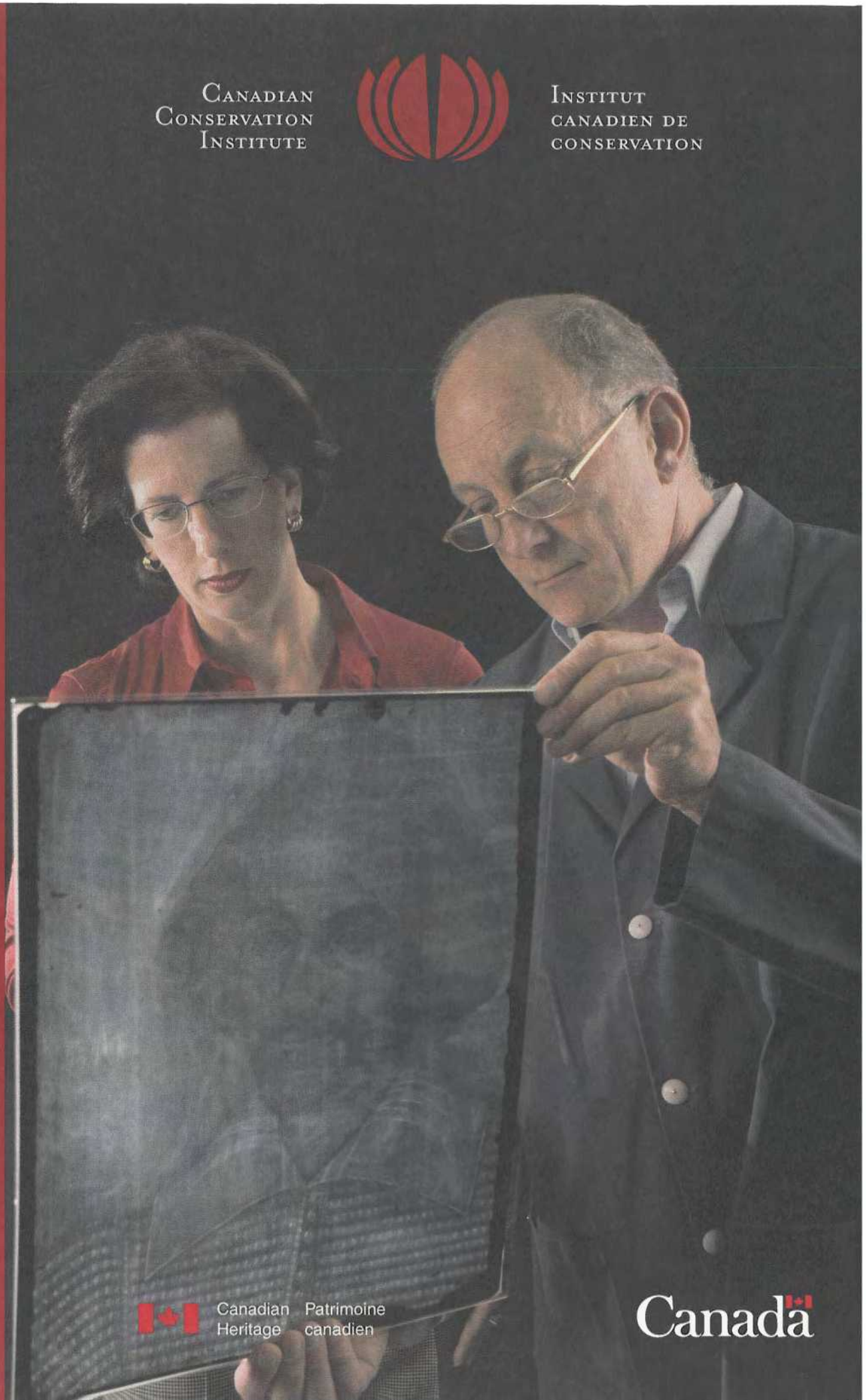
CCI Newsletter



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"Managing change" has become a fact of everyday life in the conservation profession.

The phrase may sound like a truism, but it is the reality of the 21st century. And this reality was highlighted at a roundtable discussion of the Conservation Committee at the recent General Conference of the International Council of Museums (see article on p. 14 of this issue) where a number of distinguished speakers from leading conservation institutes addressed the topic of change.

There was unanimous agreement that one of the major challenges facing the conservation profession is its relative invisibility. To resolve this situation, conservators must start raising awareness about their work and its importance in safeguarding cultural heritage.

Recent world events have made this approach even more timely and relevant. In the wake of increased terrorist activity, the protection of objects and the values they symbolize has taken on a greater urgency. Taking action to create public awareness about the importance of preservation must become a fundamental responsibility of the conservation profession.

The celebration of CCI's 30th anniversary in 2002 will provide an opportunity to go beyond the promotion of conservation of objects and collections and become advocates for their preservation. We would do well to understand and emulate the success of environmentalists in generating widespread public support for the protection of the natural environment. By undertaking a strong advocacy role for preservation, CCI (in collaboration with other leading conservation institutions and organizations) can help to ensure that cultural heritage in all its diversity remains accessible to future generations.

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Scientific Examination of the Sanders Portrait of William Shakespeare

by Marie-Claude Corbeil and Elizabeth Moffatt, Senior Conservation Scientists, and Jeremy Powell, Senior Scientific Documentation Technologist, Analytical Research Laboratory and Gregory Young, Senior Conservation Scientist, Conservation Processes and Materials Research Division

The "Sanders Portrait of William Shakespeare" has been passed down from generation to generation of its owner's family, along with the legend that it is in fact a portrait of Shakespeare. The head-and-shoulders image is presumed to have been done by an ancestor of the owner — an artist named John Sanders about whom little is known. It measures 42 cm high by 33 cm wide and is executed on a wood panel. A date ("AN° 1603") appears in red in the upper right corner, and a paper label is glued on the back of the panel (but it is badly damaged and the writing it bears is no longer legible). If authentic, this portrait would be the only known likeness of Shakespeare created during his lifetime.

The painting was the subject of an article in *The Connoisseur* in 1909. The author, a man named Spielmann, had transcribed the inscription on the label that identified the man in the portrait as William Shakespeare at the age of 39 years. Spielmann declared that the date had been added long after the portrait had been painted, that the costume had been extensively retouched or over-painted, and that the paper of the label was not that old; he concluded that the painting was a "relatively modern" copy or fake.

In an effort to prove the painting was genuine, the owner approached CCI with a request to carry out a scientific examination. The goal was to determine, on the basis of the materials used, whether or not the painting dated from the early 17th century.

The first step in the examination was to date the wood panel. Tree-ring dating was done by an expert in the field — Peter Klein from Hamburg University. His analysis showed that the wood was oak from the Baltic region, that the earliest possible date for the execution of the painting was 1597, and that a date of execution from 1603 onward was plausible. Having determined that the wood panel was from the correct period, the painting was subsequently radiographed to ensure the current

The Sanders Portrait

portrait was not simply executed on top of an old painting. The radiograph did not show any indication of an earlier painting underneath the portrait.

The painting was then examined by various means including photographic techniques such as infrared and ultraviolet radiation. The results revealed no major retouching, which called into question Spielmann's allegation that the costume had been extensively retouched or modified.

The next step was to analyse the materials used to paint the portrait. Although this kind of data could not be used to date the painting precisely, it would provide information about the era and geographical location in which the painting was done. And should the analysis reveal the presence of a painting material that was not introduced until the 19th or 20th century, it would prove that the painting was a copy or a fake.

The results indicated that the nature of the materials in the portrait and the way in which they were used were consistent with those that one would find in a painting done in England in 1603. No anachronisms were noted. In addition, close examination of the date revealed nothing in the way the red paint was applied to indicate that the date had been applied at some point in time after the portrait was finished.

Finally, the paper label was examined. Analysis showed that it was rag paper made from linen fibres, as opposed to pulp paper of more modern manufacture. The last step was to date the paper. This was done by Roelf Beukens at IsoTrace Radiocarbon Laboratory, a laboratory affiliated with the University of Toronto, who concluded that the paper could date anywhere between 1475 and 1640. The dating of other materials, such as the ink or the glue from the label or the paint itself, was also considered but proved to be problematic.

The results of the tests that were done were conclusive: the painting was executed on wood that dated from the correct period; the materials and the

way in which they were used were consistent with a painting done in England in the early 17th century; no anachronistic material was found; and the label identifying the subject of the portrait was made of rag paper dating from 1640 at the latest. All these elements indicated that the painting was indeed an old painting and not a relatively modern copy or fake.

But is the painting a portrait of William Shakespeare? It was never the purpose of CCI's examination to provide an answer to this question. However, once armed with CCI's results that the painting materials were of the appropriate age, the owner was able to convince others that the portrait warranted further study. Perhaps someday the identity of the subject will be verified.

