Feature

Russians in Color at the Dawn of the 20th Century

Philip Gust*

An inventor who made a photographic survey of the Russian Empire under Tsar Nicholas II created near true color images that make it hard to believe we are looking at clothing worn over 100 years ago.

Of the many technologies that have contributed to costuming research, few have been as important as the invention of photography. Permanent photographs have been around since the early 1800s, but because of the processes used (they could take up to eight hours of exposure), early photographs were of still objects. It wasn't until Louis Daguerre perfected his process that the first photo of a person was taken in 1838. It was while taking a daguerrotype of a Paris street that a pedestrian stopped for a shoe shine long enough to be captured by a several-minute long exposure.

In the United States, photography of people and their clothing surged with the advent of the Civil War, when photographers set up store-front studios so that men going off to war could have portraits made of themselves in uniform. Photographers like Matthew Brady also began taking their equipment into the field to photograph men in camps and even on the battlefields.

Historical costumers know not only how clothes looked, but how they hung on the human frame from early photos that captured people in everyday life. However, what we don't know from those photographs is the colors of the clothing.

Sergei Mikhailovich Prokudin-Gorskii. Detail from early color self-portrait photograph from Russia, 1910, Part of his work to document the Russian Empire from 1909 to 1915. From Sergei Mikhailovich Prokudin-Gorskii Collection (Library of Congress)

Exploration of color photography began in the mid-19th century. Early experiments in color required extremely long exposures (hours or days for camera images) and could not "fix" the photograph to prevent the colors from quickly fading when exposed to white light.

The first permanent color photograph was taken in 1861 using the three-color-separation principle, first published by physicist James Clerk Maxwell in 1855. Maxwell's idea was to take three separate black-and-white photographs through red, green and blue filters. This provides the photographer with the three basic channels required to recreate a color image.

Transparent prints of the images could be projected through similar color filters and superimposed on the projection screen, an additive method of color reproduction. A color print on paper could be produced by superimposing carbon prints of the three images made in their complementary colors, a subtractive method of color reproduction pioneered by Louis Ducos du Hauron in the late 1860s.

In the first decade of the 20th century, a remarkable Russian photographer named Sergei Mikhailovich Prokudin-Gorskii made extensive use of this color separation technique, employing a special camera that successively exposed the three color-filtered

ISSN 2153-9022

Alleia Hamerops (Alley of Chamaerops excelsus [windmill palm]). Showing the red, green, and blue color channels as well ss the composite image. From the Sergei Mikhailovich Prokudin-Gorskii Collection. Source: Library of Congress.

images on different parts of an oblong plate. Because his exposures were not simultaneous, unsteady subjects exhibited color "fringes" or, if rapidly moving through the scene, appeared as brightly colored ghosts in the resulting projected or printed images.

The Prokudin Gorskii Three-Color Camera

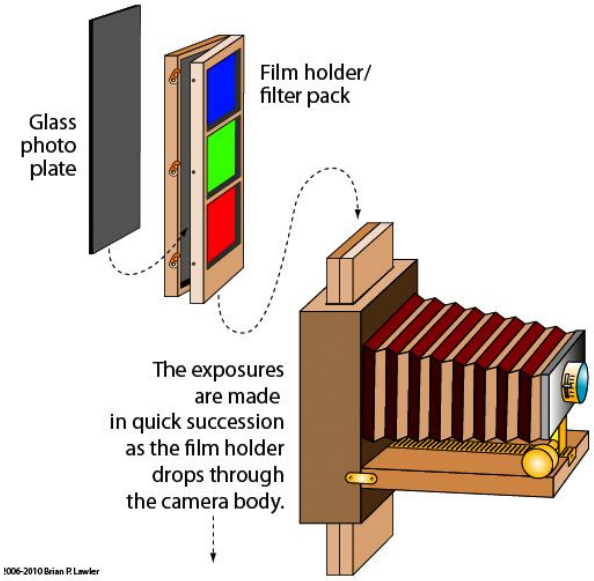


Illustration by Brian Lawler.

Prokudin -Gorskii's camera was probably made by him, fashioned after a German camera that he saw while visiting western Europe. The camera uses glass negatives that slide in a special holder through the camera during the exposures. In each film holder were three colored filters – red, green and blue. Each filter colored the light passing through the lens on its way to the glass plate. The result was a grayscale negative glass plate with three color separations imaged onto it.

Around 1905, Prokudin-Gorsky put together a plan to document the Russian Empire using his photographic system. His goal was to educate the schoolchildren of Russia about the vast and diverse history, culture, and modernization of the empire with his "optical color projections."

Tsar Nicholas II decided to back his project, and provided a specially equipped railroad-car darkroom, and provided permits that granted him access to restricted areas and cooperation from the bureaucracy. Prokudin-Gorsky traveled the Russian Empire from around 1909 through 1915, and conducted many illustrated lectures of his work. His photographs offer a vivid portrait of a lost world—the Russian Empire on the eve of World War I and the coming Russian Revolution.

1913 military map shows ethnic diversity of the Russian Empire. Source: Wikipedia.

His subjects ranged from medieval churches and monasteries, to the railroads and factories of an emerging industrial power, to the daily life and work of Russia's diverse population. For historical costumers, perhaps the most interesting are photographs of the people from the many cultures taken in by the Russian Empire.

