

The Watercolors of Charles M. Russell: An Examination of the Artist's Materials and Techniques on the Montana Frontier¹

Jodie Utter

Amon Carter Museum of American Art*

KEYWORDS

Artists' materials, Charles M. Russell, infrared photography, Montana frontier, polarized light microscopy, studio materials, ultraviolet radiation, underdrawing, X-ray fluorescence, watercolor, watercolor technique.

ABSTRACT

An analysis of Charles M. Russell's (active ca. 1880–1926) watercolor materials and techniques were conducted as part of a technical study using low-power magnification, polarized light microscopy (PLM), X-ray fluorescence (XRF), infrared photography (IR), and ultraviolet (UV) radiation. Russell's pigments were identified, as were shifts in his technique over the course of his career. Pigment samples were collected from Russell's studio materials housed at the C.M. Russell Museum, the Britzman Collection at the Gilcrease Museum, and the National Cowboy & Western Heritage Museum. Russell's technique was studied looking at 26 of his watercolor paintings. The paintings were chosen to represent all phases of the artist's career and ability.



Britzman Collection, D-1-42, Gilcrease Museum, Tulsa, OK

Figure 1. Charles M. Russell painting with watercolors at the Pablo buffalo roundup in Ronan, Montana, 1909.

Traditional and unconventional techniques were noted, as well as shifts in the utilization of underdrawing. The study also focused on a wide variety of high-quality artists' materials available on the Montana frontier in the late 19th and early 20th centuries.

INTRODUCTION

This paper summarizes a larger study that represents the first comprehensive examination of Russell's (active ca. 1880–1926) watercolor materials and his varied watercolor techniques. Throughout his life, Russell (Figure 1) created approximately 1,100 finished watercolors, constituting about one-third of his total artistic output. Russell's watercolor

painting technique was examined by focusing on 26 of his watercolor paintings chosen to represent various periods throughout his career. His watercolor pigments were characterized using samples collected from his existing studio materials.

Russell was born in 1864 in St. Louis to an affluent family. His parents were supportive of his artistic talents. Not fond of formal education and passionate

¹Originally presented at Inter/Micro 2012, Chicago.

*3501 Camp Bowie Boulevard, Fort Worth, TX 76107; jodie.utter@cartermuseum.org

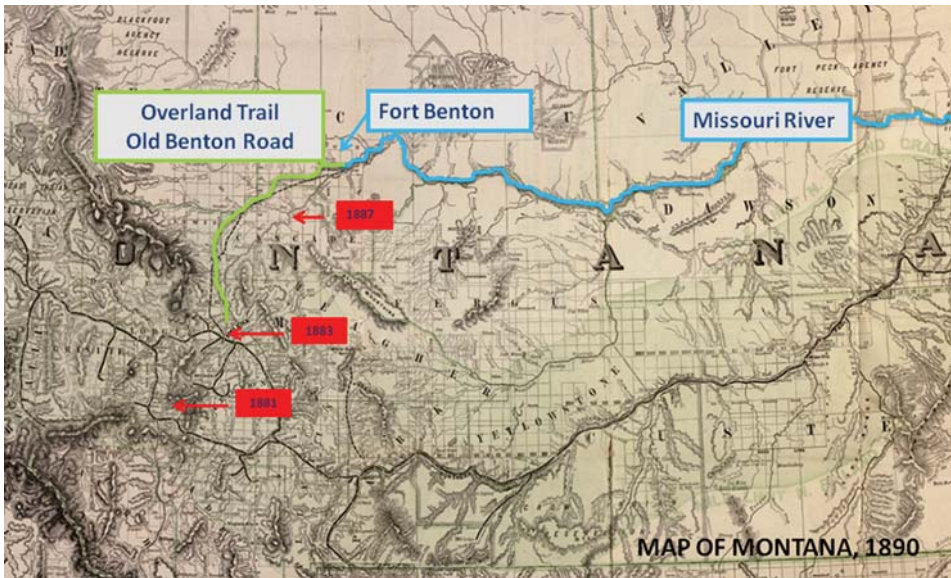
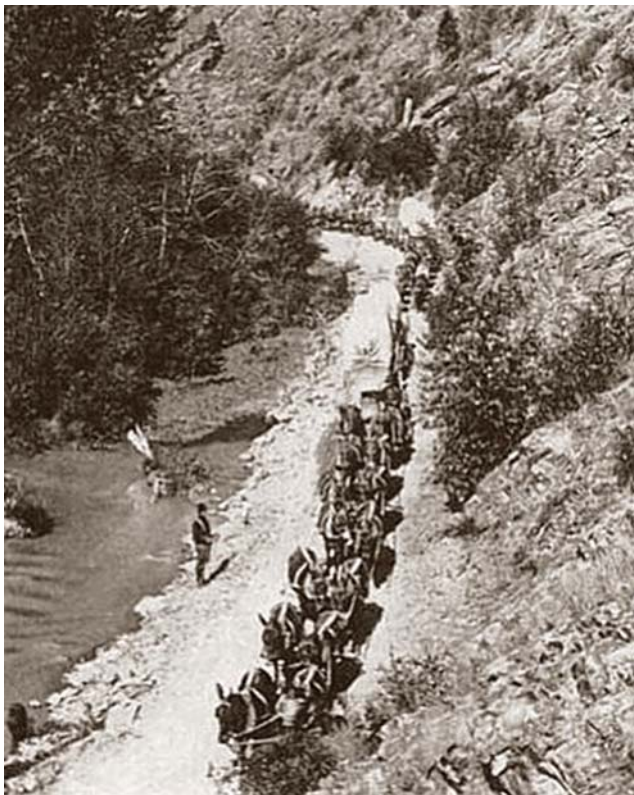


