gain the defeat of our friend Mason was caused by the fact that a
great number of the colored people were not registered." He writes that he thinks they could win the state by registering more African-American voters and says, "I would like to go over in West Virginia quietly and organize the colored people of that state."


Mabel Tanner was a playwright who lived in Morgantown, West Virginia. The collection includes her correspondence advocating her plays, including letters to the Federal Theatre Project in the 1930s. There is also correspondence with the Hollywood movie star Anthony Quinn.


This collection documents the Dotson family of Greenwood, West Virginia in Doddridge County. It contains Nancy Clark Dotson’s diaries from 1904-1946 (including photocopies, indices, and supplementary information), other Dotson family diaries and books, the marriage certificate of Franklin and Nancy Clark Dotson, a Dotson family history, a cabinet card and carte de visite album, a tintype album, a collection of glass plate negatives, and other assorted photographs.


Collection includes mostly West Virginia University ephemera, publications, photographs, and negatives, collected by the Young family. Much of the WVU ephemera was likely collected by Guy Bell Young (1874-1962) during his time at the university. Also includes photographs and negatives produced by his son, Guy Bayard Young (1908-1999). Many of these images are from 1936-1937 and pertain to WVU; subjects include Esther Benford (the first woman to receive a civil engineering degree from WVU, and about whom Bayard Young wrote a news article), WVU football games (especially WVU vs. University of Pittsburgh), WVU’s Corps of Cadets and their band, and various other student activities. Also includes a few photos of Jackson’s Mill, and images of President Franklin D. Roosevelt and Jennings Randolph speaking from the back of a train.


Program for production of Shakespeare’s “Richard III” put on by the University Specialty Company, 16 April 1892. The production was mounted to raise money for West Virginia University’s first football team. Program includes a synopsis and cast of characters; the title role was played by Melville Davission Post, a law student who would become a popular author of detective fiction.