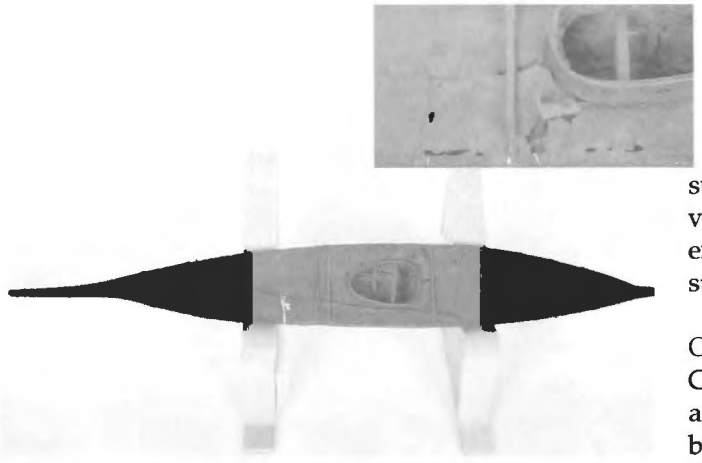
In spring 2001, *The Globe and Mail* published several articles on the scientific examination of this painting and the mystery surrounding it. In response to the interest generated by these articles, the Art Gallery of Ontario in cooperation with CCI organized an exhibition to present the portrait and the results of the examination. This exhibition (entitled "Shakespeare?") allowed the general public to see first-hand the type of research that is necessary before curators, art historians, and other experts can establish the provenance of a painting. And, of course, everyone had an opportunity to form their own opinion as to whether or not they were viewing an authentic likeness of William Shakespeare.

For more information see the article about this portrait on the CCI Web site (http://www.cci-icc.gc.ca) under What's New.

Treatment of the Adney Model Canoe Collection

Janet Mason, Conservator, Treatment and Development Division - Objects

Edwin Tappen Adney (1868–1950) spent a considerable portion of his life researching and building 1:5 scale models of North American watercraft. These models were crafted from bark (birch, spruce, elm, hickory, and basswood), moose hide, sealskin, a variety of woods, spruce root, sinew, leather, and gum, and all of them were meticulously accurate in the significant details that illustrated the cultural diversity of their makers: the curve of the stern, the size and spacing of the lashings, the carvings of the paddles, etc. Each model was carefully identified in black ink on the underside of the hull with information that included the type of canoe and occasionally the place where Adney had studied the original — whether with the owner, in a museum, or from descriptions when no specimen remained. Adney's collection eventually expanded to include models of canoes and kayaks made by others, although none of these had the precision of his own work.



Insects had created many holes in the sealskin of this 96-cm (38-in.) model of a Hudson Bay Eskimo kayak. The framework was so warped that the central ribs had sheared off where bent.

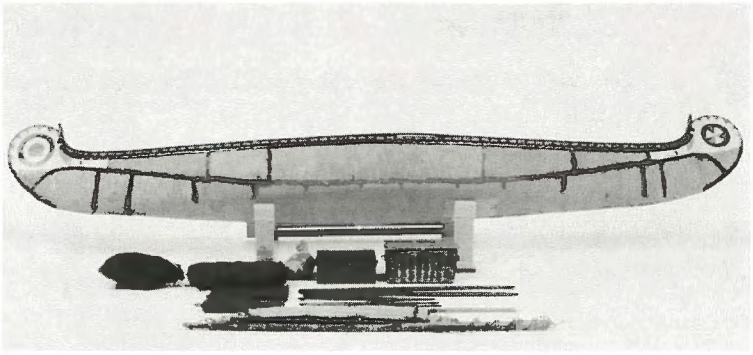
In the 1940s, The Mariners' Museum in Newport News, Virginia, purchased about 125 of Adney's models with associated drawings and notes. These models have since been in storage for many years, but the decision was recently made to exhibit them. As part of a grant submission to prepare the models for public display, the Museum approached CCI with a request to conduct a conservation assessment of the collection. CCI was subsequently engaged to treat various models that required extensive work or testing of surfaces prior to cleaning.

One of the models that came to CCI for treatment represented an equipped canoe that had been used by the Hudson's Bay Company. This canvas-covered model (MP127) was 1.87 m (73.5 in.) long, and was filled with miniature fur bundles, provision sacks, paddles, sails, and tarpaulins. Unfortunately it appeared to have served as a toilet for mice, and half of the interior of the canoe plus many of the bundles and sacks had been drizzled with a liquid (probably urine) that had turned dark brown. In addition, a piece of folded fabric representing a tarpaulin and some of the wooden ribs of the canoe had been gnawed. Analysis showed that the brown stain was soluble in water, and expectations were high for removing it.

However, following treatment the stain (although lessened in intensity) was still quite noticeable. Two kinds of bleach used in the treatment of the textile sacks and bundles proved to have little effect. The dark coloration remained and continued to detract from the aesthetic of the model.

A birch bark model (MP89) that represented a three fathom fur trade canoe had not only been badly stained, but 10 ribs were missing and the mice had gnawed the underlying wooden sheaths. The birch bark was badly damaged with large cracks radiating from both sides of one end. Lai Wing Fai (an intern from Hong Kong working in the Objects Lab)[1] gently brought the bark back into alignment, repaired the cracks, and created new ribs to replace those that had been lost.

Another canoe model was badly splayed. In this case the gunwales had spread open and the thwarts had pulled away from one side, breaking the root lacings that had held them in position and leaving a gap of about 5 cm (2 in.). Initially it was thought that the model could be realigned simply by exposing it to solvent vapours to plasticize the bark. Unfortunately the solvent vapours caused the gum on the seams of the bark to run, so a different (and more complicated) approach had to be taken. Lai and Bob Barclay (a senior conservator in the Objects Lab) first removed all of the ribs and allowed the entire hull to spring back into its original shape. To relieve the considerable force that would be exerted by the ribs as they were reattached, the end of each rib was shaved to decrease its length. The removal of original material is not standard practice, but in this case it was essential if the original structure was to be maintained. The ribs were then reattached and the canoe was brought back into correct alignment.



For this 1.87-m (73.5-in.) model of a fully equipped Hudson's Bay Company fur trade canoe, the canoe and equipment were cleaned and several tins with badly flaking paint were consolidated or repainted.

After all treatments were completed (which took about 6 months), the canoe models were prepared for shipment back to The Mariners' Museum. They were wrapped in tissue, placed in slings inside the same boxes in which they had arrived, and then wrapped with additional cotton tapes to secure them in place and prevent movement. Each canoe was thus padded and protected for the journey. These shipping boxes had been designed and made at The Mariners' Museum, and proved to be very successful. The Museum plans to publish or present details on their construction sometime in the future.

The remaining 86 models in the collection will be cleaned by staff and volunteers of The Mariners' Museum. To assist them with this task, CCI has provided 3 days of instruction in writing condition reports and treatment proposals, cleaning to a consistent and desired level, consolidating the gum, and making basic repairs to cracked or broken root, bark, and wood.

When the Adney collection is finally ready for display, it will provide researchers and scholars with primary source material. More information on the collection can be found on the Web site of The Mariners' Museum (http://www.mariner.org).

1. For more information on Lai and his work, see the article on p. 9 of this issue.

More information on CCI and its activities can be found on CCI's World Wide Web pages:

http://www.cci-icc.gc.ca

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.

21.5 x 28 cm (8.5 x 11") – 3-hole punched and inserted into binder – 1999
In Canada: CAN$85 – Other countries: US$85

CCI Analysis Aids Conservation of the Archimedes Palimpsest

Jane L. Down,[1] Senior Conservation Scientist, Conservation Processes and Materials Research Division

The Archimedes Palimpsest[2] is a parchment manuscript that contains a 10th-century copy of seven of Archimedes' theorems underneath a 12th-century religious text.

It is believed that Archimedes, who lived from 287 to 212 BC, originally wrote his theorems on papyrus scrolls. To preserve this knowledge, these were probably copied and recopied on papyrus until about the 4th century AD — when parchment and the 'book' were adopted. From that time on they were likely copied and recopied onto parchment. The Archimedes Palimpsest contains the oldest known copies of any of his theorems. It includes the only copy of the treatise on the "Method of Mechanical Theorems" and the only copy in the original Greek of the treatise "On Floating Bodies."

The theorems that were copied onto this manuscript in the 10th century did not survive the next millennia unscathed; they were scraped off during the 12th century so that the parchment could be reused. At that time the leaves of the book were cut and turned, prayers were written on top of the scraped-off text, and the book was rebound in a smaller format. The resulting Euchologian (or prayer book) was an important tome and the parchment was never scraped off and overwritten again.

For the next 600 years the prayer book likely remained in the Monastery of Mar Saba in the Holy Land (between Bethlehem and the Dead Sea, in what is now Israel), in constant use by the monks. It was removed from this monastery in the middle of the 19th century and eventually arrived in Constantinople (Istanbul). In 1906, Danish philologist Johan Ludwig Heiberg discovered that it contained Archimedes' theorems and transcribed them using a magnifying glass (although some of the text was concealed by the binding). By 1930 the prayer book was in a private collection in Paris, where it resided until 1998 when it was purchased by an anonymous buyer for $2 million.

Scott Williams examines one folio of the Archimedes Palimpsest through a stereomicroscope.

The new owner graciously agreed to have the manuscript conserved and made available to Archimedes scholars for transcription. But first it had to be taken apart. Responsibility for this work and the conservation treatment was given to the Walters Art Museum in Baltimore, MD.

A team of scientists from the Rochester Institute of Technology, the Xerox Corporation, and the Johns Hopkins University in Baltimore was assembled to enhance the Archimedes text, which is very faint and difficult to see. The team is accomplishing their task with the help of ultraviolet imaging, confocal microscopy, and several techniques that have been used to obtain satellite images of the earth.