Figure 2. Montana map (ca. 1890). Before the railroad reached Montana, goods arrived in the territory by steamboat from St. Louis. They were off-loaded at Fort Benton, Montana, and then dispersed throughout the territory via mule train. The Overland Trail was the main trade route to Great Falls, Helena and Butte (1). Dates in red indicate when the railroad arrived in Butte in 1881, Helena in 1883 and Great Falls in 1887. Montana becomes a state in 1889.



Courtesy of Montana State University Library

Figure 3. A mule train carrying supplies winds along the Prickly Pear Canyon road north of Helena, Montana.

about the American West, Russell was allowed to travel to the Montana territory just prior to his 16th birthday to work on a family friend's ranch. He worked for several years as a cowboy, watching over cattle at night, which allowed him time to paint and draw during the day. He quit the cowboy life to become a professional artist in 1893. Largely self-taught, his early works appear relatively flat, with a limited color palette. As he gained proficiency, he utilized traditional and unconventional watercolor techniques, mastering transparent watercolor in the late 1890s. Later, after a pivotal trip to New York City in 1904, he incorporated and mastered the use of opaque watercolor. His color palette expanded markedly, and he used specific colors to give his composition a three-dimensional quality. As he gained financial success, he was able to travel to Europe and buy a second home in California, where he befriended movie stars and laymen alike. Russell's paintings began setting records as the highest paid by a living artist. Russell died in 1926 in Great Falls, Montana. Businesses closed and mourners filled the streets to watch his funeral carriage pass. Montana's adopted son was laid to rest at the age of 62.

ARTIST MATERIALS

"Paints, oils and varnishes" were being advertised in the local papers as early as 1874 (2) and possibly earlier in the Montana Territory, well before the advance of the railroad, which didn't reach Butte until 1881. Secondary goods such as paints and artists sup-

