gluing sequence through the almost-transparent vacuum bag.

The original wooden bracket on which the clock had rested had been lost some time ago. However, the complete set of brass mounts belonging to the bracket had been saved. A good indication of the overall size and shape of the wooden element was obtained by arranging the mounts according to photographs of brackets from the same period. A decision was then made to replicate the bracket. A model was made with Ethafoam® to simplify the initial fitting. Once a satisfactory shape was achieved with the model, a wooden block was laminated. The finished form was produced using the table saw, the bandsaw, hand saws, chisels, gouges, and sandpaper. Because the detail of the bracket's marketry decoration had been lost with the wooden element, new Boulle work was not applied to the bracket. Instead, a mottled appearance was achieved using oil stains and dammar varnish.

Several unexpected hurdles in the treatment of the clock delayed its completion. The discovery of what appeared to be bronze disease in the crevices of the mounts necessitated a series of metal tests, a second cleaning, and the treatment of the mounts with benzotriazole. The clock's feet were deemed too unstable to support its weight, so a secondary support system was devised. This system supported the clock from behind, and was designed to be inconspicuous under normal viewing conditions. The clock mechanism itself required additional support because the wooden structure on which it rested had been broken in the past and had been improperly set.

The delivery of the clock to the Royal Ontario Museum in July of last year brought to an end the treatment of an object that had involved many people at CCI. It is somehow fitting that an object that originally had been the work of many trades was successfully conserved and reassembled through the combined efforts of conservators, scientists, support staff, interns, and Fellows. ♦

The Canadian Artists' Painting Materials Project

by John M. Taylor

Information on artists' painting materials has a number of different applications for conservators, art historians, and law enforcement agencies. Identifying the pigments and media in a painting may help an art historian to date a work. A curator may want to know if the paint in a painting is characteristic of the type the artist is known to have used at a particular point in his or her career. Conservators can use the information to select appropriate treatments and suitable display and storage conditions for works. As well, the information can assist police agencies with art fraud investigations.

During the past 20 years, the Analytical Research Services laboratory at CCI has received many requests to assist with problems of provenance or of conservation by performing scientific examinations and analyses on paintings. While international laboratories have assembled a considerable amount of information on traditional paints used by European artists, there is a definite lack of information on the painting materials — particularly twentieth-century materials — used by Canadian artists.

To address this problem, CCI has initiated a new research project: The Canadian Artists' Painting Materials Project (CAMP).

The objective of this project is to collect and analyze samples from well-documented paintings by Canadian artists, with particular emphasis on the 20th century. As part of the project, we will

(1) analyze and document the pigments, the media, the cross-section structure, and, where possible, the support of works by various artists;

(2) study reactions between pigments and media (i.e., soap formations), and drying oil reactions that may be indicative of age or deterioration;

(3) examine and document actual or impending conservation problems unique to a particular artist; and

(4) search artists' and related historical records for materials information.

We will coordinate these activities with exhibitions to facilitate sampling and to allow us to examine large collections of a particular artist's work. In addition, samples will be collected, when feasible, when paintings by Canadian artists are undergoing conservation treatment in Canadian conservation laboratories. The samples required are quite small — about the size of a typewriter period.

We are currently in the initial phase of the project. Studies are in progress on samples collected from works by Tom Thomson, David Milne, William Berczy, and Paul-Émile Borduas. In addition to analyzing and documenting the materials, the scientific staff are examining conservation problems that may be unique to each artist. To date, we have uncovered some interesting and unexpected information: for example, Tom Thomson's use of an unusual mixture of lead sulfate and zinc white (see *CCI Newsletter*, No. 7, March 1991, pp. 10-12), and the formation of "soaps" from pigments reacting with binding media in the different artists' materials.

We anticipate that the Canadian Artists' Painting Materials Project will be ongoing at CCI for many years to come. The project will be limited to the works of three or four artists, or to a particular group or school, during each phase. Over time, the institute will be able to assemble a considerable data bank of information that will be useful to museums and art galleries. The input, suggestions, and advice of conservators and curators on future directions of the project are particularly important and are welcome. Please write to the author at CCI. ♦