

The Alchemy of Artists: From Pigments to Paintings

Barbara Berrie, Senior Conservation Scientist, National Gallery of Art (USA)

Abstract

Great painters not only can draw, they have an intuitive grasp on how to use color for visual and emotional impact. I will discuss how three artists have used color in their works. These are the American artists Winslow Homer, the Dutch artist Vincent van Gogh, and the Venetian artist Giovanni Bellini.

Homer and van Gogh based their understanding of color on the theories of Michel-Eugène Chevreul. Homer owned a translation of Chevreul's "The Principles of Harmony and Contrast of Colours," and he said that it was his Bible. He annotated several pages and made tables in the back in which he listed primary and secondary colors with their complements. In Homer's watercolors we see his use of both complementary and harmonious contrast to set a scene with either an emotional charge or calmness. Van Gogh's introduction to color theory was through the works of Charles Blanc. He wrote to his brother, Theo, about his reading of Blanc's books, which were used widely in art schools. Blanc used Chevreul's theories as the basis for his writing, but his discussions leaned to complementary contrast rather than harmonious contrast. Bellini painting around 1500, worked centuries before Chevreul published his mind-changing work, but his understanding of the power of placing complementary pairs of colors together and of the laws of color-mixing were intuitive.

Van Gogh's letters are full of references to his desire for specific colorants and we know that Homer was equally judicious in his choice of painting materials, which changed over time. Bellini's palette was enriched by colorants we do not often see

used as pigments for paint and he excelled in mixing them. Chemical analysis of paint used by these artists shows how they employed pigments and examples will be presented. Each of these three artists' works provoke strong reactions: their emotional and aesthetic appeal is due not only to the subject matter but to these artists' mastery of the mixing and arrangement of color.

Author Biography

Barbara H. Berrie is senior conservation scientist at the National Gallery of Art, Washington, D.C. She received her B.Sc. (Hons) in chemistry from St. Andrews University, Scotland and her Ph.D. on electron transfer reactions from Georgetown University. She was awarded a National Research Council Postdoctoral Fellowship at the Naval Research Laboratory where she investigated the reaction of carbon dioxide with low-valent palladium compounds. She has worked at the National Gallery since 1984. Dr. Berrie has always been interested in the alchemy of turning base materials into art: she is now involved in studying the materials and painting methods of artists and analysis of materials in works of art in order to understand the artist's original intention, and address issues of authenticity and preservation. She has used chemical analysis in the study of over 300 works of art in all media, including works on paper, easel paintings, and sculpture. She has published on paintings by Dosso Dossi, Gerard David, and Orazio Gentileschi among others and on the watercolors of Winslow Homer. Berrie is a Fellow of the International Institute for Conservation. She is the editor of the forthcoming volume of Artists' Pigments that will be published by the National Gallery of Art.