

CCI Newsletter

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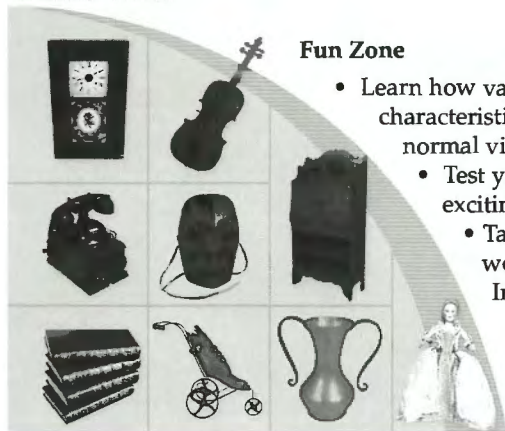
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Treatment of a Weathered Portrait of the *Ellen A. Read*

by Peter Vogel, Senior Conservator, Treatment and Development Division - Fine Arts,
and Carol MacIvor, Senior Communications Advisor, Information Services and Marketing

The *Ellen A. Read* was the largest vessel ever built in Yarmouth, NS. Launched in 1884, she was the first vessel with a spike bowsprit which projected 23 m (75 ft.) from the bow. She had an illustrious career sailing the Seven Seas, successfully weathering many a storm before being taken out of service in 1903. Unfortunately, once retired she was unable to withstand the elements and within a few years was broken up for scrap. She was commemorated by an unknown late 19th century marine artist who portrayed her at sea with full sails. This *Portrait of a Ship "Ellen A. Read"* is owned by the Yarmouth County Museum and Archives.

When the weathered painting came to CCI for treatment, the canvas was badly damaged. It had large tears

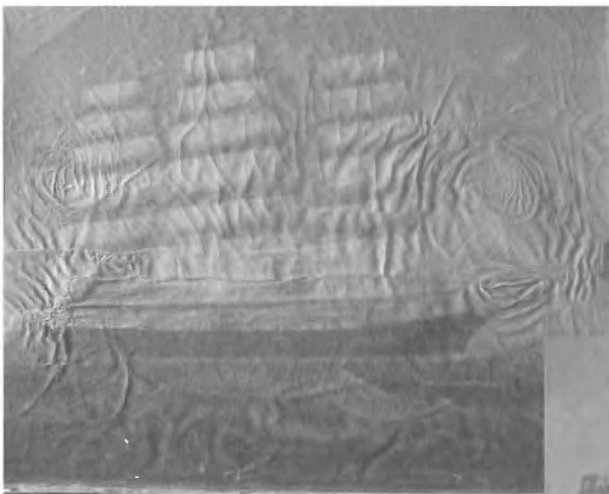
and wrinkles, and previous exposure to water had caused it to shrink to an extreme degree. Paint losses had occurred along the tears, and there was also a significant accumulation of dirt embedded on the painting's surface. Fly specks had penetrated the unprotected paint, accelerating the aging process and obscuring the artist's craftsmanship along with many details of the ship's rigging.

Painting conservator Peter Vogel took on the treatment assignment. Along with the previously mentioned problems, he also had to deal with damage caused by earlier restorations — patches of linen and a variety of tapes which had been glued to the back of the painting meant to prevent the development of further tears.

The initial phase of treatment consisted of securing the fragile sections of paint along the edges of tears with an acrylic resin. Next, the back of the canvas

was cleared and all tape removed, and then the painting had to be flattened. Because it was damp, it had to be treated damp. The first attempt was made using a wet blotter and weights applied to damaged areas, but this was not successful. Other conventional methods (e.g. the Dutch stretching technique normally used during moisture application to facilitate handling and control of the canvas) were not practical because damage to the canvas was too extensive and tears ran in all directions. Likewise "the Willard Table" — designed for dehumidification and drying processes — was not suitable for this canvas because the unrestrained painting had to be monitored on both sides during the flattening and realignment process. It became clear that traditional treatment approaches were not possible in this case. Peter says "it was obvious that each step in the treatment of this painting was going to be a challenge."

It was eventually decided that the best approach would be to position the painting face down on a pane of glass and spray it to the required saturation level with a mister containing a small amount of ethyl alcohol glycol. This returned the painting to its original size. It was then possible to realign the tears while monitoring the front of the canvas. Once aligned, the canvas was covered with



The Portrait of a Ship "Ellen A. Read" before and after treatment.





Detail, during treatment.

To remove the embedded grime and oily deposits on the painting, a combination of different solvents and emulsions in varying concentrations was employed. The fly specks and paint splashes were removed with a scalpel under magnification. Special attention was paid to the areas around the ship's sails and rigging.

Paint losses along the tears were filled with acrylic gesso and then retouched with watercolour paint followed by thin glazes of dammar resin

and powder pigment. Finally, a protective coating of dammar resin in toluene was sprayed over the painting's surface.

This ship portrait then rejoined its companion, the *Charles Baker*, which had been restored previously at CCI. As he worked on the *Ellen A. Read*, Peter says he acquired new information and became more familiar with "the erratic behaviour of torn canvas." As well, he says it was "a privilege to work on such a fine piece of maritime art which is contributing to the understanding and appreciation of marine history in Nova Scotia."

PeCap (polyester monofilament) and flattened with layers of weighted blotters.

Due to the extent and severity of the tears, it was necessary to adhere the painting to a rigid support. A soft foam-core support laminated with acid-free cardboard was chosen because it would not interfere with the weave of the canvas. Several layers of Liquitex acrylic gesso were applied to all sides of the support, and a wooden strainer was glued to the back to ensure that the panel remained flat.

The search for a suitable mounting adhesive also presented a challenge. The adhesive would have to handle well, have low viscosity and thermoplasticity, and be easily removable. Tests were carried out on didactic panels until a suitable mixture was obtained. This mixture (which contained starch paste, rabbit skin glue, and a small amount of Jade 403) was brushed evenly onto the foam-core board. While it set, the painting was removed from the glass and transferred to its new support. Final adjustments and realignment of threads were done before the adhesive had set fully. Then an electric tacking iron was used to flatten the painting under moderate heat and pressure.

Yarmouth County Museum and Archives

by Eric J. Ruff, Director/Curator, Yarmouth County Museum



Exterior of the Yarmouth County Museum. Photo: Fred Hatfield.

The Yarmouth County Museum was established in 1958, and moved to its current site (a former Congregational Church dating to 1893) in 1969. The Archives, which were created in the mid-1980s, are situated next to the museum in a building that dates to about 1895. The final part of the complex is the former summer home of Alfred Fuller (the original Fuller Brush Man), which operates seasonally as a historic house museum.

The museum now has one of the largest collections of ship portraits in Canada. Of its approximately 125 paintings, all but one have a direct connection to Yarmouth (which was home to a large merchant fleet in the second half of the 1800s). Although its main focus is on the seafaring heritage of the area, the museum also houses rare musical instruments, glass, furniture, china, toys, and so on. The photographic and documentary archive is the largest non-institutional one in Nova Scotia.

Re-creating Historic Wallpaper

by Carol MacIvor, Senior Communications Advisor, Information Services and Marketing

The analytical research capabilities of CCI have, over the years, been applied to some interesting problems. One good example is a project that developed when Thérèse Charbonneau of the City of Hamilton Museums contacted CCI to ask if it would be possible to re-create some turn-of-the-century wallpaper from a photograph. The wallpaper in question was a bold pattern of flowers, butterflies, and exotic birds that had hung in T.B. McQuesten's bedroom in Whitehern Historic House and Garden¹ in Hamilton.

At the beginning of the project, Ken Heaman (curator of Whitehern) supplied CCI with an original 35-mm colour transparency of a picture of the bedroom that had been taken in the late 1960s or early 1970s. Unfortunately there was some perspective distortion in the slide. The photograph of the wall section had been taken at an angle, making it difficult to establish the details of the wallpaper pattern. But scientific documentation technologist Carl Bigras used digital image processing to get around that difficulty.



Original image of the bedroom, photographed circa 1970 by Ernie Seager.

With a digital scanning camera, Carl was able to rectify the picture so that the pattern would appear head on. Using the actual measurements of the room, along with the exact width of the wallpaper (which could be discerned from a small original sample that had been supplied), it was then possible to create a picture of the pattern repeat and store it on a CD.

When the imaging process was complete, staff at the historic house used Carl's pattern to have duplicate wallpaper manufactured by a firm in Toronto. This replica wallpaper has now been hung in Whitehern, where it adds to the unique degree of historical accuracy in the restoration of the T.B. McQuesten bedroom.

And did the procedure provide an accurate reproduction? While searching the Archives of the Imperial Home Decor Group (distributor of Sunworthy wallcoverings) in Brampton, Ontario, Ken Heaman found a sample of the original pattern. It matched the re-creation perfectly!



The rectified image. The wall now appears head on instead of at an angle.



Rectified wallpaper pattern. This was the only complete section from the original image.

1. Whitehern was the former residence of the Hon. Thomas Baker McQuesten (1882–1948), who was responsible for the development of the Hamilton parks system, the beautification of the city's northwest entrance, the founding of the Royal Botanical Gardens, the re-location of McMaster University to Hamilton, and the construction of the Queen Elizabeth Way highway. The home was bequest to the city of Hamilton, Ontario, in 1968.