During its life the palimpsest had survived a fire (as evidenced by the charred edges of the manuscript), developed a severe problem with mould, and been taken apart and rebound using a modern adhesive. Its conservation treatment and disbinding for transcription promised to be a complex process. As part of the procedure, CCI was contracted to provide analytical support and materials expertise.

CCI scientists travelled to Baltimore in November 2000 to examine the palimpsest and take numerous samples of the parchment, inks, adhesives, accretions, residues, and mould. These samples were brought back to CCI for analysis.

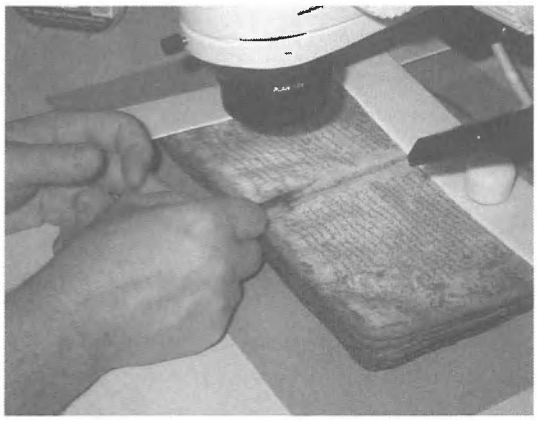
To determine the state of deterioration of the parchment, samples from healthy areas, charred and mouldy areas, and the area of staining from the Archimedes inks were subjected to shrinkage temperature measurements using a new video technique to determine onset and end-point temperatures (shrinkage temperature has been shown to correlate to the level of deterioration of collagen fibres). Samples of 10th- and 12th-century ink were identified mainly as iron gall, although other inks were also found to be present. Mould samples were assessed for viability to determine whether or not the mould posed a future danger to the object and/or its handlers.

Various adhesives, accretions, and residues (such as silica gel, candle wax, and a modern adhesive on the spine binding) were identified. The presence of the modern adhesive was problematic because it was in direct contact with the Archimedes text. Two innovations were utilized to find a solvent system that would remove the adhesive without damaging the parchment. First, a new micro-swell test was devised to identify the most effective solvent removal system for the adhesive. Second, the solvent system was tested on micro-quantities of parchment and shrinkage temperature measurements were taken to determine whether or not it was dangerous to the parchment.

This project is an example of the comprehensive analysis of a manuscript that CCI can undertake to assist conservators in the conservation of historically important documents. As a result of these analyses, specific identifications, assessments, and recommendations were made and some innovative scientific techniques were developed to assist in the conservation treatment and disbinding of the Archimedes Palimpsest.[3] This work is not yet complete, and CCI will continue to assist the Walters Art Museum with further analyses and advice as required.

The Archimedes text that has been newly revealed has already provided scholars with new information about the great mathematician/physicist. For example, a leaf containing part of the "Method of Mechanical Theorems" indicates that Archimedes knew of and used calculus 2000 years before Newton is credited with its discovery.[4] Who knows what other discoveries lay in store as more text is revealed?

Further information on the Archimedes Palimpsest can be found on the Web site of the Walters Art Museum (www.thewalters.org/Archimedes).



While viewing the palimpsest through a stereomicroscope, Scott takes a sample of adhesive using a scalpel.

1. This article was prepared with the assistance of other CCI scientists who worked on the project, including Gregory S. Young, R. Scott Williams, Jane Sirois, Elizabeth Moffatt, and Maureen A. MacDonald.

2. A palimpsest is literally 'a piece of parchment or other writing material from which one text has been erased to make room for another' (a process that could be repeated numerous times). The practice of reusing parchment was quite common at various times in history, and there are many palimpsests in existence today. The Archimedes Palimpsest is valuable because of what it contains.

3. The results of these analyses are the subject of a paper to be presented at the annual congress of the International Institute for Conservation of Historic and Artistic Works in Baltimore, MD, in the fall of 2002.

4. Peakin, W. "The Sum of God." *The Sunday Times Magazine* (June 17, 2001), London, UK.

Guidelines for Selecting and Using Coatings

by Jean Tétreault, Conservation Scientist, Preventive Conservation Services

The choice of suitable paints, varnishes, and stains is an important part of the planning process for all exhibition and storage room projects. There are many coatings on the market for architectural and industrial use, but not all of them are appropriate for conservation purposes. In addition to the adhesion and weathering qualities of coatings, museum and archival institutions must also be concerned about the emission of any volatile compounds that could be harmful to works of art and archival documents. For example, emissions from oil-based and fresh alkyd-based paints are known to corrode some metals (e.g. lead, copper, and zinc) and to promote the deterioration of photographs. Paper or cotton can also be susceptible to damage.

CCI often receives questions about the use of coatings for presentation and preservation purposes. In response to this need for information, a Technical Bulletin entitled *Coatings for Display and Storage in Museums* was published in July 1999 to provide guidelines for selecting and using coatings. The Bulletin discusses various coatings for the wood, metal, and concrete surfaces of floors, walls, and display or transportation cases. Table 1 presents a simplified version of the guidelines.

Powder coatings form a film on the surfaces to which they are applied in a process that does not require a solvent, but liquid coatings need solvents to aid their application and film formation.

These solvents always release vapours as the coatings dry. Although the rate of emission of vapours decreases with time, this does not happen as rapidly as is generally thought. Because the presence of large quantities of these volatile products can be damaging for works of art (especially objects made of metal or with metal components), it is important to allow sufficient time for coatings to dry and the harmful emissions to dissipate before placing artifacts in the vicinity.

The dissipation of vapours is particularly difficult in enclosed spaces such as display cases or storage cabinets, where volatile emissions can build up to very high concentrations. The more airtight the enclosure, the longer it will take for solvent vapours to reach safe levels.

Placing metal artifacts inside a display case or storage cabinet that was painted just a few days earlier would be a very risky scenario. To avoid potential problems, a drying time of 4 weeks is required — even when recommended coatings have been used. This 4-week period corresponds to the average time it takes for a coating to release most of its volatile products. If time constraints make it impossible to wait 4 weeks, the enclosure should either be constructed from a material that does not release volatile vapours (e.g. plastic panels) or sealed with a laminated aluminum film such as Marvelseal instead of a wet coating. The drying time for a painted room is much shorter (only about 4 days) than that for a display case because the volatile products dissipate much more quickly in the room's larger dimensions.

CCI does not recommend any coatings in particular (as formulations may change) but instead provides general guidelines based on the nature and use of the coatings. By avoiding oil- or alkyd-based paints, following recommended drying times, and keeping artifacts that contain lead away from freshly painted areas, collections should be exposed to very few risks.

More information on coatings or related topics is available in the following documents. Enjoy your painting project!

Tétreault, J. *Coatings for Display and Storage in Museums.* Technical Bulletin, No. 21. Ottawa: Canadian Conservation Institute, 1999.

Tétreault, J., and E. Stamatopoulou. "Determination of Concentrations of Acetic Acid Emitted from Wood Coatings in Enclosures." *Studies in Conservation* 42 (1997), pp. 141–156.

Tétreault, J. *Oak Display Cases: Conservation Problems and Solutions.* Ottawa: Canadian Conservation Institute, 1999. Available on CCI's Web site at http://www.cci-icc.gc.ca/document-manager/view-document_e.cfm?Document_ID=80&ref=co (or do a search by author's name on the Conservation Information database).

Tétreault, J. "Display Materials: The Good, The Bad, and The Ugly." pp. 79–87 in *Preprints of Exhibition and Conservation* (edited by J. Sage). Edinburgh: Scottish Society for Conservation and Restoration, 1994. Also available on CCI's Web site at http://www.cci-icc.gc.ca/document-manager/view-document_e.cfm?Document_ID=83&ref=co (or do a search by author's name on the Conservation Information database).

Tétreault, J., J. Sirois, and E. Stamatopoulou. "Study of Lead Corrosion in Acetic Acid Environment." *Studies in Conservation* 43 (1998), pp. 17–32.

Table 1
Simplified Coating Guidelines

	Wood products	Metals	Concrete*
For enclosures such as display cases and storage cabinets:	Avoid acidic woods such as oak and cedar. All paints except oxidative paints† are acceptable. Varnishes need several layers. A drying time of 4 weeks is recommended.	Powder coatings require a drying period of only 1 day. With two-part epoxy or (properly) baked alkyd paints the drying period must be 4 weeks.	Not commonly used for this type of enclosure.
For open structures such as storage shelves (no doors), walls, and ceilings:	All paints except oxidative paints† are acceptable for all surfaces. Allow a drying period of 4 days. Check with the distributor or the technical data sheets to ensure that the paint is appropriate for the surface to be painted. If possible, the relative humidity should be kept lower than 65% during the drying period.		
For floors (which are a special case of open structures):	All paints except oxidative paints† are acceptable for all surfaces. Be sure to select paints that are recommended for floors. Allow a drying period of 4 days (or more if specified by the manufacturer).		
For contact between objects and paint film:	Wait 4 weeks before allowing direct contact between objects and painted surfaces. Four days of drying is sufficient if interleaves such as plastic sheets (e.g. polyethylene and Mylar, but not polyurethane foam or PVC) or alkaline papers are used. For metal surfaces treated with powder coatings or baked alkyd paints, direct contact is safe after 1 day of drying.		
For display or storage of lead objects in a newly painted enclosure or room:	Even when using appropriate coatings and drying periods, some lead objects or rich lead alloy metal objects can be altered by carboxyl acid vapours (especially acetic acid) released by coatings or wood products. It is therefore recommended that these materials be avoided as much as possible when displaying or storing lead.		

