



The McCrae Medals: Reviving a Memory

by Tom Stone, Senior Conservator, Objects

Major John McCrae was a Canadian medical officer in the Second Battle of Ypres in May 1915. Deeply saddened by the death of his close friend Lieutenant Alexis Helmer (who was killed by a shell burst on May 2, 1915), McCrae composed *In Flanders Fields*. The poem gained almost instant popularity; to this day it is an internationally recognized symbol of sacrifice and renewal in times of war, and his image of the blood red poppy remains the universal symbol of remembrance. But the author did not survive the war. Exhausted by the overwork, continuing devastation, and unhealthy conditions at the front, McCrae died of pneumonia and meningitis on

January 28, 1918. His World War I medals were issued posthumously to his family.

In October 1997, 79 years after his death, McCrae's medals were auctioned in Toronto. Purchased for more than \$500,000 by Arthur Lee, a local businessman, the new owner magnanimously donated them to McCrae House (boyhood home of John McCrae, and part of the Guelph Museums). In April 1998, CCI was asked to undertake the conservation of these medals and to build a display mount for them. To work on objects of such significance to Canada was an exciting prospect.

Four medals and two medallions arrived at CCI: the Queen's South Africa Medal with

two bars (McCrae had served in the Boer War in 1900), the 1914-1915 Star, the British War Medal, the Allied Victory Medal, a Toronto Welcome Home medallion (issued to returning veterans of the Boer War by the City of Toronto), and a World War I Memorial Plaque (issued to families who had lost a member as a result of the war). With the exception of the Toronto Welcome



Much of the cleaning of McCrae's medals was done under a microscope.

Contents

The McCrae Medals: Reviving a Memory <i>by Tom Stone</i>	1
Message from the Director General	3
Brightening the Future of Canadian Art <i>by Peter Vogel and Robert Arnold</i>	4
Unveiling the Work of Emanuel Hahn and Elizabeth Wyn Wood <i>by Doris Couture-Rigert and Kate Helwig</i>	5
Packaging: The Good News <i>by Paul Marcon</i>	6
Covering All the Angles: PadCAD Version 3.0 Simplifies Cushion Design for Objects <i>by Paul Marcon</i>	9
Staying in Tune with Conservation <i>by Bob Barclay</i>	10
The χ File <i>by Marie-Claude Corbeil</i>	10
Revealing Dulongpré and his <i>Portrait of Jean Dessaulles</i> <i>by Debra Daly Hartin</i>	11
Getting to Know You <i>by Susanne Richter and Mary-Lou Simac</i>	13
Upcoming Workshops	14
Internships	15
CCI Services: Seminars, Lectures, Workshops, and Visits	16

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Home medallion, which is quite rare, all the medals were common issues that were presented to most servicemen of the Boer War and World War I. The special significance of these medals was the name John McCrae engraved around their edges.

The medals were in relatively good condition. The silver ones (the South Africa Medal and the British War Medal) showed moderate to heavy silver sulphide tarnish in recessed areas and around the legends but the fields were bright with only moderate scratching. Old metal polish residue was present in all these areas as well as in the stamped McCrae name around the edges. The two remaining medals and the two medallions were of copper alloys of various kinds; they displayed stable patinas ranging from a very lightly oxidized and fairly bright surface on the 1914–1915 Star to a beautifully even, dark chocolate brown patina on the Toronto Welcome Home medallion.

The silver medals were cleaned using a slurry of calcium carbonate powder and distilled water, much of the work being done under a microscope. The surface of the 1914–1915 Star was also polished slightly with calcium carbonate. All three medals were then washed with a nonionic detergent in distilled water, rinsed, and degreased with acetone. Finally they were given a protective coat of wax to slow down future tarnishing, and buffed to a high polish. The remaining copper alloy medal and medallions were washed and degreased in the same manner, but no protective wax was necessary as the stable patinas that had developed would protect them from further tarnish.

With the exception of the Queen's South Africa Medal, all the ribbons were probably replacements. They had been passed through the hangers on the medals and were not stitched or finished in any way; they were of different lengths, the edges were



The medals and mount after treatment.

fraying in some places, and they were somewhat creased. Protocol requires that the length from the bottom of a medal to the top of the ribbon be four inches. Renée Dancause of CCI's Textiles laboratory steamed three of the four ribbons to relax the creases, duly folded them to the appropriate length, and placed them through special clips that had been provided by the Honors

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and Awards Unit of the Department of Veterans Affairs.