Collaboration Key to Removing Stain

by Debra Daly Hartin, Senior Conservator, Treatment and Development Division - Fine Arts

When CCI was approached to treat a silkscreen on linen that had a large water stain, it was seen as an opportunity to explore stain removal techniques in the context of paintings on unprimed fabric supports. Conservation treatment techniques in this area were not well established nor had they been highly successful, and better treatment options were definitely needed. The project was truly a collaborative effort in which the expertise and skills of conservators, conservation scientists, and conservation interns specializing in the treatment and research of paintings, textiles, and paper were brought together.

The Legend of Red Lake Ontario (#8/50) by Josh Kakegamic is a large (2.63 by 1.155 m) seven-colour silkscreen print on a loosely woven linen fabric. The print was in relatively good condition except for the unsightly tide lines that had resulted from a ceiling leak. Water-soluble components in the fabric had leached from the centre of the affected area (leaving this area lighter in colour) and been redeposited in a dark tide line at the wet/dry interface.

The first step in the treatment was to develop a procedure that would reduce the dark tide line to a degree that would render the silkscreen 'exhibitable'. The procedure was based on local suction treatment. Initial testing was undertaken with a suction disc that had been designed by Stefan Michalski (a conservation scientist who is

Manager of CCI's Preventive Conservation Services). This disc provided suction pressure that was high enough to move liquids through fabrics without forming new tide lines, and was fitted with a fibre-optic light to help align the stain over the small work area. Although initial testing with this device was



Detail of stained area before treatment.

successful, the disc's small area was not appropriate for treating such a large stain. A Museum Services Corporation Suction Table (often used by textile conservators) would be more suitable for treating large areas, but it produced a lower suction pressure than the disc. However, due to the characteristics of the linen support (loosely woven and sized), the lower pressure was sufficient to reduce the stain without creating new tide lines. Treatment was therefore carried out with this suction table.

Conventional solvents were tested on the stain, but had no effect. Based on her paper bleaching

research, conservation scientist Season Tse suggested trying sodium borohydride — a mild-to-moderate-strength reducing bleach that does not degrade cellulose. This proved to be successful in decolourizing the darkest part of the tide line. The bleach was applied by brush and, while under suction, an airbrush filled with deionized water was used to rinse residual bleach, decolourized products, and some diffuse staining from the fabric. In areas where further bleaching was required, fine control was



Detail of stained area after treatment.

achieved by applying a 'mist' of the bleach with an ultrasonic mister, a technique that had been refined by textile conservator Jan Vuori in a concurrent project involving stain removal on *Oceanie, la Mer*, a silkscreen by Henri Matisse.

The treatment was completed with the assistance of two conservation interns, Geneviève Saulnier and Agata Sochon. Geneviève carefully used the capillary action of small damp blotters, combined with

suction and an airbrush rinse, to reduce further the small areas of the tide line that remained visually disturbing. She also repaired several small tears along the tacking margin using a reweaving technique that was essentially invisible from the front surface.

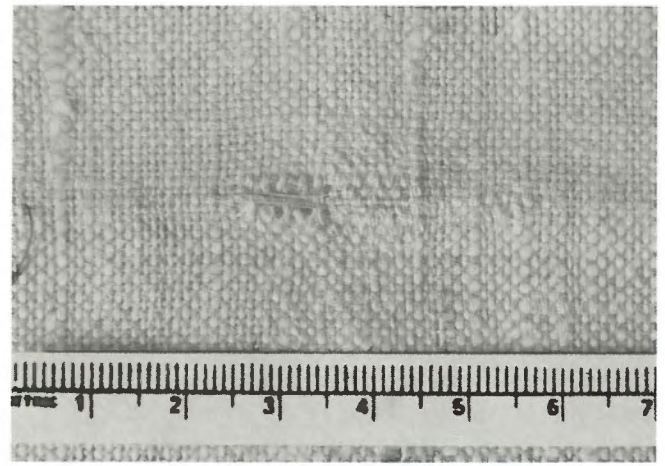
Even with the tide lines taken care of, the areas of canvas that had become lighter in colour due to the water damage remained quite noticeable. To deal with this problem, the lighter areas were inpainted. Inpainting is a technique in which colour is applied to areas of paint loss to re-integrate the image; it is a common technique in treating paintings but is seldom considered in treating textiles. Before proceeding with this procedure, tests were undertaken by Agata to determine whether or not a pigment applied to the exposed canvas could be removed using suction techniques, should removal be necessary in the future. The tests proved that such inpainting would be 'reversible'. Geneviève then prepared a diluted 'stock' colour using tube water-colours and applied it to the surface of the warp threads in dots or thin lines. Capillary movement along the thread dispersed and unified the colour. Just enough colour was applied to integrate the overall tone of the fabric support.



Applying the rinse with an airbrush.

Once inpainting was completed, a new stretcher was constructed for the silkscreen to replace the missing auxiliary support. The new stretcher was sealed with Marvelseal (a polyethylene/aluminum/nylon laminate) to prevent acids in the wood from migrating into the artwork, and then a heat-set, non-impregnated sailcloth was stretched over it to act as a taut overall support for the silkscreen. The artwork was hand-stretched over this sailcloth and stapled with rust-proof staples to the reverse side of the stretcher. Finally, a protective backing board was attached to the reverse of the stretcher and a travel frame was constructed to provide protection during travel, handling, and storage.

This object crossed the boundaries of several traditional conservation disciplines, and its treatment required a collaborative and innovative approach. At CCI, where conservators of different specialty areas and conservation scientists work in close proximity, this type of intermingling of creative ideas, diverse knowledge, and experience can produce new and more effective treatment techniques.



Reweaving the tear, right side completed.

Further information on this and related treatments can be found in the following articles:

Daly Hartin, D., S. Tse, and J. Vuori. "A Collaborative Treatment: Reducing Water Stains on a Silkscreen on Linen." pp. 293-298 in *ICOM Committee for Conservation 12th Triennial Meeting Lyon 29 August - 3 September 1999: Preprints Volume 1*. London, UK: James & James (Science Publishers) Ltd., 1999.

Vuori, J., D. Daly Hartin, S. Tse, A. Maheux, and A. Ruggles. "Local Stain Removal from "Oceanie, la mer" by Henri Matisse: The Development of a Reducing Bleach Technique using a Suction Disk, Ultrasonic Mister, and Airbrush." pp. 164-175 in *Conservation Combinations: Preprints of a Conference (North American Textile Conservation Conference 2000)*. Asheville, NC: Biltmore Company, 2000.

More information on
CCI and its activities
can be found on
CCI's World Wide Web pages:
<http://www.cci-icc.gc.ca>

CCI in the Field

by Carol MacIvor, Senior Communications Advisor, Information Services and Marketing

In addition to the work carried out in CCI's own laboratories, many staff members participate in projects in other locations.

Nancy Binnie, a conservation scientist at CCI, participated in three field trips in 2001 related to managing resources at submerged archaeological sites. An accomplished scuba diver, her work included carrying out activities that are part of monitoring programs designed to track long-term in situ deterioration, as well as looking at possible ways to stabilize previously excavated shipwreck sites. One of the commonly used techniques being considered as a long-term preservation option is the reburial of artifacts and endangered sites.

The first site visit was to the Fortress of Louisbourg. In conjunction with the Underwater Archaeological Services Unit of Parks Canada, monitoring activities were carried out here on the wrecks of the *Célèbre* and the *Prudent* — two French warships sunk during the final siege of the Fortress of Louisbourg in 1758. As recreational diving activities are restricted in Louisbourg Harbour, wrecks in this area have not been stripped of artifacts (unlike sites outside the harbour boundary where treasure hunting is permitted under Nova Scotia law). Divers who want to visit Louisbourg Harbour can do so, but must be accompanied by an approved guide, and must follow strict zero-impact diving requirements. The monitoring program that was conducted included an assessment of certain artifacts or structures for any change in position and physical damage, as well as an assessment of the condition of corrosion-concretion layers on cannons and the erosion rate of the exposed timbers. Two marine

archaeologists from the U.S. National Park Service also participated in this work; they were part of a professional exchange with Parks Canada staff who had visited the *USS Arizona* site at Pearl Harbour earlier in 2001.

The second field trip was to the Bruce Peninsula/Fathom Five National Marine Park located in Tobermory, Ontario, where measurements were taken of the corrosion rate of iron samples in six underwater test stations. This work was part of a continuing project designed to complement the Park's shipwreck monitoring program in which a number of the historic wrecks are surveyed annually to detect any changes to the timber structures and certain artifacts (changes are an indication of destabilization of the sites). Knowledge of the long-term corrosion rates, as well as the factors that destabilize the metal and timber components, provides information about how long the shipwrecks will remain intact for the thousands of divers who visit the park each year. Work here included recovering iron samples for laboratory analysis, repairing a damaged sample holder, general photography, and assisting the park with monitoring program assessments. The two oldest corrosion test stations have been in situ for 5 and 7 years, and samples have usually been recovered annually. The other four smaller test stations were installed in 1999 and will not be recovered and analysed until 2004.