*New concrete surfaces will need to be etched with a muriatic solution to improve the paint adherence. For old concrete surfaces a TSP soap (trisodium phosphate solution is a common soap for cleaning concrete surfaces) should be sufficient.

† Oxidative paints include oil-based urethane, alkyds, and epoxy ester (i.e. epoxy in one paint can).

Disaster Relief at the Hindu Samaj Temple

by Michael Harrington, Manager, Treatment and Development Division

Photo: Kenney Photographic Productions, Hamilton

Sheila Copps (left) attends a fund-raising event "A Community Together" for the Hindu Samaj Temple. Shown here with Neelam Tandon (centre, Co-Chair of the event) and Romi Sareen (an active member of the Hindu Samaj of Hamilton).

The Hindu Samaj Temple in Hamilton, Ontario, was the victim of arson on September 15, 2001 (local media reported on the suspicious nature of this attack, coming as it did just days after the terrorist attacks in New York City). The Temple is located in a rather remote rural location and unfortunately the fire was well established before it was discovered. As a result the one-storey building with a raised basement was extensively damaged — the roof collapsed and the ground floor was gutted.

The primary concern of the Temple members was the cultural material trapped in the burned out building. According to Hindu religion, any icon, statuary, or altarpiece that has sustained any damage, even in the slightest way, cannot be re-used (these pieces have symbolic life that is taken away if they are damaged). Soot and water staining would not constitute damage but the slightest bend or scratch would. The second concern was the Temple's library, which was housed at the rear of the building in the basement. The library collection is composed of approximately 5000 volumes, many from the 19th century. It includes the life work of two Hindu scholars (Dr. Arapura and Dr. Kinsley — whose libraries were donated to the Hindu Samaj Temple) and a collection of reference material.

In the immediate aftermath of the fire, Temple members approached their local Member of Parliament Sheila Copps (Minister of the Department of Canadian Heritage), who offered the guidance and assistance of the Department.

CCI first became aware of the damage on Monday, September 17, and contacted our regional staff to visit the site. Denis Greenall (Program Consultant, Cultural Development & Heritage) met with Mr. Narender Passi (President and spokesperson for the Temple) and Bill Hiscott (the fire investigator assigned to the site from the Office of the Fire Marshall for the Province of Ontario). Bill indicated that in addition to the fire damage there had been 1.5 m (5 ft.) of water in some parts of the basement. Although this had since been pumped out, the extent of water damage to the library books was still unknown, as was the condition of the religious artifacts.

Although it was clear from the information received from the Fire Marshall's office that we could not gain access to the building until at least Tuesday, we immediately set about assembling a team to respond to this disaster. Bob Arnold (a senior conservator at CCI) and I would be able to handle any required work for the recovery of the fine art and sculptures, and Iona McCraith (a private-sector archives preservation consultant with extensive experience in disaster response planning) was contracted to assist with the recovery of the paper materials. Bob and I left CCI early Tuesday morning, picked up Iona at her studio in Bethany (near Peterborough) in the early afternoon, and proceeded directly to the site.

The first tour of the building confirmed our worst fears regarding the cultural material. The images of God were mostly granite or marble and metal, and all of these deities had suffered extensive damage, with breaks, burned areas, or sections of stone that had spalled off. We deferred to the decision of the Temple members that these deities were too severely damaged to be restored and turned our attention to the library collection. We had a very small window of opportunity to save this material, and it was closing rapidly.

Gerry Kofsky of Munters Moisture Control Services was contracted to assist with the recovery operations. He provided a 13.7-m (45-ft.) refrigerated trailer to flash freeze the books as they were rescued, in addition to various other supplies and equipment that would be needed to complete the salvage. The Hamilton Fire Department lent us their lighting units, which were better suited to the job than ours.

Access to the site was finally declared safe at 2:00 PM Wednesday, and we entered the basement to begin work.

Three people were engaged in removing books from the basement — first from the floor (to avoid stepping on them) and then from the collections of the Hindu scholars. The books were carefully loaded into plastic trays and carried outside.

Processing tables were set up at the back of the building. At these tables

the books were wrapped in waxed paper (to prevent them from freezing together into solid blocks) and then placed spine down in 0.034-m^3 (1.2-$ft.^3$) cardboard boxes. The outside of each box was marked with the box number, the name of the collection, and the number of books inside. A member of the Hindu community kept a register of the box numbers and their contents. When we had packed a group of about 20 boxes, these were lifted into the freezer truck so they could be frozen as soon as possible.

This packing procedure was repeated until all of the books were in the freezer trailer — about 8:30 PM. As we left for the evening, the temperature in the freezer had dropped to -8°C (18°F). By the next morning the trailer had stabilized at -29°C (-20°F), and the books were frozen solid. In this condition the trailer and books left for a freeze-drying facility in Montreal, and we returned home.

We subsequently received a complete assessment of the condition of the collection when it arrived at the freeze-drying facility, complete with treatment options and costing. This was evaluated with reference to our report from the site and we are assisting the community to determine the most appropriate next steps. Currently the collection is still undergoing the freeze-drying process, and the examination, sorting, cleaning, and restoration of the damaged material is yet to take place.

As for the damaged deities, these were laid to rest according to Hindu custom. At the request of Temple members, Sheila Copps enlisted the assistance of the Hamilton Port Authority, who provided a boat to transport the sacred sculptures to their final resting place in early November. The deep waters of Lake Ontario received all nine pieces in a Hindu immersion ceremony that is symbolic of resurrection or the restoration of the whole.

Two things stand out for me in this project. The first is the real outrage of all the people that we encountered in Hamilton toward this unwarranted attack. This was perhaps best summed up by an employee in a motorbike shop near the Temple: "Why would anyone hurt those guys? Hindu people don't even step on bugs!"

[Editor's note: It is the Parsis, not the Hindus, that will not kill bugs.]

The second was the value of competent disaster response to Canadians and their communities. What we did was not special. Any museum or historic site with staff trained in disaster response could have done the same thing. The preservation resources across the country are there to serve their communities and they can help to ensure that important cultural material is not needlessly lost when disaster strikes.

The Hindu Samaj Temple serves the spiritual needs of more than 1000 families in the Hamilton area, and this unfortunate event has caused tremendous loss and sadness for all of them. But they are rebuilding, and have benefitted from expressions of support from the community in which they live. Thanks to the cooperative efforts of many in the preservation community, they will also have their library.

I would like to extend a special thanks to everyone who contributed to the success of this phase of the project.

Rural Expo 2001: International Plowing Match and Farm Machinery Show

by Susanne Richter, Marketing Manager, Information Services and Marketing

The International Plowing Match and Farm Machinery Show is an annual event that includes large displays of antiques, agricultural tools, modern machinery and equipment, industrial artifacts, and numerous exhibits from local museums. This year's show (held in Navan, Ontario, September 18–22) attracted more than 80 000 visitors — many of whom were private collectors and custodians of heritage objects. CCI was there to promote the importance of conservation to this audience, and introduce them to the Institute and the services we provide.

Many CCI staff participated in this undertaking, including marketing, client services, and communications personnel, and various conservators and scientists. Visitors to the CCI booth were treated to explanations and demonstrations of proper cleaning, restoration, and display and storage techniques for personal treasures. Printed information about industrial artifacts, wooden furniture, musical instruments, silver objects, and textiles was distributed, as were free copies of the CAC/CAPC brochures *What is Conservation?* and *Selecting and Employing a Conservator in Canada.*

Plowing contests were an integral part of Rural Expo 2001, which also featured large displays of antiques, agricultural tools, modern machinery and equipment, industrial artifacts, and numerous exhibits from local museums.

This was CCI's first venture at such a public venue. However, as the Institute moves forward in its role as an advocate for conservation, the experience gained at this event will help direct future efforts.

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.

Lai Wing Fai (a graduate of the Hong Kong University of Science and Technology) began working as a conservator in Hong Kong in 1995. He came to CCI in January 2001 to further his training in conservation science.

Lai spent his first few months at CCI in the Objects Laboratory, working with the team treating miniature canoes from The Mariners' Museum in Newport News, Virginia (see article on p. 2 of this issue). He found this project particularly fascinating because canoes and objects made of birchbark are seldom seen in Hong Kong.

Since spring Lai has been working on two different projects in the Preventive Conservation Services Division with Jean Tétreault.

The first study deals with air exchange in display cases. Carbon dioxide is generated within a display case and then measurements are taken of how quickly the air is exchanged. The ultimate goal of this work is to create a portable and user-friendly device to measure leaks and leakage rates. This type of equipment will assist in controlling relative humidity in display cases and providing better protection against outside pollutants.

Lai's other project is a study of the fading of colorants used by artists. Some research on colour fading has already been done at the Getty Research Institute in Los Angeles, California, where it was noticed that there is a possible correlation between the level of oxidants and the changes in water-colour paper. Lai is measuring the effect of different levels of acetic acid and sulphur dioxide on colour fading over an extended period of time. The colour change is recorded periodically, and so far two or three different kinetic patterns have emerged. This research is aimed at reaching a better understanding of the kinetics of colorant fading in an oxidant environment.