The display mount was constructed by Bob Barclay of the Objects laboratory. Plexiglas was used rather than wood to avoid off-gassing problems that might lead to further tarnishing of the medals. Recesses to hold the Toronto Welcome Medallion and the Memorial Plaque were machined into the thick Plexiglas, and holes were drilled through it in the appropriate locations to tie the medals in place. The mount was then covered with dark burgundy nylon velvet that had been supplied by McCrae House. The medallion and the plaque were fitted into their recesses where they were held in place by means of pressure; the four medals were tied in place with nylon monofilament line which is essentially invisible.

The mount was designed to be displayed at a 45-degree angle in the museum but was built in such a way that the portion holding the medals can be detached and placed flat with a small Plexiglas lid. This allows the medals to be displayed in locations outside McCrae House in response to the demand in many parts of Ontario.

The medals were returned to their permanent home at McCrae House in time for a May 2 dedication ceremony.

Introduced to *In Flanders Fields* as school children, many staff had an interest in McCrae's medals and made a special effort to view them while they were at CCI. For those of us who had the honour to work on these medals, the poem we hear and the red poppy we wear will now

hold an even greater significance as we 'remember' each November 11.



The ribbons being attached.

Message from the Director General

During the past year CCI staff have put into practice the theory that underlies the Institute's new strategic directions. With ingenuity, the willingness to take risks, and a large amount of hard work and dedication, the team has proven its ability to carry out quality research and treatment for a wide range of mandated clients while developing new and innovative projects to generate revenue.

The first priority at the Institute is still the generation of knowledge in the conservation field through research and treatment activities. As Director General, I am continually impressed with the range and quality of this output as portrayed in the research reports, treatment proposals, publications, *CCI Notes*, and *Technical Bulletins* produced by staff, not to mention the many requests they receive to give advice, talks, and workshops, both nationally and internationally.

Comments from clients are eloquent testimony to the achievements of the people who work at CCI.

The Institute's new design for business management will provide improved support to scientists and conservators as they develop and deliver projects. The early evidence corroborates my belief that it is possible, through judicious application of CCI's expertise, to generate new areas of work for conservation in Canada.

One example is in the emerging field of architectural conservation. The Institute is playing a key advisory role in a massive restoration project for the Parliamentary Precinct in the nation's capital. CCI's team has assessed the conservation needs, set standards, and given advice to ensure that appropriate care will be taken of a fundamental part of the nation's

heritage—and that a large amount of the work will be available to professional, private-sector conservators. As a result of this input, approximately \$25 million of conservation-related work has been approved for the Centre Block portion of this project.

The Institute is anxious to undertake more such creative partnerships in other fields of conservation work. Staff have already been called upon to make recommendations for new ventures—and I invite all of you in the conservation and heritage field to present your proposals also. Working together we can ensure the future of conservation.

Bill Peters
*Director General and
Chief Executive Officer,
Canadian Conservation Institute*

Brightening the Future of Canadian Art

by Peter Vogel and Robert Arnold, Senior Conservators, Fine Arts

In 1997, staff of the Fine Arts section (in collaboration with a private conservator) carried out conservation treatment work on a large mural, *Homage to RFK*. Located in the National Arts Centre (NAC) in Ottawa, this acrylic on particle board is one of the main works of Canadian artist William Ronald.

Ronald came to prominence in the mid-1950's, successfully challenging the prevalent notion that a good Canadian artist stuck to sober backwoods subjects in the manner of the Group of Seven. His bold and aggressive canvasses soon made him a leading Abstract Expressionist whose paintings were eagerly sought by North America's leading galleries and collectors. One of the founders of the Painters Eleven, a group that included Jack Bush and Harold Town, he was truly one of the great Canadian art heroes. William Ronald died on February 8, 1998, at the age of 71.

His three-storey mural in the lobby of the Studio in the NAC is a vast expressionistic abstract of free wheeling design and vibrant colours; when he finished it in 1969 he stated: "If I never do another painting, I'll be happy for the rest of my life about this one."

The mural was first treated by CCI conservators in 1977, at which time it was projected that another treatment would likely be necessary within 20 years. This second treatment was carried out from April 1 to 10, 1997. Over the years the mural had suffered from stains, finger and scuff marks, abrasion, and losses, as well as airborne dirt and grime which dulled the true brilliance of the colours.