The third site visit was to the Restigouche National

Historic Site (NHS) near Campbellton, New Brunswick. Again working for the Underwater Archaeological Services Unit of Parks Canada, survey work was carried out on two French gun ships — the *Machault* and the *Bienfaisant* — both sunk in the Restigouche River in 1760 during the Seven Years' War. The *Machault* site had been excavated previously (between 1969 and 1972), at which time Parks Canada retrieved and conserved many artifacts and a large section of the vessel. Many of these artifacts can be seen at the Restigouche NHS visitor centre, and an exceptional collection of ceramics from the *Machault* has been exhibited at the Fortress of Louisbourg. The *Bienfaisant* site had never been excavated or surveyed previously.

The main purpose of this site visit was to locate the two wrecks and determine the best way to stabilize the shifting river sediments, which periodically cover or expose the remaining structures and artifacts. Survey work for other scuttled vessels was also carried out using target locations found through historical research. Samples of



Tom Buckley (Park Warden, Fathom Five National Marine Park) carrying out monitoring measurements on the wreck of a small steam tug, the *Alice G.*

marine organisms including algae were taken from the ships' timbers, as well as water samples; these samples were analysed and the results will be used to help define the preservation conditions and the long-term risks from biodeterioration.

Work on this project was hampered by strong currents and poor visibility in the shallow, intertidal, sediment-rich water; the river bottom was also strewn with pulp logs, trees washed down the river, and other debris. In spite of these complications the *Machault* site was readily located

(although it was partially covered with more sediment than had been observed during a visit 2 years earlier). But even after 3 days of searching the *Bienfaisant* remained elusive. Unfortunately, it is impossible to know for sure exactly why this wreck could not be found. It could be that the search was conducted in the wrong location (after all, modern methods such as GPS were not available in the 1970s when the site was first located) or it could be that the profile of the river bottom had undergone significant changes and was now obscuring the position of the wreck.

Conducting work on-site is an important aspect of CCI's professional commitment to heritage preservation, and the Institute is pleased to offer a wide range of such services. For more information, please contact:

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Tate and CCI Sharing Expertise

by Jacqueline Ridge, Senior Paintings Conservator, and Dr. Joyce Townsend, Senior Conservation Scientist, Tate, London, United Kingdom

As part of Tate's quest to understand the materials and techniques of the paintings of the Pre-Raphaelite Brotherhood, we recently spent some time at CCI with Dr. Leslie Carlyle (Senior Conservator, Materials Historian in the Conservation Processes and Materials Research Division). In 1 week of concentrated work we accomplished a great deal.

The paintings of the Pre-Raphaelite Brotherhood have been a subject of interest for many over the years — at least in part because of the availability of primary source material such as letters and biographies. The startlingly bright colours, the distinctive paint application, the legendary use of zinc white as a ground with paint applied on top wet-in-wet, and the pristine condition of the works are all cited frequently and uncritically in the art historical literature. Tate conservation department is currently in the midst of an extensive research project to examine, record, and interpret the actual materials found in these artists' key works.

One specific material issue is the well-documented use of copal resin both in the paint and as a varnish. Unfortunately, an initial analysis^{1,2} of samples taken from a range of works documented as including copal resin failed to confirm its presence. However, refractive index measurements of paint that were made at Tate gave high readings — which clearly suggested that linseed oil was not the only binder and that copal was a material worth investigating in this context.

At this point it was also clear that a better practical understanding of why artists might add copal to paint was needed. This could be achieved by making reconstructions of typical paint layers we had observed on the actual works. But unlike CCI, Tate does not currently³ have the facilities or expertise to produce the oils and copal varnishes needed for this work.⁴ Hence we contacted CCI. It would also be a distinct advantage to use the very materials



Jacqueline Ridge preparing paint according to recipes such as would have been used by the Pre-Raphaelite painters in England.

that were already being analysed and researched as part of Dr. Carlyle's work at CCI.

Our aims were to prepare copal paints using glazing pigments typically found in Tate's Pre-Raphaelite paintings⁵: rose madder, emerald green, cobalt blue, and natural ultramarine. Pigments produced with 'pre-modern' technology were selected from Tate's and CCI's

materials archive. Copal resin was added in three ways:

- as a copal oil varnish directly to the dry pigment;
- as dry pigment mulled into linseed oil with copal oil varnish added; and
- as dry pigment mulled into linseed oil with a copal megilp added.

The paints were hand-ground to give a workable glaze colour, and the amounts of pigment, oil, copal varnish, etc. were recorded (this allowed us to work out exactly how much copal was needed in practice to make a useful paint — a point on which documentary sources are frustratingly silent). During the preparation of these reconstructions on carefully selected priming layers we noted the impact that the copal (in its various guises) and diluent made on colour, handling, and drying time. The results were extremely colourful when complete! Once the paint was dry, parts of the boards were varnished with the copal oil varnish.

We generated two sets of reconstructions, one to be kept by CCI and one to travel back to London. The next step in this work will be to record the following information at Tate by means of colour measurements:

- the impact of the different primings beneath the glaze colours;
- the impact of copal addition versus no copal;



Ultramarine blue pigment being ground in oil.

- the effect of copal-containing varnish; and
- the refractive index of the various copal formulations.

The boards will then be artificially aged at Tate using a combination of light and heat aging to simulate 150 years, since the Pre-Raphaelites were working in the 1850s. Detectability studies and comparisons of analytical methods for aged copal materials can then be made, in collaboration with Dr. Klaas Jan van den Berg of the Netherlands Institute of Cultural Heritage, Amsterdam (NIC). This in turn will benefit other institutions attempting to analyse these rather intractable materials.

This approach to materials research allows us to combine the expertise of Dr. Leslie Carlyle in materials history, the technical evidence from Tate's significant collection of Pre-Raphaelite paintings, and the scientific resources of the NIC. The results, when published in 2003–2004, will be of use to conservators, conservation scientists, and art historians alike, and will also be made available to the wider public through books and lectures.

1. van den Berg, K.J., J. van der Horst, and J.J. Boon. "Recognition of Copals in Aged Resin/Oil Paint and Varnishes." pp. 855–861 in *ICOM Committee for Conservation 12th Triennial Meeting Lyon 29 August – 3 September 1999: Preprints Volume 2*. London: James & James (Science Publishers) Ltd., 1999.
2. Hackney, S., J. Ridge, J.H. Townsend, K.J. van den Berg, and L. Carlyle. "Visual Deterioration in Pre-Raphaelite Paintings." pp. 57–59 in *Deterioration of Artists' Paints: Effects and Analysis* (a joint meeting of the working



Dr. Joyce Townsend painting out samples of artists' mediums such as those in use at the time of the Pre-Raphaelite painters.

groups Paintings 1 and Paintings 2 of the International Council of Museums - Committee for Conservation and the Paintings Section of the United Kingdom Institute for Conservation (edited by A. Phenix). London: British Museum, 2001.

3. Tate is completing its design brief for a new Collections Centre. The visit to CCI gave us a welcome opportunity to observe another building of comparable size and function.
4. Carlyle, L., N.E. Binnie, G. van der Doelen, J. Boon, B. McLean, and A. Ruggles. "Traditional Painting Varnishes Project: Preliminary Report on Natural and Artificial Aging and a Note on the Preparation of Cross-sections." pp. 110–127 in *Varnish: Material - Aesthetics - History: International Colloquium, Braunschweig, 15–17 June 1998*. Braunschweig, Germany: Herzog Anton Ulrich-Museum, 1999.
5. Hackney, S., R. Jones, and J. Townsend. *Paint and Purpose: A Study of Technique in British Art*. London, UK: Tate Publishing, 1999, pp. 74–85.

CCI Interns

by Carol MacIvor, Senior Communications Advisor, Information Services and Marketing

CCI is pleased to provide internship opportunities to students and graduates of conservation programs. Not only do these individuals get to hone or acquire new skills and research directions, but they add to CCI's knowledge base. This regular feature of the CCI Newsletter highlights the work of recent interns.

Note: We regret to announce that the Institute is currently unable to accept new interns due to problems with our building infrastructure. However, as soon as this situation is remedied, we intend to reinstate the internship program. Watch the Learning Opportunities section of the CCI Web site for updates.

When **Hildegard Heine** arrived at CCI for a professional development internship, she brought with her a wide variety of education and experience. She had studied art history and archaeology at the University of Bonn in Germany and the University of Barcelona in Spain, and completed a 3-year apprenticeship as a cabinetmaker. Following this she had taken the conservation program at the University of Applied Sciences in Cologne in Germany, where she had specialized in the Conservation of Wood and Ethnographic Material. Before and during her studies in Cologne she had worked in several private and museum conservation laboratories in Germany, Switzerland, and Spain, and done a 7-month internship in the Organic Section of the British Museum. For her thesis, she had surveyed the archaeological and ethnological collection of the Institute of Old American History and Ethnology at the University of Bonn, developing preventive conservation measures to improve collections storage.

