

## CCI in Action

### Delving Into the Paintboxes of Paul Kane and David Milne

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From 1994 to 1995, CCI's Analytical Research Laboratory analyzed the contents of the paintboxes of two prominent Canadian artists: Paul Kane (1810-71) and David Milne (1882-1953). Paul Kane most likely used his paintbox from 1820-1860, while David Milne started painting with oils sometime in the early 1900s.

Analysis of the materials in these paintboxes provides the basic data needed for scientific investigations into provenance or authentication. Understanding the artist's materials also helps conservators select appropriate treatments and suitable display and storage conditions for the art works.

#### Kane

Paul Kane was a Canadian painter of Irish descent who resided in York (Toronto) from 1819, when his parents emigrated to Canada, until 1836, when he left Canada for the United States and Europe. He began studying painting in 1830 in Toronto, and four years later painted the first of his numerous portraits of the citizens of Cobourg, Ontario. However, little more is known about his early work. Kane's travels in the United States and Europe lasted from 1836-1845, after which he returned to Toronto briefly in 1845 before setting off to travel through the Northwest. Over the next three years, he travelled from the Great Lakes to Vancouver Island. He returned from this adventure with a bulging portfolio of sketches, primarily romantic landscapes and First Nations subjects. In fact, Kane is known primarily for these sketches and paintings he produced of First Nations people, and for his book *Wanderings of an Artist* published in 1859. After 1859 he rarely painted, due possibly to his increasing blindness, which became noticeable for the first time that year. Major collections of Kane's work are held by the Royal Ontario Museum, Toronto, and the Stark Foundation, Orange, Texas.

The analysis of the contents of Kane's paintbox was undertaken as part of a study of two early Kane portraits, *Freeman Schermerhorn Clench* (NGC 30486) and *Eliza Clarke Cory Clench* (NGC 30487) for the National Gallery of Canada. Samples of pigments and media from the paintbox were also included as part of the project.

Kane's paintbox contained apothecary jars filled with media and pigments (see Figure 1). Fragments of shell gold (that is, powdered gold sold as a drop of gold watercolour held in a mussel shell) and granules of resin were also present along with paintbrushes, a Conté crayon, charcoal and chalk. Many of the pigments were powdered and were wrapped in



Figure 1. Paul Kane's studio sketch box (property of the National Gallery of Canada).



Figure 2. David B. Milne's paintbox (loaned to CCI by David Milne Jr.)



fragments of newspaper from Mobile, Alabama: one was dated 1844. Other pigments were purchased as hard pellets or drops. Labelled jars indicated that some of his materials were from New York and London, England. Some of the New York materials could date from as early as the late 1820s. Kane received his first artists' materials from W.S. Conger, for whom he worked in the late 1820s as a decorative furniture painter in Toronto. Conger had bought the materials while on a trip to New York City. The English supplies would most likely have been bought by Kane during his 1842 trip to England.

These materials were analyzed using scanning electron microscopy and x-ray microanalysis, infrared spectroscopy, x-ray diffraction, polarized light microscopy, and, to a limited extent, gas chromatography/mass spectrometry and liquid chromatography.

A number of interesting results were obtained. For example, one of the bundles in Kane's paintbox contained a mixture of drying oil, silicates and iron oxide, matching the composition of the components identified in the ground layers of the two Clench portraits examined for the National Gallery. Large, coarse particles were present in these ground layers as well as linseed oil, iron oxide pigments, lead white and lead carbonate.

A second bundle contained only the red-brown pigment. It was identified as red, iron oxide pigment consisting of the iron oxide compounds hematite and maghemite. While hematite is a commonly identified component of red iron oxide pigments, the occurrence of maghemite is more rare. Scanning electron micrographs of a dispersed sample of this pigment revealed that it had morphological properties similar to a sample of a 19th-century Mars red from Roberson and Co., a synthetic iron oxide pigment.

### **Milne**

David Milne, the youngest of 10 children, was born in 1882 in a log farmhouse in Saugeen Township, Bruce County, Ontario. When he was 21, he set off for New York City to attend art school. Milne's first exhibit was in 1909 with the American Watercolour Society. He continued exhibiting every year thereafter up to 1922. In 1914-15 Milne made summer trips to the Hudson Valley, where he settled in 1915. After returning to Canada in 1918, Milne was appointed an official war artist and in 1919 painted war scenes in Britain, France and Belgium. Milne's painting also took him to the Adirondacks in New York State, Ontario, and various other locations. During his career, he created 3,000 paintings and as many colour drypoints, etchings and drawings. His artistic achievements and writings made a major contribution to Canadian and American art. Milne died in 1953 in Bancroft, Ontario. Most of Canada's major art galleries hold some of Milne's works, however two major collections are held at the National Gallery of Canada, Ottawa, and the Art Gallery of Ontario, Toronto.

Milne's paintbox, graciously loaned to us by his son, David Milne Jr., contained a wooden palette, two palette knives, 34 brushes, 31 tubes of Winsor and Newton oil colours, a small tin cup and a paint stained cloth (see Figure 2). The Winsor and Newton paints present in Milne's paintbox were: Permanent Violet, Alizarin Orange, Ivory Black, Rose Madder, Genuine Alizarin Crimson, Vermilion, Field's Orange Vermilion, Yellow Ochre, Cadmium Yellow, Viridian, French Ultramarine, Zinc White, and Burnt Sienna. The labels on the paint tubes help date some of the paints more precisely. When Winsor and Newton moved their head office from Rathbone Place to Wealdstone in 1938, the information printed on their labels changed (see Figures 3 and 4). Milne's paintbox contained tubes labelled both before and after the move.

Information on the materials in the paint box was obtained using the methods listed above for the Kane paintbox analysis. The Milne paintbox analysis, a valuable addition to the research into his oil



Figures 3 and 4. Some of the paints can be dated by their labels. Winsor and Newton moved from Rathbone Place to Wealdstone in 1938. Some of the paints in Milne's paintbox predate this move, while others were purchased after they had moved to their new location.

painting methods and materials, has helped to determine what pigments, media and extenders were used by the manufacturer in the paints. This will, in turn, help determine what Milne mixed into the paints to achieve the effects he desired.

The paintboxes of Paul Kane and David Milne are tremendous resources. They provide us with a set of reference materials to their unadulterated paints. By comparing the materials in the paintboxes to the works by these two important Canadian artists, we can learn a great deal about their working techniques.

## Further Reading

J. Russell Harper. *Paul Kane's Frontier*. Toronto: University of Toronto Press, 1971.

John R. Gayer. "The Analysis and Treatment of Two Portraits Attributed to Paul Kane (1810-1871)," *Journal of the International Institute for Conservation — Canadian Group*, vol. 21 (1996), pp. 16-29.

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