While involved with these research projects, Lai has also continued doing conservation work. In recent months he has been involved with a laser cleaning project in the Objects Laboratory. This project stems from research on laser cleaning sponsored by the U.S. National Center for Preservation Technology and Training and the Los Angeles County Museum of Art. It is centred on a comparison of different approaches to cleaning soot-covered feathers (two pelicans damaged in a fire at the Royal Saskatchewan Museum were donated to CCI for this work). Feathers present special treatment challenges because of their delicacy and inter-locking structure. The test feathers are being subjected to a variety of cleaning methods (including laser irradiation, solvents, detergents, vacuuming, and brushing), and then analysed microscopically and through colorimetric measurements. Work on this project is being carried out both at CCI and in Los Angeles, and the results of the various cleaning methods should be ready for comparison within the next few months.

Some other interns who have been at CCI in the past months include:

Sarah Brett, a graduate of the Collections Conservation and Management program at Sir Sandford Fleming College, in Learning and Development (under the Federal Public Sector Youth Internship Program).

Monica Boota in the Business Planning and Administration Directorate (under the Federal Public Sector Youth Internship Program).

Jaejin Choi, a graduate of Sir Sandford Fleming College and a student of the Master of Art Conservation program at Queen's University, in the Treatment and Development Division - Furniture and Decorative Arts.

Hildegard Heine, a graduate of the University of Applied Sciences in Cologne, Germany, in the Treatment and Development Division - Objects (a professional development internship).

Suzanne Lewis, Lead Curator in the Department of Entomology at the Natural History Museum in London, UK, in the Conservation Processes and Materials Research Division and the Preventive Conservation Services Division (a professional development internship).

Agata Sochon, a graduate of the Master of Art Conservation program at Queen's University, in the Treatment and Development Division - Fine Arts (under the Federal Public Service Youth Internship Program).

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

Mrs. Beeton, Household Conservator

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

Beeton's Book of Household Management[1] is the pre-eminent 19th-century source of recipes for all seasons, for all foods (even guinea pigs!). Much more than a simple cookbook, it has provided generations of readers with delightful insights into the preparation of food for the well-to-do Victorian household. Take for example the section on rabbits. Each species is introduced with an engraving of the bunny in its natural state (fuzzy evocations of Beatrix Potter) along with a brief description of its habitat and habits. This is followed by directions for preparation, and concludes with an engraving of the finished product laid out on a plate ready to eat. And within this very thorough compendium of methods for preparing and serving food, Isabella Beeton also provided many tips on preserving and maintaining the tools of the household.

Note the insight she brought to the care of copper utensils, warning that they could be potentially hazardous if they had lost their tinning: "Neither soup nor gravy should be suffered to remain in them longer than is absolutely necessary, as any fat or acid that is in them, may affect the metal, so as to impregnate with poison what is intended to be eaten." To clean marble she recommended mixing soap lees, turpentine, pipe clay, and bullock's gall into an abrasive paste. Or soda, pumice stone, and powdered chalk would do the job (these materials may have been very efficient but they were not exactly 'conservation friendly'). Floorcloth (linoleum) could be brought to a fine gloss by the application of milk. Gilt frames could be cleaned with flour of sulphur added to water in which onions or garlic had been boiled (pity the housemaid who had to use this). Mrs. Beeton also included one of the most enduring of household nostrums which is still used in many a museum and private home: German furniture gloss. Composed of yellow wax, black rosin, and oil of turpentine, this stuff is the bane of furniture conservators and illustrates well the difference between looking after the household and caring for museum collections.

Mrs. Beeton, as readers have known the book for nearly a century and a half, contains 1112 pages of dense text, and one can dip again and again into this massive work and still find snippets of interest. Use it regularly for an inside look at the 'lived culture' of the period in which it was written — just don't trust all those cleaning recipes when caring for your precious artifacts!

1. Beeton, I. *Beeton's Book of Household Management*. London: Chancellor Press, 1982 (facsimile reproduction of 1861 publication).

The Science of Conservation

Colorimetry

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

Measurement of original paint, Ontario Legislative Building, Queen's Park, Toronto.

The conservation assessment of a heritage architectural building often includes a condition assessment of its interior elements including wood, plaster, metal, tile, and marble, as well as documentation of paint and surface finishes. Such assessments may also involve documentation of original colour or gloss, as well as recommendations on the selection of materials that can replicate the colours or finishes of original materials.

The simplest method of assessing colour is visual colour matching, but the accuracy of this method may be limited by the viewing conditions, sample size, background/surround colour, level and type of illumination (fluorescent, incandescent, or daylight), directional characteristics of the surface (texture, gloss), and skill of the viewer. Visual colour matching can be further complicated with original surfaces that have only a very thin paint layer, or have a texture which makes isolation of one

coloured layer very difficult. In addition, because paint components have a tendency to change colour as they age, the colour that is seen likely differs from the original colour.

The use of a spectrophotometer can eliminate many of the problems associated with visual colour matching for painted surfaces, and on-site measurements with a portable machine can be almost as quick. A small 'window' is first opened by sanding or cutting down to the original or desired paint layer, and then the colour of a circular 4-mm-diameter area is measured with the spectrophotometer. The process is completed by repainting the window to match the current colour.

The spectrophotometer provides documentation of the colour values (Munsell numbers and CIEL*a*b* coordinates). The closest colour match to a modern commercial paint or custom-mixed paint (in whatever brand line has been specified by the client) can then be selected. But machinery cannot totally replace the human eye, and a visual colour match should also be made using ambient as well as alternate light sources (when available).

The use of a spectrophotometer combined with visual colour matching provides the best possible match to the original colour.

On Display

Louis XV Dressing Screen

by James Hay, Senior Conservator, Treatment and Development Division - Furniture and Decorative Arts

This dressing screen from Fulford Place[1] in Brockville, Ontario, consists of three frames hinged together. The upper part of each frame is filled by an embroidered textile stapled over an interior frame, and the lower part is filled with a solid wood panel. These panels are carved, painted, and gilded on the front face, but the reverse face is flat, unpainted, and covered by a patterned velvet.

The screen arrived at CCI in pieces. The centre frame was broken in several places, with some carved details missing. Bare wood showed where gilding had been lost. The silk embroidery on the upper textile panels was deteriorating, torn, and splitting (almost ragged), and the textile on the reverse sides of the panels was very degraded.

After puzzling the pieces together for the 'before' photos, the embroidered upper panels were removed from the frames and sent to textile conservators for treatment. The textile on the reverse sides of the panels was too degraded to be repaired so it was removed and saved. The centre frame and panel were then reassembled and repaired. The losses were replaced by pieces of poplar that were carved to fit and the wood was regilded where necessary.

The centre wood panel had to be flattened before it could be fit into its frame, but conventional methods of controlled moisture and pressure proved to be unsuccessful. The distorted panel was eventually flattened by routing grooves in the reverse side, cutting 6-mm-wide slots one after another, and then fitting in 58 little pieces of poplar the height of the panel. Each piece was a little wider at the back edge than at the front (a 5° taper was possible), and together they served to wedge open the concave reverse side of the panel. Once the curve of the panel matched that of the frame, shallow butterfly dovetails were installed to stop earlier cracks. The final step was to coat the edges and reverse face of the panel with shellac followed by four coats of varnish to act as a moisture barrier for the reverse face. To ensure the panel remains in plane, special clips were made to hold it against the frame yet allow it to expand and contract.

The pieces of the dressing screen were puzzled together for this 'before' picture.

With the frame and wood panels back together, the conserved embroidered textile could be reattached to the upper part of each frame, and new textile applied to the backs of the panels.

As soon as treatment is completed, the dressing screen will be returned to Fulford Place, where it will be on display along with the rest of the original furnishings.

1. Fulford Place is an Edwardian mansion that was built by Senator George Taylor Fulford between 1899 and 1901. His descendants donated the mansion and its contents to the Ontario Heritage Foundation, which opened it to the public as a house museum in June 1993.

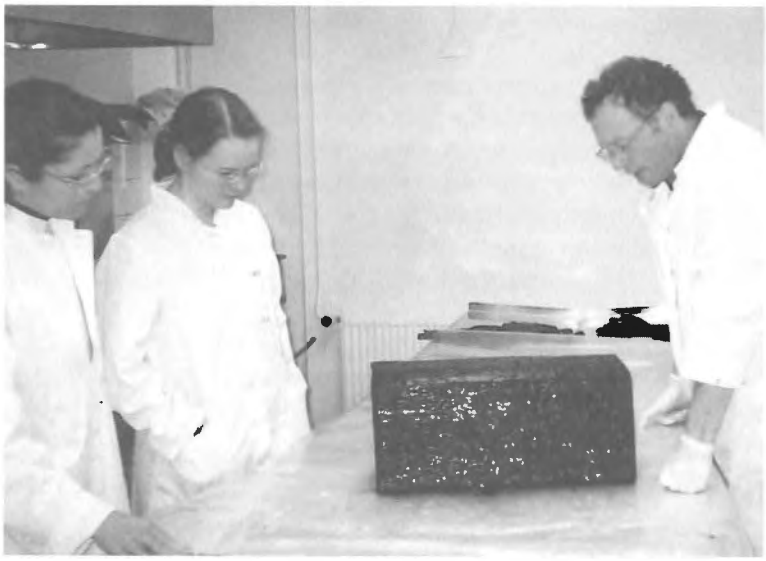
New Directions in Education for Marine Archaeological Conservators

by David Grattan, Manager, Conservation Processes and Materials Research Division

In September 2000, a new diploma course in Marine Archaeological Conservation was initiated at the EVTEK Institute of Art and Design in Vantaa, Finland. The course complies with the European Credit Transfer system (it is worth 120 credit points — about half the total required for a basic degree), and is the first international training course of this scope on this topic to be offered anywhere in the world. It marks a significant step in the training of marine archaeological conservators.