Hildegard's time at CCI has been spent mostly in the Objects Laboratory of the Treatment and Development Division. After participating in the workshop *Adhesives for Textile and Leather Conservation: Research and Application* conducted by Jane Down, she enhanced her knowledge of the treatment of ethnographic materials and conservation approaches to them by carrying out work on an Inuit skin bag.

The bag belongs to the McCord Museum of Canadian History in Montreal. It was collected by a missionary in the Ungava Bay Region of northern Quebec (Nunavik), and is estimated to be about 130 years old. Made from untanned skin from the feet of Canada geese, it is a pouch-like bag with a drawstring top. Or at least that was its original shape. The aging process and inappropriate storage conditions resulted in severe deterioration, multiple tears, and moth damage.

The first step in treating the bag was to return it to its original shape, and reshaping could only be done when the bag was damp. However, the bag's degraded condition precluded the use of high humidity for this purpose as moisture might cause further damage. Instead, the bag was placed into a specially constructed, small, closed chamber along with beakers of a mixture of distilled water and ethanol, for short periods. Once damp, it was gradually reshaped.

The opening at the top of the bag was too small to allow a hand to be inserted. To get around this problem, Hildegard had to be innovative. A small replica of the bag was first made out of cotton. This was placed inside the skin bag and then partially filled with sand to aid the reshaping process. Smooth-contoured tools such as spoons and ladles were also inserted into the bag to assist reshaping. A special device was built to hold these tools so that the hands remained free to manipulate the skin

bag from the outside. Temporary facings were adhered to the outside of the skin to stabilize the tears during the reshaping process.

Once the bag was reshaped as much as possible, the tears were backed to stabilize the object and to avoid losing more material. The final step was detail work: inpainting, consolidating damage to the keratin layers of the skin (which had separated in some places), and cleaning. A padded mount and a box were also made to support and protect the bag while in storage.

In addition to work in the Objects Laboratory, Hildegard spent some time in the Preventive Conservation Services Division. She accompanied Siegfried Rempel on several site visits in Canada and assisted him in providing advisory services to institutions to assist them in implementing preventive conservation strategies. She also attended the workshops *Emergency and Disaster Preparedness for Cultural Institutions* (conducted by David Tremain and Deborah Stewart in Kingston in March 2002) and *Caring for Collections* (conducted by Stefan Michalski at the University of Victoria in April 2002).

Some other interns who have been at CCI in the past months include: Anna Krimmel, a graduate of the Academy of Fine Arts in Vienna (Master of Conservation - Restoration with specialization in Paintings Conservation), in the Treatment and Development Division - Fine Arts (a professional development internship).

Editor's Note

These three regular features appear in each issue of the *Newsletter*. "The History of Conservation" looks at conservation treatments of the past, "The Science of Conservation" examines recent scientific analyses that have been conducted at CCI, and "On Display" highlights recent conservation treatments. Watch for them in future issues!

The History of Conservation

The Contribution of Michael Faraday

by Robert L. Barclay,
Senior Conservator, Treatment
and Development Division - Objects

Museum conservation is an old discipline with a new twist. As long as people have been collecting things, they have also taken measures to preserve them. Restorers have been employed for centuries by rich patrons, such as merchants, kings, popes, and other well-heeled types.

But it was not until the 19th century that the causes of deterioration were studied extensively, and it was archaeology that provided most of the impetus. As the Iron and Bronze ages of Europe and the

Classic Middle East yielded to the trowel and the pickaxe, many of the items retrieved from their safe beds of soil, sand, and clay deteriorated dramatically. Why was this happening and what could be done to stop it? Restorers could not answer these questions. However, as chemical investigations were made, the mysterious processes of dissolution and decay were slowly but surely unravelled — and eventually controlled.

Although Michael Faraday is best known for his work with electricity and magnetism (the unit of capacitance, the Farad, bears his name), he was typical of the new breed of Victorian investigator who applied science to the understanding of deterioration.

In 1843, the Athenaeum Club (an exclusive gentlemen's club in London) appealed to him for help; the fine leather bindings of many of their treasured volumes were literally rotting away. The exposed spines in particular were turning into a fine, orange powder. What could be done? Yes, they could have the books rebound, but what was causing this? Faraday went to work and soon discovered that their newly installed gas lighting was producing high levels of sulphur dioxide, which in turn was reacting with the tanning agents in the leather, thus causing this 'red rot'. Faraday's intellectual approach to the understanding of deterioration processes was a significant step in the development of conservation as a science.

The Science of Conservation

CCI's New Variable-pressure Scanning Electron Microscope with X-ray Spectrometers

by Ian N.M. Wainwright, Manager,
Analytical Research Laboratory

Scanning electron microscopy and X-ray microanalysis are important techniques in conservation. They can provide information on the composition, morphology, and structure of a wide range of materials and artifact samples,¹ and are essential for many of the projects CCI undertakes.

The Institute has had a scanning electron microscope (SEM) since 1973. The first one was replaced in 1985, and funding was recently received from the Department of Canadian Heritage to replace the now-aging 1985 system. The new microscope (an Hitachi S-3500N variable-pressure SEM) was delivered in March 2002; the old one (an Hitachi S530) has been loaned to the Canadian Museum of Nature where it will be used in the museum's research and public programs.

The new SEM is equipped with Oxford Instruments X-ray energy and X-ray wavelength spectrometers, a Robinson backscattered electron



Jane Sirois with CCI's new Hitachi S-3500N variable-pressure SEM.

detector, an environmental secondary electron detector, a 5-axis motorized stage, and a cooling stage. The X-ray wavelength spectrometer is a more sensitive detector for chemical

elements and also has much better X-ray spectral resolution than the X-ray energy spectrometer. The two detectors combined provide sensitive, accurate, and fast analyses of chemical elements with atomic number 5 (boron) and higher in the periodic table of elements. The variable-pressure SEM also allows samples to be examined without having to be coated with a conductive layer — a procedure that is required with

conventional, high-vacuum SEMs. This means that a wider variety of samples can be examined, including entire artifacts. With the cooling stage, even wet or viscous samples can be studied.

The manufacture, acquisition, delivery, and installation of this system was a success thanks to the collaboration of Hitachi High-Technologies Canada (Hitachi Scientific Instruments), Oxford Instruments,

Canberra-Packard Canada, Public Works and Government Services Canada, and CCI's procurement, financial, and building services staff.

1. Wainwright, I.N.M. "Scanning Electron Microscopy and X-Ray Microanalysis at CCI." *CCI Newsletter* No. 12 (September 1993), pp. 8-9. [Also published as « Microscopie électronique à balayage et micro-analyse aux rayons X à l'ICC », in the same issue.]

On Display

Exhibition of Religious Art

by Carol MacIvor, Senior Communications Advisor, Information Services and Marketing

The Art Gallery of Nova Scotia has recently reprised a special exhibition of religious art from the 15th, 16th, and 17th centuries. Judy Dietz (Curator and Manager of Collections at the Art Gallery of Nova Scotia) explains that, due to popular demand, the exhibition "An Expression of Faith: Sacred Art of Centuries Past" has again been mounted at the gallery as a re-creation of a small Gothic chapel. The centrepieces of the exhibit are three 16th-century wooden polychrome pieces that were treated at CCI over a period of 15 years.

The sculptures were originally owned by the Roman Catholic Archdiocese of Halifax and were located in the Chapel of Our Lady of Sorrows in Halifax, Nova Scotia. Five carved relief sculptures, two support columns, and altar bases were sent to CCI in July 1980 for examination and eventual treatment. The three largest sculptures represent stations of the cross: *Christ Bearing the Cross*, *The Crucifixion*, and *The Lamentation of Christ*. They are attributed to the Flemish school and first appeared in Halifax in the early 1840s in the Chapel Built in One Day.

Over time, the three stations of the cross had become badly damaged by insects — a condition that greatly threatened the integrity of the pieces. Because of their extreme historical significance, CCI agreed to carry out treatment on condition the pieces would be placed in a public museum or art gallery in Nova Scotia. It was also agreed that CCI would make cast replicas to replace the originals in the Chapel of Our Lady of Sorrows.

The actual work began in 1984 with the fabrication of fibreglass replicas of all five figurative sculptures. These were completed in 1986, at which time they were returned to the Archdiocese of Halifax and installed in the Chapel of Our Lady of Sorrows.

Most of the treatment took place from 1986 to 1995. It began with the

painstaking removal of numerous layers of overpaint, after which the insect damage was consolidated. This was followed by filling in losses, re-attaching the head of one sculpture, inpainting the fills, and, finally, applying a thin protective wax coating.

This process was the longest treatment ever undertaken at the Institute, and involved dozens of people from a variety of disciplines. Senior Conservator Bob Arnold, who was closely involved with the work, says that it took more than 9000 hours to complete the project.

Following treatment, the sculptures were sent to the Art Gallery of Nova Scotia in January 1997. Their first exhibition ran from May 1998 to May 1999; the current one runs until the fall of 2002.



The polychrome sculpture
The Lamentation of Christ
before and after treatment.



CCI Launches a New Web Site

by Carol MacIvor, Senior Communications Advisor, Information Services and Marketing

CCI has a new Web site! "Preserving my Heritage" (www.preservation.gc.ca) was launched on May 17, 2002, to coincide with International Museum Day the next day. I spoke with Bill Peters (CCI's Director General and Chief Executive Officer) and Raymond Lafontaine (Director of Information Services and Marketing) about the new site.