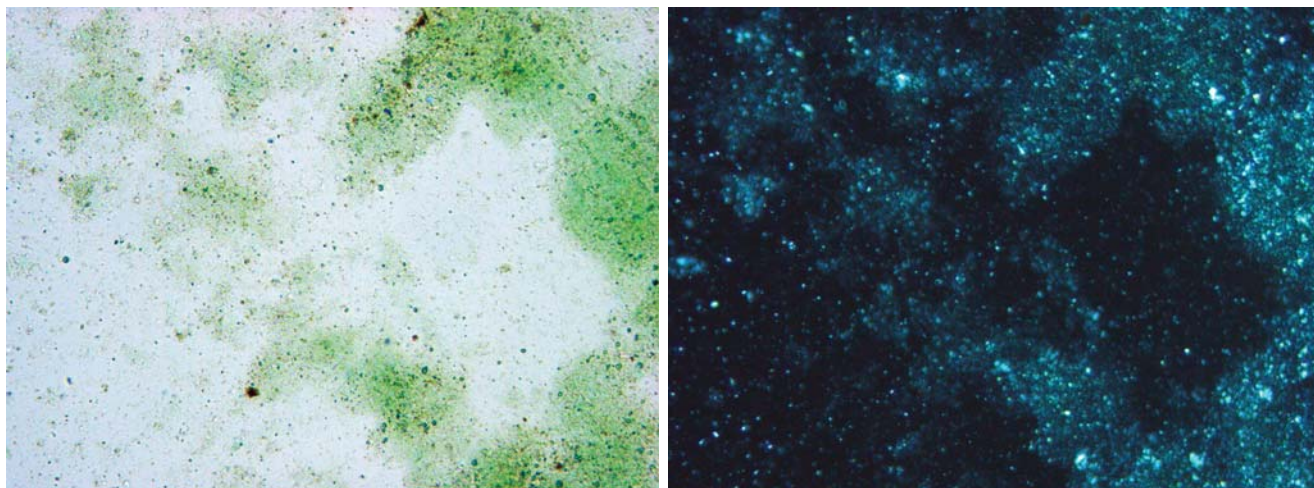


Figure 4. This sample was characterized by XRF and identified as emerald green by PLM. The images were taken at 400x in plane polarized light (left) and with crossed polars (right). The sample was obtained from a Winsor & Newton watercolor half pan in an unbranded Japanned paint tin (4) in the Britzman Collection. The sample was mounted in Cargille Meltmount $n = 1.662$.

plies were offered for sale at drug stores and later in specialty paint stores. Goods were shipped on steamboat from St. Louis up the Missouri River and then dispersed through the territory via mule trains (Figure 2). Traffic through the territory at times was so heavy that lines of mule teams stretched a distance of up to three miles (3) (Figure 3). After the railroad arrived, Russell was able to acquire artist supplies at the local paint store exported from as far away as England. Supplies included Winsor & Newton watercolor paint and, likely, J. Whatman watercolor paper. About one quarter of the paintings in this study were done on Whatman watercolor paper.

MATERIALS AND METHODS

A variety of methods were used to examine Russell's works, including low-power magnification, XRF, IR and UV radiation. A Bruker Tracer V-III handheld XRF was used for X-ray fluorescence analysis in this study. The infrared images were shot with a Sinar Camera, Better Light Digital Scan Camera, Model Super8K Sinaron 180 mm, f5.6 lens, R72 infrared filter (720 nm).

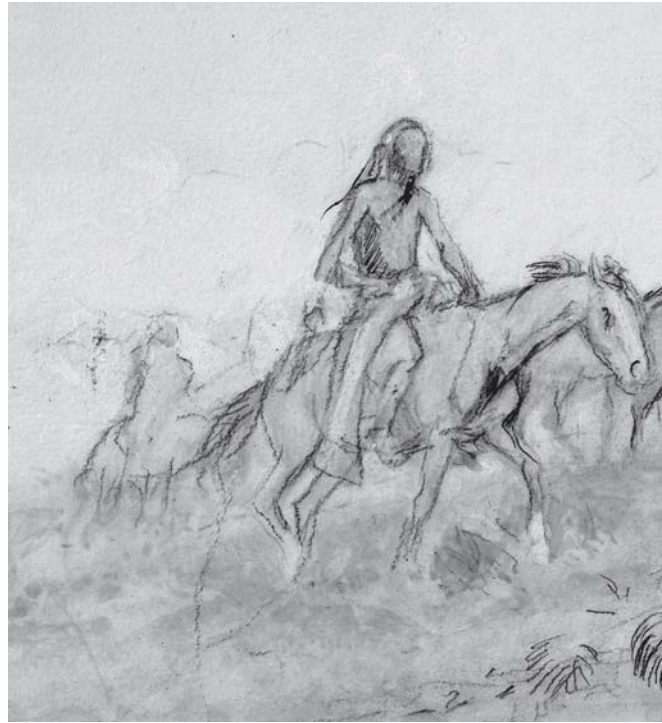
Twenty-six of Russell's watercolor paintings, chosen to represent various periods throughout his career, were examined by noting patterns and shifts in technique. The author sampled and then characterized watercolor pigments collected from Russell's watercolor paint tins, tubes, jars and pans using PLM and XRF. More than 128 samples were taken and compared to an equal number of known historic watercol-



Figure 5. Russell's Geo. Rowney Japanned paint tin (5). Many of his tins and tubes contained similar pigments. Paints are listed here in order of most prevalent; those in parentheses are fundamentally the same pigment with different names due to differences in processing or brand: vermilion, Van Dyke brown, red iron oxide (indian red, light red), Chinese white, emerald green (Paris green bright), show card white, rose madder, raw sienna, cobalt blue, cadmium yellow, yellow ochre (Mars yellow), orange vermilion, smalt burnt sienna, alizarin crimson, carmine, lemon yellow, permanent green, Prussian blue, umber, lamp black, ivory black, Hooker's green No. 1, viridian, new blue, mineral blue, indigo, Naples yellow, kings yellow, gamboge, chrome yellow, citron yellow, cadmium orange, chrome orange and geranium lake.