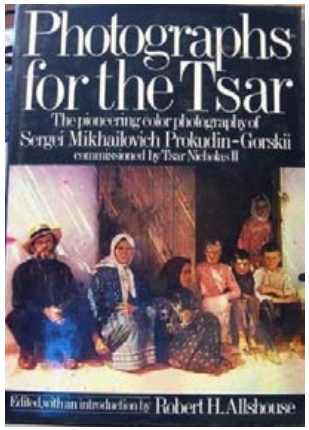
Before leaving Russia, Prokudin-Gorsky had about 3500 negatives. Upon leaving the country and exporting all his photographic material, about half of the photos were confiscated by Russian authorities for containing material that seemed to be strategically sensitive for war-time Russia. According to Prokudin-Gorsky's notes, the photos left behind were not of interest to the general public. Some negatives he gave away, and some he hid on his departure.

By Prokudin-Gorsky's death in Paris in 1944, the Tsar and his family had long since been executed during the Russian Revolution, and Communist rule had been established over what was once the Russian Empire.

Prokudin -Gorskii was a hero of Russian expatriates and nations sympathetic to their cause, but, the French government had no money to support the photographer or to purchase his photos. France was preparing for the next war, and preserving Czarist Russian history was not important at the time. The surviving boxes of photo albums, and fragile glass plates the negatives were recorded, on were finally stored in the basement of a Parisian apartment building, and the family was worried about them getting damaged.

The Library of Congress purchased the material from Prokudin-Gorsky's heirs for $3500–$5000 on the initiative of a researcher inquiring into their whereabouts. The library counted 1902 negatives and 710 album prints without corresponding negatives in the collection.

The photos have been reproduced numerous times, including a book about Prokudin-Gorskii published in 1980, *Photographs for the Tsar: The Pioneering Color Photography of Sergei Mikhailovich Prokudin-Gorskii Commissioned by Tsar Nicholas II* (ISSN-13: 978-0803769960).



The Library of Congress has made its Prokudin-Gorsky collection of images available online through a searchable interface. They provide several image formats, including:

- Glass negatives: 1,902 b&w triple-frame images made with color separation filters
- Sepia-tone prints: 705 photos for which no glass negatives exist (reproduced from Prokudin-Gorskii's albums)
- Album pages showing all 2,433 sepia-tone prints and captions
- Modern color composites: 1,902 digital images made from the glass negatives in 2004
- Modern color renderings: 122 digital files made from the glass negatives in 2000-2001.

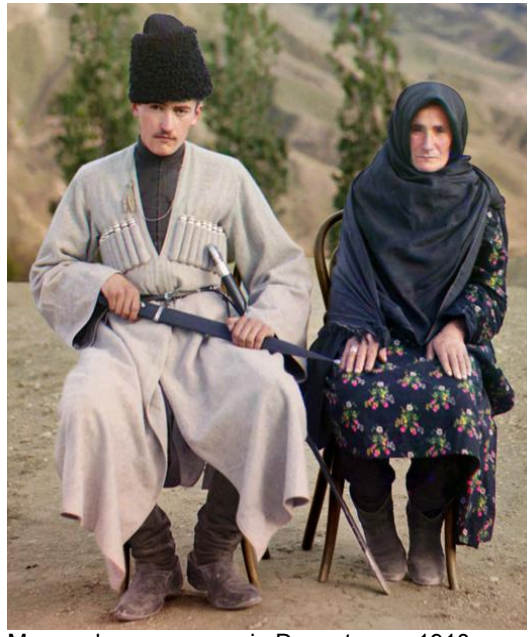
The advent of image processing software like *Adobe Photoshop* and *The GIMP* now makes it possible for modern-day costumers and other researchers to do their own reconstructions from the separations available from the Library of Congress website.

The amazing color images by pioneer photographer Sergei Mikhailovich Prokudin-Gorskii provide a rich source information about costumes of many different ethnic groups from the Russian Empire of the early 20th century that show us in vivid detail how the clothing actually looked. Prokudin-Gorskii would be proud that his legacy of teaching others through his "optical color projections" lives on.

Philip Gust *enjoys sci-fi and fantasy costuming, and has particular interests in props, special effects, and prosthetic makeup. He also costumes in historical periods, including Regency, Victorian, and early 20th C.*

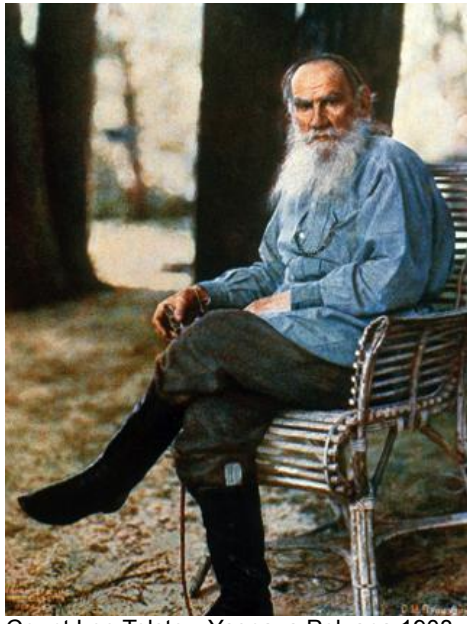
Armenian woman in nation dress on hillside near Artvin (present day Turkey), c. 1910.

Emir Seyyid Mir Mohammed Alim Kahn, Emir of Bukhara (present-day Uzbekistan), c. 1910.



Man and women pose in Dagestan, c. 1910.

Aart woman in purdah, Samarkand, present-day Uzbekistan), c. 1910.



Count Leo Tolstoy, Yasnaya Polyana,1908.

Boy at Tillia-Kari mosque, Samarkand (present-day Uzbekistan), c. 1910.

Isfandiyar Jurji Bahadur, Kahn of the Khorezm protectorate (Khiva, part of Uzbekistan), c. 1910

Georgian woman, c. 1910.