Q: What is the purpose of the new Web site?

R. Lafontaine: "Preserving my Heritage" is a unique site aimed at helping Canadians find out what they can do to preserve and conserve the things they own or have inherited. We also hope to raise public awareness about the importance of conservation of collections and to inform people about what CCI is doing. We decided to call it "Preserving my Heritage" rather than "Preserving our Heritage" to underline the importance of individual responsibility. One's personal treasures amount to personal heritage.

B. Peters: When individuals preserve their heritage, they are also preserving the nation's heritage so there is a collective and inclusive national aspect to it as well.

Q: What is the difference between the new site and CCI's existing one?

R. Lafontaine: The CCI main site is designed for professional conservators, and it contains a lot of technical information. The new site distills the technical information so that it is more relevant to the needs of the general public. Visitors will learn what can be done at home to care for and preserve their family heirlooms.

Q: Is this approach — reaching out to the general public — a departure for CCI from its more traditional activities?

B. Peters: This public outreach adds to our traditional work in treatment, research, training, and the dissemination of information. So, yes, it is a bit of a departure from the kinds of activities we have engaged in for the last 30 years.

We see this outreach happening in other countries and other



Members of the "Preserving my Heritage" development team review a poster promoting the new site. From the left: Mary-Lou Simac, Shanna Ramsay, Raymond Lafontaine.

organizations involved with conservation. It stems from a growing realization in the profession about the need to open up the boundaries in order to encourage a wider involvement of people in preserving heritage. International organizations, such as the International Council of Museums (ICOM) and the International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), realize that the participation and support of the general public is needed in order to obtain adequate resources to

ensure long-term preservation of our cultural heritage. Through this Web site, CCI will be providing information and tools to encourage people to become engaged in protecting items in their homes and communities.

We are making use of the latest Internet technology on this site to let people see what is going on at CCI. In designing and developing the site, we were conscious of trying to capture the unique nature of our activities. Anyone who visits the Institute walks away captivated by the magic that takes place in the labs. It is not possible to bring large numbers of people to CCI, but we can use the reach of the World Wide Web to allow them to share in the experience.

Q: What is on the "Preserving my Heritage" Web site?

R. Lafontaine: There is definitely an element of fun to it. Although conservation is a serious business, we wanted to attract younger people to the profession. The main focus of the site is how to care for a wide range of articles — everything from textiles and furniture to clocks and musical

instruments. But we have tried to provide the educational information in an entertaining manner. Our hope is that when people visit the site, they will be attracted by a "wow" factor and then rush out to tell their friends.

The heart of the site is the **How to Care for...** section which opens with a 3-D image of a house. By taking the 3-D tour, visitors can view a variety of objects found in a typical home while navigating from room to room. Information on caring for a particular object can be obtained by clicking on

it. As navigating in this manner requires Flash technology (and some visitors may have computers that do not support this), the section also includes text links to all care sheets.

After reading up on a number of objects, visitors can test their knowledge with Preservation Quest! — an exciting online game that is part of the **Fun Zone**. Preservation Quest! makes use of the same 3-D house image, but this time clicking on an object brings up a question concerning its care along with four possible answers. At the end of the game players receive a score, a ranking for their preservation savvy, and a certificate of completion.

Still in the **Fun Zone**, visitors can use an interactive camera to learn about some of the photographic methods commonly used in conservation, take a virtual tour of CCI's laboratories,

create and send free e-Postcards to tell friends about the site, and download two screensavers.

The **Before and After Gallery** contains images of a variety of objects before and after treatment, along with information about the treatment process. It is often amazing to see the transformation that occurs from the time an artifact arrives at CCI until it leaves.

Other features of the site include a section on **Amazing Facts** that shows how equipment and tools



used in other professions have been adapted for use in conservation treatments, and links to a variety of other preservation-related sites.

And finally, because we hope to spark interest in young visitors about a career in this relatively new field (conservation professions have evolved in a really meaningful way in Canada only within the last 35–40 years), the site also provides information on how to become a conservator or conservation scientist — including what kind of training is required and where it is available.

Many CCI staff members have contributed to this new site, and we hope that all readers of the *CCI Newsletter* will take a few minutes to visit it. And let us know what you think! Your feedback will help us direct the continuing growth and development of "Preserving my Heritage."

CCI Aids Recovery of Avro Arrow Models

by Nancy Binnie, Conservation Scientist, Conservation Processes and Materials Research

The development of the Avro Arrow CF-105 included the building and launch of eleven one-eighth scale models of the plane. Although all prototypes, blueprints, etc. for the Arrow were destroyed in 1959 when the project was terminated, these models were left to rest at the bottom of Lake Ontario. For the last 5 years, the Aerospace Heritage Foundation of Canada (AHFC) and Arrow Recovery Canada Inc. (ARC) have carried out research, side-scan sonar surveys, and fundraising in an effort to find nine of the models that were launched from Point Petrie near Picton, Ontario.

The survey work by AHFC and ARC is being carried out under an archaeological permit required by the Province of Ontario (issued

each year, valid for a 1-year period). As the wreckage of these aircraft models constitutes a "heritage wreck" under the definition of the province, any recovery activities must be carried out using accepted archaeological and conservation practices.

As part of this project, CCI has completed a conservation plan for recovery phase operations which includes underwater recovery activities, surface assessment, cleaning, and transport.

AHFC and ARC are currently searching the lake bed around Point Petrie. Target areas are based on different interpretations of flightpath trajectory data and anecdotal information from ground observers present when the launches were carried out.

Any models recovered will be stabilized and studied, and then turned over to the Canada Aviation Museum in Ottawa or one of the other aviation museums that have offered to help restore and display an Arrow model. After many years submerged in water, recovered models are likely to require extensive restoration. This work will be carried out under the guidance of conservation or aircraft preservation professionals, with most hands-on work done by volunteers.

More information on the Avro Arrow CF-105 and this recovery project can be found on the Web sites of ARC (www.avroarrow.org) and AHFC (www.ahfc.org).

Alicia Prata Retires

by Vicki Davis, Reference Librarian, CCI Library

After 14 years as Manager of the Canadian Conservation Institute Library Services, Alicia Prata retired on January 16, 2002. Under Alicia's leadership, the library was transformed from a branch of a larger system to a fully functional, self-sufficient library. She also directed the conversion from a card catalogue and other manual systems to an almost completely automated environment.

Alicia was born in Hong Kong and graduated in Earth Sciences at the University of Hong Kong. After receiving a teacher's diploma, she taught geography to high school students for 2 years.

Looking for a career change, Alicia undertook studies in Library Science at the University of California (Berkeley) and received her Master's degree in 1966. Her first job was at Stanford University Libraries as a cataloguer in political science and education. A desire for a change in climate led her to work as serials cataloguer at Boston's MIT Libraries in the Engineering and Science faculties in 1970. "I was tired of sunny blue skies. Snow appealed to me," she says.

Alicia's parents retired and moved to Canada in 1973. She decided to join them and accepted a position as Head of Serials at the University of Winnipeg. Even though she made good friends there, she regretted the move to such a cold city and in 1978 moved to Ottawa as Head of Technical Services at the Geological Survey of Canada.

In 1980, she accepted a promotion as Head of Technical Services for the National Museums of Canada (NMC) Libraries. NMC Libraries had five branches, of which the Canadian Conservation Institute (CCI) was

one. When NMC was dissolved in October 1987, the libraries were divided among the national museums and two national programs, CCI and the Canadian Heritage Information Network (CHIN). The staff was also dispersed to these agencies.

Alicia chose to join CCI. "I knew a bit about the Institute, liked the easygoing people and preferred to work with a small research staff. I knew that resources were a problem for this library, but I preferred that battle," proclaims Alicia.

Alicia faced many challenges in developing the CCI library. At the time of her arrival, the library was tucked away in a small space on the second floor and there were only two part-time staff — Vicki Davis (reference librarian) and Maureen Clark (library technician). Soon after that CCI negotiated for and received the NMC Libraries museology collection, and Alicia faced the challenge of moving the library to a larger space on the first floor and integrating the conservation and museology collections.

Although the CCI library had previously depended on a centralized service for administration, acquisition of books and serials, and cataloguing, at this time it chose to become independent rather than becoming a branch of the Department of Communications library. Because there were no positions for the cataloguing and acquisitions functions, Alicia hired contractors and eventually term personnel for the next 8 years. It was not until 1995 that both positions were staffed by permanent employees. "It was a struggle to constantly train new people," admits Alicia.



When reviewing her career, Alicia says "I consider transforming the library from a branch to a self-sufficient library my biggest achievement." But the change from manual to automated systems has also been significant. With the help of Raymond Lafontaine, Director of Information Services and Marketing, the library catalogue was placed on the CCI Web site in 1999 and has proven very popular with external users.

One of the most exciting times during Alicia's work at CCI was when the library received a significant increase in resources to support the museology collection in the early 1990s. The New Museum Policy funds helped Alicia guide the development of a bibliographic database on museology, something that had been planned by NMC. In developing the BMUSE database, Alicia worked first with CHIN and eventually with the ICOM Information Centre and the Direction des Musées de France. BMUSE indexes international museology books and journals, mostly in English and French.