Surface dirt and stains were removed as much as possible using a weak solution of a high-foaming, neutral pH detergent applied to the surface

of the mural with soft sponges. Dissolved dirt and residues from the cleaning solution were gently wiped from the surface of the mural using terry cloth. The surface was then rinsed with distilled water, also applied with soft sponges, and gently wiped dry with terry cloth.

Access to the surface of the mural was provided by scaffolding along the lower levels, and by a "Genie" hydraulic lifting device at the upper levels. The highest parts of the mural could be reached only by using a sponge mop on a long pole.

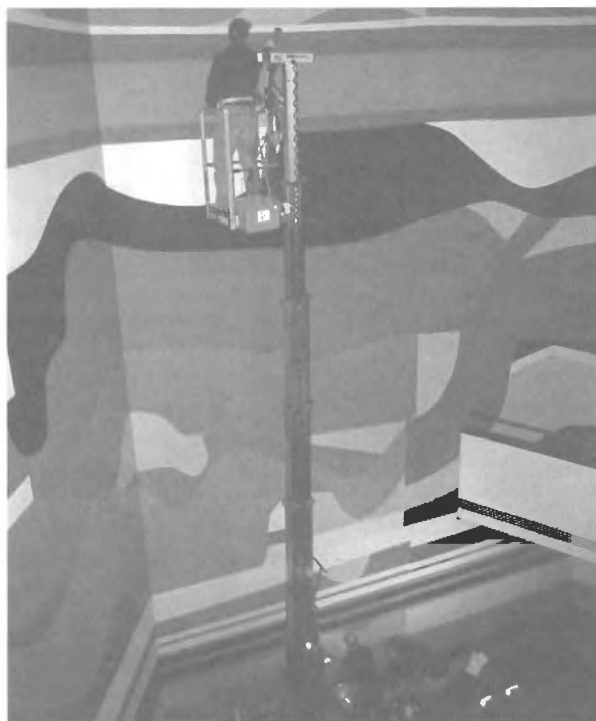
More vigorous cleaning, using stronger cleaning solutions, was required on the lower areas of the mural where furniture, the visiting public, and staff had come in contact with the surface. Noticeable losses to the paint layer were filled with a commercial wall-patching compound and were inpainted to match the surrounding colour using acrylic emulsion paints. In several locations, intractable stains and marks that could not be removed were retouched using the same acrylic paints.

To prevent or at least minimize further physical contact with the mural, a protective railing or a raised ledge was recommended.

The treatment was completed in time for the opening of the Oasis, a café lounge that features the newly restored

mural and thirty sculpted chairs by Sarie Marais. Both artists were present at the vernissage on May 29, 1997. As John Crompton, former Director and CEO of the NAC, remarked in his opening address: "The combination of the performing, the visual, and the culinary arts creates a synergy which allows for Canadians to experience Canada's rich cultural spectrum."

During the reception that followed, William Ronald was overheard saying: "The mural looks better now than when I painted it." Certainly the treatment has made the true brilliance of his colour vision much more apparent and accessible to viewers. The management of the NAC is to be complimented for maintaining this mural for their patrons, who will now be able to enjoy and appreciate it for many years to come.



Robert Arnold and Peter Vogel, and private conservator Wojciech Jakobiec, treating *Homage to RFK* [acrylic on particle board, 13.4 by 18.3 m (44 by 60 ft.), painted by William Ronald in 1969] at the National Arts Centre in Ottawa, April 1997.

Unveiling the Work of Emanuel Hahn and Elizabeth Wyn Wood

by Doris Couture-Rigert, Conservator of Sculpture and Decorative Arts, National Gallery of Canada,
and Kate Helwig, Senior Assistant Conservation Scientist, Analytical Research Laboratory

"Emanuel Hahn and Elizabeth Wyn Wood: Tradition and Innovation in Canadian Sculpture" was recently organized and circulated by the National Gallery of Canada (NGC). The conservation staff at NGC collaborated with scientists at CCI during their examination and treatment of 71 sculptures in preparation for this retrospective exhibition, and in the process uncovered new information about the materials and techniques of these two important Canadian artists.