6A



6B

Figure 6. Infrared photograph details of two Russell works show the artist's use of the underdrawing technique: **6A**, in "The Story Teller" (ca. 1892–94), the graphite is detailed with unerased changes that remain visible; **6B**, graphite marks are loose and general in "His Wealth" (ca. 1910).

ors of various brands and characterized using PLM. Historic watercolor pigments, mostly unused in their original packaging, were purchased on eBay, sampled and compared to the Russell pigment samples to aid in characterization. It was determined that Russell had some 55 different watercolor pigments among his studio materials, 39 of which were identified using PLM and XRF (Figures 4 and 5). The number of samples is greater than the number of different colors due to redundancy of colors and multiple sampling of one sample to insure consistency.

UNDERDRAWING

Russell's use of underdrawing was somewhat unique. He rarely erased his preliminary marks, choosing instead to leave them intact, even when he changed course, giving his compositions a sense of movement. In his early works, Russell uses detailed underdrawing, as seen in "The Story Teller," ca. 1892–94 (Figure 6A). The graphite drawing serves both as sketch and medium in places equally as important as the watercolor paint. In subsequent years, as he gained greater

confidence and proficiency, his underdrawing became looser, using minimal detail to block out his design rather than a detailed rendering of his subject, as seen in "His Wealth," ca. 1910 (Figure 6B).

WATERCOLOR TECHNIQUE

Russell utilized a variety of traditional watercolor techniques throughout his career, such as wet-on-wet, dry brush, scraping, glazing, masking, blotting, application of highlights and the local use of gum arabic. As a self-taught artist, he seemed very willing to apply unconventional methods to his watercolor painting. Russell painted in both watercolor and oil, bringing lessons learned from one to the other. This is demonstrated in part by his propensity for impasto, a technique whereby paint is laid on very thickly, usually showing brush marks that required paint from tubes, as it provides easy access to large quantities of paint. In particular, Russell used Chinese white in tubes throughout his career, both for dimensional effect (Figure 7A) and as a primer (Figure 7B). He used impasto to convey drama and to heighten contrast in a scene;



7A



7B

Figure 7. Russell used Chinese white throughout his career: **7A**, in this low-magnification detail from the pipe stem of “The Story Teller,” shaped paint buttons over tube-paint contact marks give the impression of three-dimensional decorations; **7B**, transparent color dots over mounds of Chinese white make the colors especially vibrant in this detail from the saddle decoration of “Watching the Enemy” (ca. 1922).

however, the piling of paint was often unstable and evidence of frequent and widespread loss is visible on many of his watercolor paintings.

DRAMATIC CHANGE

Prior to his pivotal trip to New York City in 1904, Russell worked primarily in transparent watercolor, using opaque watercolor in a secondary role. He traveled to New York in part to obtain illustration commissions and gallery representation. While there he shared a studio with other professional artists and acquired new skills and materials. As a result, his palette became more complex and choice of paint shifted 180°. Opaque watercolor took a dominant role over transparent watercolors, which became secondary. He embraced the use of illustration board, a poor-quality rigid support faced with good quality drawing paper. Lightweight and rigid, it was ideal for watercolor painting, as it did not require the user to restrain his

paper before wetting. However, the acid migration from the core eventually stains the facing paper, and it becomes brittle and unstable. In the last decade of his life, Russell used some of the largest sheets commercially available to paint highly finished watercolor paintings. His compositions in these pieces are both abstract and representative. His foregrounds are worked very wet and loosely in transparent watercolor, while his figures are painted relatively dry and highly detailed with opaque color.

CONCLUSION

Over the course of his career, Russell mastered the medium of watercolor using artists’ quality materials. He was dedicated to their use even early in his career when they would have been difficult for him to obtain or afford. Largely self-taught, his tenacious practice enabled him to master the medium of watercolor with a combination of both traditional and unconventional

technique. His methods were informed by his experience in other artistic disciplines, as well as by repeated execution and an insatiable desire to learn. His increased skill coupled with his sense of humor and gifted storytelling ability gave him wide appeal. The technical study of his materials and techniques has laid the basic groundwork for future study. Such information will add to the growing knowledge base about Russell's watercolors in the hopes of fostering a better understanding and appreciation for this great American watercolorist.

ACKNOWLEDGMENTS

Special thanks to the staff of McCrone Research Institute in Chicago, especially Dr. Gary J. Laughlin.