This new course is being funded by the Finnish government to promote the conservation of the many well-preserved shipwrecks in the Baltic Sea.[1] The curriculum has been designed to offer a multidisciplinary approach, and includes both theoretical and practical training in marine archaeology, the underwater environment, materials analysis, treatment of underwater finds, and the in situ conservation of shipwrecks. Sixteen students (10 from Finland and one each from Germany, Australia, Sweden, Denmark, Belgium, and Serbia) from varied backgrounds are currently enrolled and should receive their diplomas in March 2002.

The course is managed by Heikki Häyhä of the EVTEK Institute and was designed and set up with the assistance of Vasilike Argyropoulos from the Technical Education Institute in Athens, Greece. Experts from around the world are participating in the course delivery, ably assisted by Course Coordinator Christian Degrigny. Two Canadians have served as instructors: in September 2000, Cliff Cook of the Ontario Service Centre of the Parks Canada Agency (who was on a temporary assignment at CCI at the time) gave a section on on-site storage and packing, operating a conservation laboratory, and drying techniques; and in February and March 2001, I gave a section on the treatment of organic archaeological finds.



David Grattan (right) and two students in the Marine Archaeological Conservation program examine a piece of waterlogged wood.

My session concerned a number of organic materials, but especially wood. It dealt with the biological, physical, and chemical nature of wooden artifacts and also of the materials used to treat them; the issue of degradation; and how treatment interacts with the inherent properties of wood as well as the changes caused by deterioration. A historical overview of treatment methods and a discussion of the science on which these methods are based were also included. The aim was to give a comprehensive understanding of one aspect of material conservation — not just a series of recipes but rather a mixture of philosophy and scientific knowledge.

Participating in this course forced me to think carefully about the meaning of conservation and the way in which it should be taught. It has always struck me that the object of conservation is to convey safely the evidence of the past with as little deterioration and as little cultural influence as possible. To accomplish that objective it is first necessary to have a scientifically based understanding of the nature of the materials that make up the object, and the impact of any intervention. But it is equally important to understand that truthfulness and honesty must always be the underpinning of any treatment. Thus it is important to teach not only the science of conservation but also the ethics.

At present it is uncertain whether or not the Marine Archaeological Conservation course will be repeated, although there are some plans for 2003. However, it has been an invigorating and stimulating experience for everyone involved.

1. Wrecks found in these waters are unusually well-preserved due to the cold climate and the absence of shipworm. One such example is the *Vrouw Maria* (a Dutch ship that sank in 1771 while carrying art treasures for Catherine the Great) which was discovered in the Baltic Sea off the coast of Finland in 1999.

Pesticide Residues in Museum Collections

Jane Sirois, Conservation Scientist, Analytical Research Laboratory

The possibility that pesticides may be present in museum collections has been known for some time. Many of these compounds are toxic, and can be dangerous to individuals who come in contact with them. It is therefore important to identify and understand all pesticide residues that may be present in natural history specimens as well as objects in anthropological and ethnographic collections.

The identification of pesticides is particularly important for objects that are being repatriated to Aboriginal communities and individuals. Such items (e.g. masks and other sacred artifacts) will often be used in ways that bring them into greater contact with people than had previously been the case. These changes in usage can substantially increase the inherent risks of any toxic materials that might be present.

The issue of pesticides in museum collections and, in particular, the concern regarding the presence of pesticides in artifacts being repatriated to Aboriginal communities is being addressed by groups and institutions in a number of countries including Canada, the United States, and Denmark.

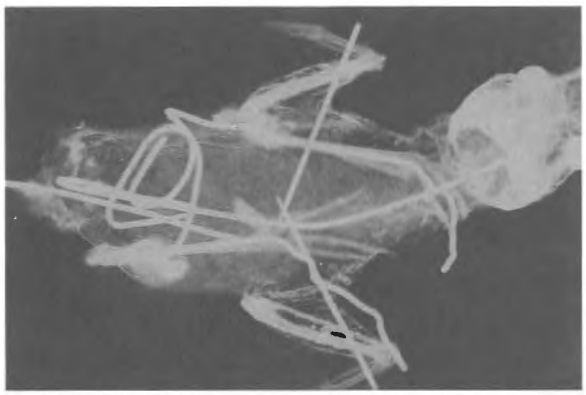
Throughout the 19th and early-20th centuries, it was common practice for museums to apply arsenic or mercuric chloride solutions to natural history specimens as insecticides. Some museums used this treatment for ethnographic collections too. Other less publicized pesticides that have been identified in museum collections include naphthalene, paradichlorobenzene, dichlorovos, DDT, lindane, methyl bromide, lead arsenate, and borax. Unfortunately the application of these compounds was not necessarily recorded as part of an artifact's treatment history, and there may be no documentation in treatment dossiers. Collections must therefore be tested to determine whether or not pesticides are present.

CCI's Analytical Research Laboratory has been analysing artifacts to determine the presence of arsenic and mercury compounds since 1987; more than 850 natural history specimens and 450 artifacts in Canadian Aboriginal collections, as well as artifacts from other countries, have been examined. Investigations have recently begun on organic pesticides too, one example being a pilot study of non-destructive methods (e.g. gas chromatography/mass spectrometry to analyse vapours from volatile organic pesticides) to detect naphthalene, paradichlorobenzene, and dichlorovos.

In addition to this type of research and analysis, the conservation community has recently held several seminars concerning the contamination of museum collections with pesticide residues. At the invitation of the organizers, CCI has participated in two of these: *Contamination of Museum Materials and the Repatriation Process for California Indians: A Working Conference* at San Francisco State University (September 29 – October 1, 2000) and *Contaminated Collections: Preservation, Access and Use* at the National Conservation Training Center in Shepherdstown, West Virginia (April 6–9, 2001), hosted by the Society for the Preservation of Natural History Collections, the National Park Service, and the Smithsonian National Museum of the American Indian. CCI's work on the analysis of museum objects for pesticide residues was presented at both of these meetings. At the Shepherdstown meeting CCI also participated in two working groups — one on Policy and Planning and one on Testing Protocols/Research and Development.

Researchers at CCI and other organizations are currently looking into some of the issues raised at both conferences: what pesticides may have been used in collections; methods to identify toxic materials present on the objects; the health effects of these materials on the people handling them; at what levels these materials pose a threat; proper handling and use protocols; and possible treatments to remove pesticides from artifacts.

Future work must proceed in a collaborative environment, and links with the Aboriginal communities, museums, occupational health officers, toxicologists, and other scientists are being pursued. By working together, both the artifacts and the individuals handling them can be protected from the dangers posed by pesticide residues.



X-radiograph of a natural history specimen (shrike) showing the presence of arsenic (evident as speckled white areas) in the bird's skin.

"Managing Change: The Museum Facing Economic and Social Changes"

by David Grattan,[1] Manager, Conservation Processes and Materials Research Division

The most recent General Conference of the International Council of Museums (ICOM) was held in Barcelona, Spain, from June 28 to July 6, 2001. This major event included many parallel sessions under the umbrella topic "Managing Change: The Museum Facing Economic and Social Changes." Of the many items up for discussion, one issue of obvious concern is the progress of ICOM reform.

ICOM is adapting to the challenges presented by rapid growth and a fundamentally changing environment. Among the many aspects of this reform process are revisions to the *Code of Ethics* and *Statutes*, which provide the ground rules for the operation of ICOM itself and of its member museums. These revisions were presented at the Barcelona conference, and can be seen on ICOM's Web site (www.icom.org). The implications of these changes are of great concern to those interested in the preservation of cultural heritage — especially professional conservators.

The issue of conservation figures prominently in the revised documents, and the stringency of the conservation requirements placed on museums by the *Code of Ethics* is impressive. In a nutshell, museums are required not only to regard conservation as an integral part of their function, they are also obliged to employ professionally trained staff. These statements inspire confidence that museums will recognize the importance of conservation within their organizations. But even as ICOM's requirements are becoming increasingly rigorous, the position of conservation within museums is weakening.

This paradox was brought forward during the conference at the Conservation Committee's round-table discussion "Reinventing the Conservation Department" where the topic of change was addressed by representatives from a number of leading conservation institutions: Jean-Pierre Mohen of the Centre de recherche et de restauration des musées de France, Rik Vos of the Instituut Collectie Nederland, Gaël de Guichen of the International Centre for the Study of the Preservation and the Restoration of Cultural Property (ICCROM), Tim Whalen of the Getty Conservation Institute, and Bill Peters of CCI.