It has been available through CHIN (<http://www.chin.gc.ca>) since 1994.

Alicia has enjoyed working at CCI, particularly with her own staff. "In my last job, I have had the best staff," she claims. "We have had mutual respect." She has also enjoyed learning about conservation and talking to people about their projects. "They are dedicated and talented people."

For her retirement, Alicia plans to move to Vancouver. After 23 years in Ottawa, snow has lost its appeal. She would like to explore the British Columbia coast and mountains, visit friends and relatives in eight countries, and volunteer teaching children. She may even return to the academic library scene. "You teach in academic libraries," she says. "In special libraries such as CCI,

you serve. I prefer the teaching aspect." Alicia will also continue her 40-year hobby as an amateur photographer and hopes to travel to Namibia and photograph the sand dunes.

We will miss her gentle smile and her calm and common-sense approach. Enjoy your new adventures, Alicia!



New Learning and Development Officer

CCI is pleased to announce that Gisele Thomson has recently joined our staff as new Learning and Development Officer. Gisele holds a degree in Education from the University of Ottawa, and had been involved in outreach education with the Department of Canadian Heritage for 4 years prior to arriving at CCI. Her previous work included developing an interactive learning Web site "New Employee Orientation Program" for Human Resources, and producing resource guides for educators in the Canadian Studies Program. She was also Chair of the Interdepartmental Working Group on Educational Materials.

Gisele is available to help with all your Outreach Programming needs. She can be reached by telephone at (613) 998-3721 ext. 169 or by e-mail (cci-icc_edu@pch.gc.ca).

Please join us in welcoming Gisele.

CCI's Emergency Response Service

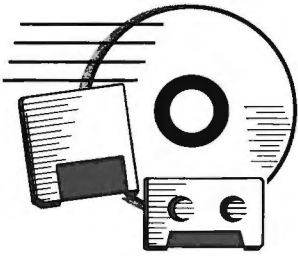
In the event of an emergency, museums and related institutions within Canada are invited to call CCI for advice on the salvage and recovery of collections.

CCI's number is (613) 998-3721

Calls can be made any time of the day or night. Inform the CCI operator that you have an emergency to ensure your call is given top priority. During normal working hours your call will be passed immediately to someone who can assist you. During non-working hours, the operator will request the following details from you:

- your name, institution, location, and a telephone number where you can be reached
 - the nature of the collection affected
 - the type, extent, and severity of damage
 - what action, if any, has been taken so far
- This information will be conveyed to a CCI staff member by means of a call-up list, and you will be contacted as soon as possible.

If on-site conservation assistance is required, institutions are encouraged to contact local conservators first; they will be able to respond more quickly and will also be more familiar with local resources. However, in the event that local expertise is not available, CCI may provide on-site assistance.



Preservation of Electronic Records:
New Knowledge and Decision-making

La préservation des documents électroniques :
Information récente et prise de décisions

Symposium 2003

September 15 to 18 • Du 15 au 18 septembre

Announcement

The Canadian Conservation Institute, the National Archives of Canada, and the National Library of Canada will be hosting **Symposium 2003 - Preservation of Electronic Records: New Knowledge and Decision-making** in Ottawa, Canada, from September 15 to 18, 2003.

During the last quarter of the 20th century, heritage collections have included increasing amounts of information stored on videotapes, audiotapes, computer tapes and disks, CDs, and DVDs. Although archives and libraries have the largest amounts of this material, much is also found in museums and even galleries. The purpose of the symposium is to increase awareness of the issues surrounding these records by bringing expert and leading-edge opinions to a large audience including small and medium-sized archives, libraries, and museums. The focus will be on making decisions and finding practical solutions that can be implemented immediately. The symposium will be of interest to anyone responsible for the preservation of collections including electronic records.

The program for the symposium will be based on the chronological decisions that need to be made as electronic records come into the heritage institution. Papers emphasizing new knowledge, case studies, or critical reviews will be presented on the following topics.

Value Criteria: What criteria can be used to identify records that should be preserved? How do libraries, archives, museums, and galleries approach this? Are they fundamentally different?

Authenticity Criteria: What criteria can be used to assess the authenticity of records that will be preserved? How do libraries, archives, museums, and galleries approach this? Are they fundamentally different?

Factors to be Considered in Developing a Preservation Strategy: What professional and institutional requirements must be considered in developing a preservation strategy? Does current information technology meet specific preservation

requirements? What is the likely nature and quantity of future acquisitions?

Preservation Strategies for Information Content:

What is the best strategy to preserve information content — maintain old technology, emulate old technology, migrate records within proprietary format, convert to a standard format, or create a persistent object?

Media Knowledge: How do media (CDs, DVDs, magnetic tapes and disks) deteriorate? How should media be stored (including survey methodology) and handled? What is the longevity of media? What is the best method of recovering media from a disaster? How is good quality media selected?

In addition to formal papers, posters will be presented in the traditional fashion on boards, or electronically in the form of Web pages.

Public Information Day

The symposium will kick off with "Preservation Quest: How to preserve your home movies, CDs, videos, and more" — a public information day on Sunday, September 14, 2003. The purpose of this event will be to increase awareness among the public that their own personal electronic records (videos, CDs, audiotapes, etc.) have a short lifetime and to provide them with advice on preserving these items. It will be a lively and fun day including demonstrations, presentations, tours, films, and booths where the public can talk to the experts.

CANADIAN
CONSERVATION
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For more information on the symposium and registration, please contact:
Christine Bradley
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5 Canada
tel.: (613) 998-3721; fax: (613) 998-4721
e-mail: cci-icc_publications@pch.gc.ca

CCI Makes It Into *The National Enquirer*

by Robert L. Barclay, Senior Conservator, Treatment and Development Division - Objects

Although CCI's activities have often been reported in international journals and other prestigious publications around the world, for many years the Institute lacked the final 'laurel of excellence'. But fate provided this accolade when our name finally appeared in *The National Enquirer*, under the heading "Junk violin he found in attic worth \$500,000." The violin in question had indeed been brought into our labs. We had examined it visually and then suggested the owner contact a reputable violin dealer for an appraisal. Unfortunately, when subsequently speaking to a reporter from *The National Enquirer*, our visitor must have been rather economical with the truth. It was reported in that august journal that we had carbon dated the violin and had shown it to be 287 years old — an altogether astonishing figure for carbon dating, where plus or minus the nearest

25 years might be considered excellent. We had also apparently taken X-rays of the instrument and had pronounced it "in perfect condition," although none of us remembered having done so. Our radiography log and negative files recorded no such work. Hmmm.

The result of all this very welcome publicity was a flood of enquiries from all over North America, and even further afield, regarding violins carrying such ubiquitous labels as "Antonius Stradiarius Cremonensis Faciebat Anno 1721" (made by Antonio Stradivari of Cremona in the year 1721). Such factory fiddles, made in Germany, France, and Czechoslovakia and labelled in honour of the great maker, have fooled the unwary for many years. Mind you, even if "all that glisters is not gold," we are still willing to look over your old fiddles and give advice about their care and preservation, because you never know...

CCI Fee Schedule Effective May 2000

Canadian Non-federal Heritage Institutions:

Most services are provided free of charge for non-federal heritage institutions, organizations, museums, art galleries, archives, and libraries as well as the Canadian Museums Association, the Canadian Association for Conservation of Cultural Property, provincial/territorial museum associations, and archaeological and archival associations. Fees for exceptional projects requiring major staff time, materials, and training services are negotiated individually. Site visits and surveys cost \$250 per person (for a visit of up to 2 days), and \$100 per person for each additional day. The fee for environmental monitoring equipment is \$50 (plus shipping and insurance costs).

Canadian Federal Heritage Institutions and Conservation or Museology Training Programs:

Fees are negotiated on a project-by-project basis,

with partial to full cost recovery, for museums, art galleries, archives, and libraries under federal jurisdiction, university and/or college conservation and museology training programs, provincial/territorial conservation services, and public authorities or religious organizations with collections accessible to the public.

Other Clients:

For other Canadian and foreign clients, fees are based on full cost recovery.

All service requests must meet criteria governed by CCI's mandate.

For further information, please contact:

CCI Client Services

Tel. (613) 998-3721

E-mail: cci-icc_services@pch.gc.ca

Upcoming Workshops

CCI's educational initiatives are an essential means of communication. They allow us to share the results of our current research and conservation practices with you, the heritage community, while simultaneously learning about your emerging needs and concerns. We are pleased to provide the following workshops in collaboration with various Canadian heritage associations and organizations across Canada during 2002. Additional workshops will be posted on our Web site at www.cci-icc.gc.ca [under Learning Opportunities] as they are confirmed.