REFERENCES

1. <http://www.helenahistory.org/transportation.htm>, accessed Jan. 20, 2013.
2. Weir & Pope Wholesale and Retail Druggists advertisement, Drug Column, *Helena Daily Independent*, Helena, MT., p 2, June 6, 1874.
3. http://www.helenahistory.org/transportation_overland.htm, accessed Jan. 20, 2013.
4. Tin is part of the Britzman collection, Gilcrease Museum, accession no. TU2009.39.65, Tulsa, OK.
5. Geo. Rowney & Co. paint tin, C.M. Russell Museum, accession no. S991.19.147, Great Falls, MT.

BIBLIOGRAPHY

Balston, J. *The Whatmans and Wove (Velin) Paper, Its Invention and Development in the West*, J.N. Balson: West Farleigh, Kent, 1998.

Cohn, Marjorie. *Wash and Gouache, A Study of the Development of the Materials of Watercolor*, The Center for Conservation and Technical Studies, Fogg Art Museum and the Foundation of the American Institute for Conservation, 1977.

Dahm, K., et al. *Watercolors by Winslow Homer, The Color of Light*, Art Institute of Chicago, Yale University Press, 2008.

Eastaugh, N., et al. *Pigment Compendium: Optical Microscopy of Historical Pigments*, Elsevier, Butterworth Heinemann, 2004.

Eastaugh, N., et al. *Pigment Compendium: A Dictionary of Historical Pigments*, Elsevier, Butterworth Heinemann, 2004.

Fairbanks-Harris, T., et al. *Papermaking and the Art of Watercolor in Eighteenth-Century Britain, Paul Sandby and the Whatman Paper Mill*, Yale University Press: New Haven, 2006.

Harley, R.D. *Artists' Pigments, c. 1600–1835, A Study in English Documentary Sources*, Second Revised Edition, Archetype Publications Ltd: London, 2001.

McCrone, W.C. "The Microscopical Identification of Artists' Pigments," *Journal of the International Institute for Conservation — Canadian Group*, Vol. 7, 1–2, 1982.

Peterson, L.L. *Charles M. Russell: Legacy*, Twodot Books, Falcon: Helena, Montana, 1999.

Smith, T.B., et al. *Charlie Russell & Friends*, Western Passages, Petrie Institute of Western American Art Denver Art Museum: Denver, 2010.

Taylor, J.S. *A Descriptive Handbook of Modern Water Colour Pigments*, no.43, Winsor and Newton, Ltd.: London, England, 1887.

Taylor, J.S. *Fields Chromatography, A Treatise on Colours and Pigments for the Use of Artists* (revised), Winsor and Newton, Ltd.: London, 1885.

Watercolors of Charles M. Russell. Saturday, April 14th, 2012 at 1:51 am. Russell, The Romance Maker. The Amon Carter Museum is exhibiting "Romance Maker: The Watercolors of Charles M. Russell," which is the first comprehensive show to focus on the artist's seminal position in America's 19th-century watercolor tradition. There are one hundred of Russell's paintings from the museum's own collection and from other public and private collections which document his career. The Amon Carter Museum has a particularly rich collection of artists who depicted the American West, especially Frederic Remington. AIC's Annual Meeting 39th Annual Meeting, Book and Paper Session, Wednesday, June 1, "The Watercolors Of Charles Russell: An Examination Of The Artists' Materials And Techniques On The Montana Frontier," Jodie Utter, Conservator of Works on Paper, Amon Carter Museum of American Art. 39th Annual Meeting, Book and Paper Session, Wednesday, June 1, "The Watercolors Of Charles Russell: An Examination Of The Artists' Materials And Techniques On The Montana Frontier." Russell was born in St. Louis in 1864, and moved to Montana as a young man to work on a sheep ranch and then as a night wrangler on a cattle ranch. A self-taught artist who began drawing and painting in his spare time on the ranch, he began painting full-time in 1893. 2005. Scientific Examination of Art: Modern Techniques in Conservation and Analysis. Washington, DC: The National Academies Press. doi: 10.17226/11413. —. Save. Cancel. The Scientific Examination of Works of Art on Paper. Paul M. Whitmore. The scientific examinations seeking to answer these questions generally require identification of the materials and working methods used to craft the object. Other studies seek to answer basic questions about the care of the artifact: its physical and chemical condition, causes for deterioration, and vulnerability to storage or exhibition conditions. Technical studies of paper-based artifacts tend to resemble the study of paintings, because many paper objects actually are paintings that just happen to be executed on a paper support.