Nancy Hushion, a museum consultant from Canada, started the discussion with a presentation from the perspective of museum managers — who must regularly deal with reduced financial support for their institutions. Faced with difficult choices about where and how to allocate limited resources, one of the most common solutions has been to eliminate conservation and conservators from organizational structures. As a result, many institutions no longer have conservation departments. Conservation has become a service to be acquired on an 'as needed' basis, rather than an integral museum discipline. Sometimes the actual Conservation Laboratory has even been used for something else entirely (e.g. a gift shop). These solutions, while answering the dilemma of reduced funding, are in sharp contrast to the requirements of ICOM's *Code of Ethics*.

The following items from the ICOM *Code of Ethics* illustrate the importance that ICOM has placed on conservation within the museum.

2.1. Minimum Standards for Museums. The governing body has the responsibility of ensuring that all collections in its care are adequately housed, conserved, and documented.

2.4. Premises. The buildings and facilities must be adequate for the museum to fulfill its basic functions of collection, research, storage, conservation, education, and display.

2.5. Members of the museum profession require appropriate and continuing academic, technical, and professional training in order to fulfill their role in the operation of the museum and the care for its heritage.

3.1. Collections. The collections policy should address issues relevant to the care and use of the museum's existing public collections. It should state clearly the areas of proposed collecting and include guidelines for maintaining the collections in perpetuity. Instructions should also be included in the policy on acquisitions with conditions or limitations (see 3.5) as well as a restriction against acquiring material that cannot be catalogued, conserved, stored, or exhibited properly.

6.2. Members of the museum profession should not delegate important curatorial, conservation, or other professional responsibilities to persons who lack the appropriate knowledge and skill, or who are inadequately supervised, to assist in the care of the collections.

6.3. An essential ethical obligation of every member of the museum profession is to ensure the proper care and conservation of collections and individual items for which the employing institutions are responsible. Recognition and respect for the cultural and physical integrity and authenticity of individual objects, specimens, or collections are fundamental values in conservation work.

The root of this tendency to disregard conservation activities is often the requirement for public accountability which means that museums must be seen to be economically stringent and efficient. This has led to an emphasis on exhibition rather than the traditional more hidden activities of research, study, and conservation. This can be compounded by the fact that museum directors may be 'media stars' without museum training (a situation that had been discussed by Luis Monreal in his plenary speech earlier in the conference) and may not have the same regard for conservation activities as would a museum professional with a research or an academic background.

How then can institutions and individual conservators ensure the maintenance of professional conservation standards within museums? The speakers in the session stressed the need to communicate the importance of conservation work more effectively, not only to colleagues but also to the public. They also emphasized the need to be aligned with the needs of clients — and in the context of a museum this means alignment with the goals and objectives of the museum. Another aspect that came up repeatedly was the necessity of developing partnerships among museum organizations and operating more within team structures.

By the end of the session, the following conclusions were reached:

1. Conservators must take a higher level of responsibility for the preservation of cultural heritage.
2. Conservation should become an important aspect of training for museum managers.
3. Conservation must clearly be seen to respond to client needs (and the client is the museum or the museum visitor, not the object).
4. Conservators must recognize that museums have changed radically, and to remain part of the museum they will also have to change.
5. Conservators will have to convince the public that 'real objects' and 'authenticity' are important.

In short, conservators will have to communicate clearly the importance of conservation to everyone concerned, especially the public. In addition, the importance of forming partnerships with museum organizations and working in team structures with other professionals is increasingly evident.

To respond to these challenges, the following resolution was put forward to and passed by the General Assembly:

> *Considering* that the world's cultural and natural heritage, both movable and immovable, is fundamental to our cultural identity,
> *Recognising* the significance of this heritage, its vulnerability, and the moral obligation to guarantee access to it for present and future generations,
> *The 20th General Assembly of ICOM, meeting in Barcelona, Spain, on 6 July 2001*
> *Urges* ICOM to stimulate the dissemination of information on the fragility of our heritage and activities which promote public awareness of conservation activities.

If this resolution can be successfully implemented, perhaps Gaël de Guichen will be right in saying "We should never again see the sign 'closed for conservation' - the sign should read - open for conservation."

1. David Grattan is also the Chair of the ICOM Committee for Conservation.

Charlie Costain has been elected Chair of the ICCROM Council for a 2-year term.

Charlie has represented Canada at ICCROM's General Assembly for the past 2 years; his election as Chair is a recognition of his stature within the international heritage preservation community, and also a recognition of the important role that the Canadian Conservation Institute has played in ICCROM for many years.

Congratulations, Charlie!

Bill Peters

New *CCI Notes*

There will soon be new *CCI Notes* on topics ranging from totem poles to industrial collections to paintings. These new titles will be available individually, as a package, or as part of a complete set. For more information, see the 2002 Publications and Special Products catalogue or use our electronic notification service (cci-icc_publications@pch.gc.ca).

CCI Staff Receive Deputy Minister's Awards

During Public Service Week (June 2001), the Deputy Minister of the Department of Canadian Heritage recognized various employees/teams for outstanding contributions. Three of the groups so honoured included CCI employees:

The **Permanent Paper Research Project**, done in collaboration with the Pulp and Paper Research Institute of Canada (Paprican), found that it is the acid content, rather than lignin, that is the main factor in determining the longevity of paper. The project, which began in 1994, resulted in the announcement of a new Canadian Standard in September 2000 (CAN/CGSB-9.70-2000 Permanence of Paper for Records, Books). The team included CCI's Paul Bégin (team leader), David Grattan, and Joe Iraci, contract workers Elzbieta Kaminska and Donna Woods, as well as Norayr Gurnagul of Paprican.
Photo: Joe Iraci (left) and Paul Bégin.

Symposium 2000 - The Conservation of Heritage Interiors was a 3-day international symposium that was hosted by CCI at the National Gallery of Canada in May 2000. Organized in collaboration with the Association for Preservation Technology International and the Heritage Conservation Program of Public Works and Government Services Canada, the symposium emphasized the need for co-operative approaches that include a wide range of professionals when executing conservation projects in historic interior spaces.
Photo of CCI team members: (front row, from the left) James Bourdeau, Sophie Georgiev, Linda Leclerc, Maureen MacDonald, Barbara Patterson, Christine Bradley; (back row, from the left) Bob McRae, Michael Harrington, Craig Lauber, Nancy Binnie, Colette Landry, Charlie Costain. Absent: Brian Laurie-Beaumont, Janet Mason, Helen McKay.

Forum 2001 was a departmental initiative for employees in the CR, ST, and AS job categories. It flowed from the Deputy Minister's commitment to "Becoming a Learning Organization," which was outlined in his "Scorecard 2000." The conference, which took place in January 2001 in Cornwall, ON, was designed as a way of redefining the administrative community and regenerating its capacity to provide services to clients. CCI's Chris Juhasz and Colette Landry participated in the organization of this event.
Photo: Charlie Costain (left) with award-winner Colette Landry.

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.

Winter 2002

Current Issues in Light and UV Deterioration
Host(s): Eastern Ontario Regional Museums Group
Location: Brockville (Brockville Museum), ON
Date: January 17-18, 2002
Contact(s): Bonnie Burke, Curator/Director
Tel.: (613) 342-4397
E-mail: bmchin@cybertap.com
Leader(s): Stefan Michalski, Jean Tétreault

Packing and Transport of Works of Art
Host(s): Ontario Association of Art Galleries
Location: Cambridge, ON
Date: January 24-25, 2002
Contact(s): Sandra Fraser, Program & Membership Services
Tel.: (416) 598-0714
E-mail: oaag@interlog.com
Leader(s): Paul Marcon

Emergency and Disaster Preparedness for Cultural Institutions
Host(s): Prince of Wales Northern Heritage Centre (PWNHC)
Location: Yellowknife, NT
Date: February 5-6, 2002
Contact(s): Rosalie Scott, Conservator
Tel.: (867) 873-7664
E-mail: rosalie_scott@ece.learnnet.nt.ca
Leader(s): David Tremain, Deborah Stewart

Modern Information Carriers
Host(s): Archives Society of Alberta
Location: Edmonton, AB
Date: February 15-16, 2002
Contact(s): Linda Fraser, Chair, Archives Society of Alberta Education Committee
Tel.: (403) 220-7420
E-mail: lmfraser@ucalgary.ca
Leader(s): Joe Iraci, Tom Strang

Modern Information Carriers
Host(s): Manitoba Museum of Man and Nature
Location: Winnipeg, MB
Date: February 18-19, 2002
Contact(s): Barry Hillman
Tel.: (204) 956-2830
E-mail: bhillman@manitobamuseum.mb.ca
Leader(s): Joe Iraci, Tom Strang

Emergency and Disaster Preparedness for Cultural Institutions
Host(s): Yukon Council of Archives
Location: Whitehorse, YK
Date: February 28 - March 1, 2002
Contact(s): Donna McBee, Director
Tel.: (867) 667-8785
E-mail: donna.mcbee@gov.yk.ca
Leader(s): David Tremain, Deborah Stewart

Détérioration due à la lumière et aux rayons UV
Host(s): Société des musées Québécois
Location: Montréal, QC
Date: To be determined
Contact(s): Manon Lapointe
Tel.: (514) 987-3264
E-mail:
Leader(s): Jean Tétreault, Stefan Michalski

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.

May

At the annual conference of the **Canadian Association for Conservation of Cultural Property** in Halifax, NS, Lyndsie Selwyn delivered a lecture on "Lead in Conservation."