Spring 2002

Modern Information Carriers

(NB: this workshop is for CCA staff only)

Host(s): Canadian Centre for Architecture
Location: Montreal, QC
Date: June 10–11, 2002
Contact(s): Karen Potje, Head,
Conservation/Preservation Department
Tel.: (514) 939-7000
E-mail: kpotje@cca.gc.ca
Leader(s): Joe Iraci, Tom Strang

Summer 2002

Paintings

Host(s): Association of Newfoundland
and Labrador Archives
Location: Queen's College, St. John's, NF
Date: September 19–20, 2002
Contact(s): Mary Ellen Wright, Professional
Development and Outreach Officer
Tel.: (709) 726-2867
E-mail: anla@nf.sympatico.ca
Leader(s): James Bourdeau, Debra Daly Hartin

Modern Information Carriers

Host(s): Archives Association of British Columbia
Location: Vancouver Public Library, Vancouver, BC
Date: September 19–20, 2002
Contact(s): Rosaleen Hill, Conservation Coordinator
Tel.: (614) 709-9263
E-mail: rhill@aabc.bc.ca
Leader(s): Joe Iraci, Tom Strang

Emergency and Disaster Preparedness for Cultural Institutions

Host(s): Archives Society of Alberta
Location: Calgary, AB
Date: September 20–21, 2002
Contact(s): Michael Gourlie,
Executive Director/Archives Advisor
Tel.: (780) 488-2763
E-mail: mourgourlie@connect.ab.ca
Leader(s): David Tremain, Deborah Stewart

Fall 2002

Preservation Management for Seasonal Museums

Host(s): New Brunswick Museum
Location: Saint John, NB
Date: November 1–2, 2002
Contact(s): Bruce Thomson, Program Manager
Tel.: (506) 643-6293
E-mail: gbthom@nb.aibn.com
Leader(s): Deborah Stewart

Mount-making

Host(s): Museum Association of Newfoundland
and Labrador
Location: Lester Garland House, Trinity, NF
Date: November 2–3, 2002
Contact(s): Ute Simon-Okshevsky, Executive Director
Tel.: (709) 722-9034
E-mail: uokshevsky@nf.aibn.com
Leader(s): Robert Barclay, Carole Dignard

Modern Information Carriers

Host(s): Canadian Centre for Architecture
Location: Montreal, QC
Date: November 4–5, 2002
Contact(s): Karen Potje, Head,
Conservation/Preservation Department
Tel.: (514) 939-7000
E-mail: kpotje@cca.gc.ca
Leader(s): Joe Iraci, Tom Strang, Paul Bégin

Industrial Artifacts

Host(s): Ontario Museum Association
Location: National Exhibit Centre,
South Porcupine, ON
Date: November 8–9, 2002
Contact(s): Cathy Blackburn, Professional
Development Program Manager
Tel.: (519) 571-1576
E-mail: cate@golden.net
Leader(s): George Prytulak

Aboriginal Facilities Development

Host(s): Prince of Wales Northern Heritage Centre
Location: Yellowknife, NT
Date: November 8–10, 2002
Contact(s): Rosalie Scott, Conservator
Tel.: (867) 873-7664
E-mail: Rosalie_Scott@ece.learnnet.nt.ca
Leader(s): Brian Laurie-Beaumont, Siegfried Rempel

Works of Art on Paper

Host(s): Ontario Association of Art Galleries
Location: Agnes Etherington Art Centre, Kingston, ON
Date: December 2–3, 2002
Contact(s): Jeffrey Matt, Program Officer
Tel.: (416) 598-0714
E-mail: programs@oaag.org
Leader(s): Sherry Guild

Precious Metals

Host(s): Manitoba Museum of Man and Nature Museum
Advisory and Training Service
Location: Winnipeg, MB
Date: February 13–14, 2003
Contact(s): Barry Hillman, Coordinator
Tel.: (204) 988-0672
E-mail: bhillman@manitobamuseum.mb.ca
Leader(s): Tom Stone, Lyndsie Selwyn

Winter 2003

Permanence of Artists' Materials - Paintings and Works of Art on Paper

Host(s): MacKenzie Art Gallery
Location: Regina, SK
Date: February 6–7, 2003
Contact(s): Brenda Smith, Conservator
Tel.: (306) 584-4287
E-mail: brenda.smith@regina.ca
Leader(s): Debra Daly Hartin, Sherry Guild

Preservation Management for Seasonal Museums

Host(s): Museums Alberta
Location: Red Deer, AB
Date: March 7–8, 2003
Contact(s): Carrie Herrick, Learning Program Intern
Tel.: (780) 424-2626
E-mail: Learning@museumsalberta.ab.ca
Leader(s): Deborah Stewart

CCI Services: Lectures, Workshops, and Site Visits

In cooperation with provincial museum and art gallery associations, CCI responds to specific needs within the heritage community by offering workshops, lectures, and site visits related to the conservation and care of museum and art gallery collections. CCI staff also participate in and present lectures to meetings of professional groups and associations.

November 2001

At the 4th Indoor Air Pollution conference in Copenhagen, Jean Tétreault gave two presentations: "Airborne Pollutants in Museums, Galleries, and Archives" and (in collaboration with Emilio Cano Díaz and David Scott) "Copper and Lead Corrosion in Carbonyl Environments"; he also gave a seminar on display and storage materials for members of the **Danish Conservation Organization** in Fuglso, Denmark.

Charlie Costain attended meetings of the **ICCROM General Assembly** and **ICCROM Council** in Rome; he was elected Chairperson of the ICCROM Council for a 2-year term.

George Prytulak examined the machinery collection at the **British Columbia Museum of Mining** in Britannia Bay, BC.

At the annual meeting of the **Ontario Museum Association** in Kitchener/Waterloo, ON, Michael Harrington delivered a formal presentation on CCI activities as related to the new standards of the Ontario Ministry of Tourism, Culture, and Recreation.

Brian Laurie-Beaumont and Chris Borgal (an architect with Goldsmith, Borgal and Company) met with the **Cobourg Heritage Foundation** and other cultural groups in Cobourg, ON, to help them create a series of coordinated and inter-related development projects or activities aimed at improving their city's heritage preservation and cultural experience.

Bob Barclay presented a 2-day workshop on the care and preservation of historic musical instruments for the **CANTOS Music Museum** (formerly **Chinook Keyboard Centre**), Calgary.

Brian Laurie-Beaumont and Siegfried Rempel participated in a facility development planning meeting in Red Bank, NB, for the proposed **Metepenagiag Heritage Park**, which includes a Parks Canada National Historic Site.

Brian Laurie-Beaumont and Siegfried Rempel went to Nova Scotia to provide development planning guidance on the proposed **Mi'kmaq Debert Cultural Centre**, which is being developed through the **Confederacy of Mainland Mi'kmaq** (CMM) on behalf of the **Mi'kmaq Nation in Nova Scotia**. They also visited the **Nova Scotia Museum of Industry** in Stellarton (where Brian sought information that would assist in a proposed transportation and technology project in Winnipeg, MB, and Siegfried provided technical design advice to assist in a proposed centralized storage warehouse for the Nova Scotia museum system).

and the Fundy Geological Museum in Parrsboro (where Siegfried provided advice on proposed expansion plans as well as some immediate issues concerning their mechanical system).

December

James Bourdeau and Paul Heinrichs visited **Ruthven Park** in Cayuga, ON, to provide an extensive assessment of the condition of the interior elements of the early-19th-century Georgian mansion along with detailed recommendations for treatment, preservation, and reinstatement.

Brian Laurie-Beaumont continued work on the proposed **Transportation Heritage and Technology Centre (THTC)** in Winnipeg, MB: he participated in the development of the terms of reference for a market analysis study for the THTC (including a site visit to interview and select a consulting firm) and attended a meeting of the Steering Committee.

Brian Laurie-Beaumont participated in a 2-day planning session to lay out the programming themes for the proposed **Metepenagiag Heritage Park** in Red Bank, NB; the meeting was held in Gatineau, QC, and included representatives of the **Mi'kmaq Nation at Red Bank**, the **Archaeology Branch of the Provincial Government of New Brunswick**, the **Canadian Museum of Civilization**, and **Parks Canada**.

Marie-Claude Corbeil participated in a meeting of **CURRIC Vocational Training Curricula for Conservation Scientists** that was held in Copenhagen; the aim of this project is to design university curricula for conservation scientists, in partnership with nine institutions, including universities and conservation institutes.

January 2002

Stefan Michalski and Jean Tétreault presented a 2-day workshop on current issues in relative humidity, temperature, lighting, and pollution for the **National Archives of Canada** in Gatineau, QC.

Marie-Claude Corbeil began a 3-month visit to the **Centre de recherche et de restauration des musées de France (C2RMF)** in Paris where she conducted research as part of a collaborative study of the painting materials of Canadian artist Jean-Paul Riopelle (who worked in Paris for many years starting in the late 1940s). This visit was funded by the **Canada-France Agreement for Co-operation and Exchanges in the Field of Museology**.

Renée Dancause, Jan Vuori, and Janet Wagner conducted in situ testing on the lounge chair from Claes Oldenberg's installation *Bedroom Ensemble* in the collection of the **National Gallery of Canada**.

February

At the **Kelowna Art Gallery** in Kelowna, BC, Brian Laurie-Beaumont facilitated a planning meeting with staff and members of the board to develop a detailed list of facility upgrading and expansion needs.