Judy Logan presented a 1-day workshop "Field Conservation" at the **Canadian Archaeological Association** conference in Banff, AB (presented in partnership with Kasey Brewer of the **Royal Saskatchewan Museum** in Regina and the **University of Calgary's Department of Archaeology**).

At the annual conference of the **American Institute for Conservation of Historic and Artistic Works** in Dallas, TX (May 30 – June 5): Debra Daly Hartin and Stefan Michalski presented the paper "Creating Conservation Crossovers and Connections" (which they co-authored with Carole Dignard and Jan Vuori); Season Tse presented the paper "Effect of Washing on Paper and Cellulosic Textiles: An Overview and Update of CCI Research"; and Linda Street manned the CCI booth in the trade show with help from Stefan, Debra, and Season.

At the **Portuguese Institute for Conservation and Restoration** in Lisbon, Portugal, Stefan Michalski delivered a lecture on preventive conservation and travelling exhibitions at a conference aimed at developing a National Policy on Travelling Exhibitions.

At the **Museum of Modern Art** in New York, Stefan Michalski met with representatives from major institutions in the United States, Canada, the United Kingdom, and the Netherlands to discuss conservation research in contemporary art, including research activities, needs, and possible collaborations; the meeting was hosted by the **Getty Conservation Institute** (GCI) and the **Andrew W. Mellon Foundation**.

Siegfried Rempel made site visits to the **MacLaren Art Centre** in Barrie, the **Robert McLaughlin Gallery** in Oshawa, and the **Taras H. Shevechenko Museum** in Toronto (all in Ontario).

June

At the Spring Meeting of the **European Materials Research Society** in Strasbourg, France, Paul Bégin presented a paper "ASTM/ISR Research Program on the Effects of Ageing on Printing and Writing Papers: Thermal Accelerated Ageing Test Method Development."

Bob Barclay attended a meeting at the **International Center for the Study of the Preservation and Restoration of Cultural Property (ICCROM)** in Rome for "Generation 2" to formalize the form, content, and detailed structure of a guide for producers of **PREMA** modules on preventive conservation for sub-Saharan African collections.

Judy Logan began a 2-month assignment as the on-site conservator in **Ferryland**, NF, where a 17th-century English colony is being excavated; the project is under the direction of Dr. James A. Tuck, Memorial University of Newfoundland.

James Bourdeau and Debra Daly Hartin visited an historic house in **Braeside** (near Arnprior, ON) that was built during the 1820s by lumber baron Alexander Macdonell to discuss a plan of action for preserving the site.

Renée Dancause and Janet Wagner presented a workshop "Construction of Mannequins for Historic Costumes" for the **Minnesota Historical Society** in Bemidji, MN.

As part of the ongoing Canadian Forces Museums' preventive conservation surveys contracted by the **Directorate of History and Heritage of the Department of National Defence**, Helen McKay and Siegfried Rempel visited two military museums in Ontario: **The Hastings and Prince Edward Regiment Military Museum** in Belleville and the **Base Borden Military Museum** at CFB Borden.

Seigfried Rempel visited **Pointe-à-Callière** in Montreal, QC, as part of a Canada Travelling Exhibitions Indemnification Program review.

July

Nancy Binnie accompanied marine archaeologists from the **Underwater Archaeological Services Unit of Parks Canada** to assist in site monitoring of the shipwrecks *Célèbre* and *Prudent* sunk during the second and final siege in 1758 of the Fortress of Louisbourg, NS.

James Bourdeau participated in a site planning meeting in Hollywood, CA, for the **Freeman House** designed by Frank Lloyd Wright and currently owned by the **University of Southern California**; discussions involved the conservation of Wright's poured and moulded decorative concrete facing elements for the interior and exterior of the house.

Marie-Claude Corbeil participated in a meeting of the editors of *Studies in Conservation* at the **International Institute for Conservation of Historic and Artistic Works** office in London, UK.

Marie-Claude Corbeil, Kate Helwig, Jeremy Powell, and Ian Wainwright participated in the filming of a segment on art fraud for the television program "Exhibit A: Secrets of Forensic Science" to be broadcast in winter 2002.

Siegfried Rempel visited the **Winnipeg Art Gallery** to facilitate an upgrading project, and the **Mendel Art Gallery** in Regina, SK, to mediate a meeting between gallery staff, city staff, and a private-sector consultant for a proposed upgrading project.

Siegfried Rempel and Brian Laurie-Beaumont visited several Aboriginal heritage sites in Saskatchewan to gather information on the development of these facilities and offer advice on issues facing them: **Wanuskewin Heritage Park**, **Poundmaker Historical Centre**, and **Treaty Four Keeping House**.

Brian Laurie-Beaumont and Siegfried Rempel gave a workshop on Aboriginal facility development planning at the **Medicinal and Aromatic Plants Aboriginal Heritage Garden** in New Brunswick to 24 participants representing 13 Atlantic First Nations communities with heritage cultural projects.

At **GCI** in Los Angeles, CA, James Bourdeau met with Francois Leblanc (Director of Field Projects) and Valerie Dorge (Program Co-ordinator) regarding common areas of interest between GCI and CCI in built heritage projects and architectural materials research.

August

Nancy Binnie visited **Bruce Peninsula National Park/Fathom Five National Marine Park** in Tobermory, ON, to recover iron corrosion samples which are part of a long-term fresh-water corrosion study, and to assist Park staff with the shipwreck monitoring program implemented in 1992.

Nancy Binnie accompanied marine archaeologists from the **Underwater Archaeological Services Unit of Parks Canada** to Restigouche National Historic Site to assist in underwater survey and site monitoring projects on the shipwrecks *Machault* and *Bienfaisant* sunk in 1760 during the Battle of the Restigouche.

At the request of the Yukon Territorial Government, Siegfried Rempel conducted site visits of the **Dawson City Museum** and the **McBride Museum** in Whitehorse; he also visited the **Prince of Wales Northern Heritage Centre** to meet with their staff and Northwest Territories engineers and architects to negotiate responsibilities for a proposed upgrading of the facility.

September

Jean Tétreault and André Bergeron, a conservator at the Centre de conservation du Québec, presented a seminar on the new trends in the implementation of conservation standards at the annual meeting of the **Société des musées québécois** in Quebec, QC.

At **LACONA IV** (the 4th international conference on Lasers in the Conservation of Artworks) at the **Palais du Louvre** in Paris, Véronique Vergès-Belmin (of the Laboratoire de Recherche des Monuments Historiques in Champs-sur-Marne, France) and Carole Dignard presented their jointly authored talk "Laser Yellowing: Myth or Reality?".

James Bourdeau visited the **Uplands Cultural and Heritage Centre** in Lennoxville, QC, to conduct a site investigation of paint finishes of the historic **Speid Mansion**; he also provided advice on preventive conservation issues related to the collection and the impact of community use on this heritage building.

Siegfried Rempel delivered a presentation "Survey Supported Collections Management" to a joint meeting of the **Organization of Military Museums of Canada** and the **U. S. Army Center of Military History** in Quebec, QC.

Maureen Macdonald presented a session on environmental monitoring equipment for the **Ontario Museum Association** course "Artifacts" (part of the Certificate in Museum Studies program) held at **Parks Canada's Ontario Service Centre** in Ottawa.

At the conference "Deterioration of Artists' Paints: Effects and Analysis" at the **British Museum** in London, UK (a joint meeting of the working groups Paintings 1 and Paintings 2 of the **International Council of Museums - Conservation Committee)**, and the Paintings Section of the **United Kingdom Institute for Conservation**), Leslie Carlyle gave a presentation "Historical Reconstruction of Artists' Oil Paint: An Investigation of Oil Processing Methods and the Use of Selected Artists' Mediums."

Siegfried Rempel conducted a site visit of the **Grande Prairie Museum** in Grande Prairie, AB.

Charlie Costain and James Bourdeau attended the **Canadian Art Gallery Hop** fundraising event in Toronto to support the important role of the magazine *Canadian Art* and raise the profile of conservation in the contemporary art community.

Siegfried Rempel gave a presentation "Art Galleries in Historic Structures" at a public consultation forum sponsored by the **Grimsby Public Art Gallery** in Grimsby, ON; this was followed by a meeting with the Gallery's Board of Directors to explore strategies for a future expansion.

October

At the **Smith Symposium II** "The Hiscock Site: Late Pleistocene and Holocene Paleoecology and Archaeology of Western New York State" hosted by the **Buffalo Museum of Science** in Buffalo, NY, Judy Logan presented a paper "The Feasibility of Preserving an Impression in Mud: Study of Soils from the Hiscock Site" (co-authored with Malcolm Bilz and Jane Sirois).

At the **Eastern Analytical Symposium** in Atlantic City, NJ, Geneviève Sansoucy gave a presentation "A Standard Protocol for the Analysis of Drying Oils by GCMS" in the session "Science in the Conservation of Cultural Heritage: Young Investigators."

CCI hosted the Professional Development Workshop "Adhesives for Textile and Leather Conservation: Research and Application" for 29 participants from 10 countries.

As part of an ongoing contract, Brian Laurie-Beaumont facilitated a planning meeting of the Steering Committee of the proposed **Transportation Heritage and Technology Centre** in Winnipeg, MB.