Brian Laurie-Beaumont reviewed consultant proposals for an upcoming museum development study with staff of the **Heritage Branch of the Government of Yukon** and the **Carcross/Tagish First Nation**.

Leslie Carlyle began a 4-year secondment to the **Netherlands Organization for Applied Scientific Research** in Amsterdam where she will be continuing her research into historical oil painting techniques and working on the **De Mayerne Project**.

Michael Harrington assisted Mr. Narender Passi (President of the **Hindu Samaj Temple** in Hamilton, ON) as he inspected almost 5000 books that had been salvaged through a vacuum freeze dry operation by **Les Entreprises ROSCO Group** in Dorval, QC (CCI had assisted in the emergency recovery of these books from the temple's library following an arson attack in September 2001); almost all the material recovered can be returned to service.

James Bourdeau completed a study of the impact of film production on the building and collections of **Benares Historic House and Visitor Centre** in Mississauga, ON, and provided recommendations for a revamped use policy.

Gregory Young attended a meeting at the **Walters Art Museum** in Baltimore, MD, to discuss additional CCI analytical support for the conservation and imaging of the **Archimedes Palimpsest**.

Nancy Binnie was interviewed by science writer John Karl (from the **University of Wisconsin Sea Grant Institute**) on the effect of zebra mussels on historic shipwrecks; this information will be used for a script for Earthwatch Radio, an article for *Wisconsin's Underwater Heritage* (the quarterly newsletter of the Wisconsin Underwater Archeology Association), a page on the Web site "Wisconsin's Great Lakes Shipwrecks" (www.seagrant.wisc.edu/shipwrecks), and a fact sheet.

Brian Laurie-Beaumont and Siegfried Rempel travelled through Arizona and New Mexico to gather comparative data and insights into aboriginal facility operation and design (information required for their **Aboriginal Facility Development Planning** workshop as well as for specific projects).

March

The CCI booth was set up at the conference of the **First Nations Confederacy of Cultural Education Centres** in Ottawa.

Debra Daly Hartin presented a lecture "The Use of Various Low Pressure and Suction Devices in the Conservation Treatment of Paintings" to students in the **Master of Art Conservation program at Queen's University**.

At the request of the **Netherlands Institute for Cultural Heritage (ICN)** and the **Anne Frank House Foundation**, Stefan Michalski provided advice on environmental control issues for the **Anne Frank House** in Amsterdam; while there he also gave a lecture at ICN on problems of environmental control in historic buildings.

Debra Daly Hartin was the guest professional at a 'chat session' for an Internet-based art history course at **York University**, Toronto.

On a site visit to Nova Scotia, James Bourdeau examined an 18th-century painting of the Annunciation at the **Acadian church in Ste-Anne-du-Ruisseau** (near Yarmouth); made recommendations for the conservation of two large theatre drops by William Gill (1892) at the **Musquodoboit Valley Bicentennial Theatre and Cultural Centre**; and conducted a preliminary investigation of the interior of **St. Ninian's Cathedral** bordering the campus of St. Francis Xavier University in Antigonish.

CCI conservators, in partnership with the **Heritage Conservation Program of the Federal Heritage Buildings Review Office (FHBRO)**, began a 4-month investigation of the materials and finishes of the **Sussex Pavilion** in Ottawa (the former City Hall).

April

For the second time in 2 years, Stefan Michalski taught the 6-day *Caring for Collections* course for the Cultural Resource Management program at the **University of Victoria, BC**.

Stefan Michalski presented 4 days of lectures on various topics in preventive conservation to students of conservation at the **University of Lisbon** and to staff of the **Portuguese Institute for Conservation and Restoration** in Lisbon, Portugal.

At the annual conference of the **Canadian Museums Association** (April 30 – May 4 in Calgary, AB): R. Scott Williams was a panelist in the session "Collecting from Contemporary Times" and demonstrated on-site chemical analysis of objects using a portable infrared spectrometer in the CCI booth, which was staffed by Mary-Lou Simac and Lucie Paquette (of Exhibit Transportation Services). Also in attendance were Bill Peters and Charlie Costain.

Bob Barclay visited the Conservation Department of the **Horniman Museum & Gardens** in London, England, to consult on the care, preservation, and analysis of brass musical instruments, and the Bate Collection of Musical Instruments at the **University of Oxford** to consult on trial protocols for assessing and monitoring the degree of use of historic musical instruments.

James Bourdeau began a 4-month secondment as the Senior Collections Preservation Advisor for the **Parliamentary Precinct Directorate of the Department of Public Works and Government Services Canada** where he will be responsible for a number of advisory projects for the upgrading of support systems and infrastructure for the preservation of art and artifacts on Parliament Hill in Ottawa.

Brian Laurie-Beaumont and Siegfried Rempel delivered workshops on Aboriginal Facility Development Planning for the **Heritage Branch of the Government of Yukon** in Whitehorse, YK, and for the **Museum Association of Saskatchewan** in Prince Albert, SK.

Bob Arnold and Peter Vogel visited the **Mill of Kintail Museum** near Almonte, ON, to assess the condition of a large plaster version of "The Call" by Robert Tate McKenzie, and carry out some minor repairs.

May

Brian Laurie-Beaumont and Siegfried Rempel delivered a workshop on Aboriginal Facility Development Planning for the **Aboriginal Tri-Partite Committee** in Halifax, NS.

At the annual conference of the **Society for the Preservation of Natural History Collections** (May 8–13 in Montreal, QC), Jane Sirois gave a presentation "Analysis of Museum Objects for Hazardous Pesticide Residues" and CCI had a supervised literature display table.

Bob Barclay presented "Conservation of Ethnographic Wooden Objects" as part of the International Course on Wood Conservation Technology at the **Norwegian Institute for Cultural Heritage Research** in Oslo, Norway.

George Prytulak examined an 1879 steam locomotive at the **Penetanguishene Centennial Museum** in Penetanguishene, ON.

Brian Laurie-Beaumont reviewed the completed market analysis for the proposed **Transportation and Heritage Technology Centre** in Winnipeg, MB, and helped set in place a programming development plan, including consultant terms of reference.

CCI had a supervised publications sales/literature display table in the Book Room at the annual conference of the **Canadian Archaeological Association** (May 12–15 in Ottawa).

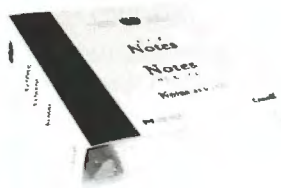
Stefan Michalski was a member of a **UNESCO/UNDP** team consulting on the renovations of museum buildings in Kuwait that had been damaged during Iraqi occupation; meetings were held with the **National Museum of Kuwait**, the **Dar al-Athar al-Islamiyyah**, and **Pan Arab Consulting Engineers**.

Many CCI staff made presentations at the annual gathering of the **Canadian Association for Conservation of Cultural Property (CAC)** (May 23–26 in Kingston, ON). At the workshop “Care and

Preservation of Art and Artifacts in Public Places”: Debra Daly Hartin “Building a Resource Network for Outdoor Murals”; and George Prytulak “Industrial Heritage in the Wired World.” At the conference following the workshop: Charlie Costain and David Grattan “Global Trends in Preservation”; Marie-Claude Corbeil “Une étude des matériaux et des techniques de Jean Dallaire” (co-authored by Claude Belleau of the Musée du Québec, and **Kate Helwig**); Carole Dignard “Nd:YAG Laser Yellowing: Myth or Reality?” (co-authored with Véronique Vergès-Belmin of the Laboratoire de Recherche des Monuments Historiques in Champs-sur-Marne, France); Janet Mason “Treatment of a Selection of Adney Canoe Models”; intern Hildegard Heine

“A Inuit Skinbag from Arctic Quebec: Examination and Treatment”; Elizabeth Moffatt “From Wheelbarrows to Silk Brocade: What a Privy Can Tell Us About 17th Century Culture” (co-authored by Cathy Mathias of Memorial University of Newfoundland, and Alison Murray of Queen’s University in Kingston); and **Season Tse** “The Use of Simmering Water in the Conservation Treatment of a 19th Century Sketchbook of Iron-gall Ink Drawings by James G. MacKay” (co-authored by Maria Bedynski of the National Archives of Canada). Charlie Costain also facilitated a session in which conference delegates could put forward and rank proposals for CCI research or other activities; this list of ideas will be published in a future issue of the *CCI Newsletter*.

Notas del ICC



The *CCI Notes* have always been a mainstay of CCI publications, and we are pleased to offer them now in Spanish as well as English and French. The translation was done by the Centro Nacional de Conservación y Restauración (CNCR) in Santiago, Chile, under the auspices of a Memorandum of Understanding with CCI and with funding from the Fundación Andes.

Clients in Central and South America and the Caribbean can obtain *Notas del ICC* directly from CNCR.

All other clients can order the complete set from CCI.

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New CCI Notes

New *CCI Notes* are now available on topics ranging from totem poles to industrial collections to paintings. These new titles are available individually, as a package, or as part of a complete set. For more information, see the 2002 Publications and Special Products catalogue, visit our online Bookstore (www.cci-icc.gc.ca), or contact Publications Sales by telephone (613-998-3721) or e-mail (cci-icc_publications@pch.gc.ca).

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