Emanuel Hahn (1881–1957) and Elizabeth Wyn Wood (1903–1966), two Toronto-based sculptors, lived and worked side by side for more than 30 years. Both modelled their studio pieces, maquettes, and public monuments in clay, and then cast them in plaster as an intermediate stage in the production of the finished sculpture. Although the works were intended to be either cast in metal or sculpted in wood or stone, many were never produced in their final material and only the plaster version is extant. [This is reflected in the exhibition, which features 39 works in plaster.] The majority of the plasters were given a painted finish by the artist to create the impression of patinated bronze, with colours ranging from green and blue-green to various shades of brown. Stone and metals such as aluminum were also imitated. Both artists, but particularly Hahn, developed an impressively realistic *trompe-l'œil* effect with the superimposition of different coloured paint layers and washes. In some cases the surface finish was not added to the plaster until years after it had been cast.

All of the works featured in the exhibition were closely examined, tested, and treated over the course



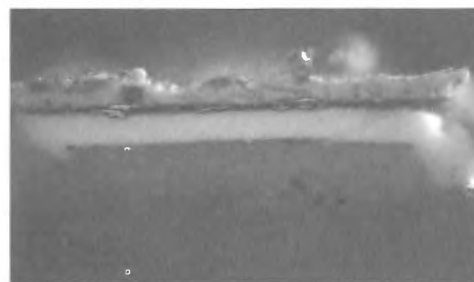
Harvester, one of the painted plaster sculptures by Elizabeth Wyn Wood that was examined. Reproduced courtesy of the National Gallery of Canada.

of the four years leading up to the first presentation at the McMichael Canadian Art Collection in Kleinburg, Ontario, in May 1997. Many of the works came from the artists' estate and all of these, with the exception of drawings and a sketchbook by Wood, were in need of comprehensive treatment. Some sculptures belonging to NGC also required extensive repair. Treatments for the metal sculptures included mechanical removal of corrosion, corrosion stabilization under vacuum, and visual surface integration for the patinated bronzes, and removal of tarnish for the tin sculptures; painted plasters required consolidation of interlayer cleavage and flaking, structural stabilization, surface cleaning, infilling, and inpainting.

During examination and treatment of the works, NGC conservators, intrigued by the artists' painting techniques and eager to gain more information about the materials used by the two artists, called on CCI to analyse paint samples from seven plaster sculptures by Hahn and three

by Wood. Minute samples of paint were removed from the sculptures and analysed using Fourier transform infrared spectroscopy, X-ray diffraction, X-ray microanalysis, and polarized light microscopy to identify the pigments and paint media. Cross-section samples were also prepared to elucidate the layering of paint used by the artists to achieve specific colouristic effects.

Five of Hahn's plaster sculptures painted to imitate bronze were chosen for analysis: *The Bard (Music)* (1924), *Allegory of War* (1915), *Sir William Mackenzie* (1924), *Jack Miner* (1932), and *War the Despoiler (War's Toll)* (1915). Visual examination and analysis of cross-section samples from these works indicated that several applications of paint were superimposed to create the final colour. Relatively thick underlayers of yellow, red, or green oil paint were covered with thinner layers of paint and toned with washes to create the effect of patinated bronze. The colours of the paint layers were created with complex mixtures of pigments. Hahn's palette for these works included vermilion, red lead, iron oxide pigments, emerald green,



A cross-section from the painted surface of *Harvester*. The lowest layer corresponds to the plaster substrate. A shellac sealing layer and a white, cellulose nitrate paint are visible on top of the plaster. Above the white layer, an application of aluminum flake paint and a beige toning layer can be seen.



Emanuel Hahn in his studio (195?). Reproduced with the permission of the Estate of Elizabeth Wyn Wood and Emanuel Hahn; photograph provided by the Queen's University Archives.

viridian, Prussian blue, cobalt blue, barium sulfate, gypsum, calcium carbonate, and lead white.

Analysis of a more modern work by Hahn, *Madame X in Mood Y*, a plaster sculpture cast in 1932 and first exhibited in the same year, also provided interesting information. The sculpture had a glossy, creamy-white finish made up of four separate paint applications. The earliest paint layer on the sculpture was found to contain the rutile form of titanium white

in a cellulose nitrate binding medium. A pure, fine particle rutile pigment was not introduced in the United States until 1942, indicating that the surface finish was added at least 10 years after the sculpture was first shown. Therefore the plaster must have been unpainted when first exhibited.

In contrast to the traditional patinated bronze faux-finish seen on many of Hahn's plasters, several of Wood's works were painted to imitate a silver-coloured metal such as cast aluminum or tin. Scientific analysis of two such finishes, on *Munitions Worker* (1944) and *Harvester* (1937), showed that in both cases the plaster substrate was covered with a white paint layer, made of rutile titanium white in a cellulose nitrate binding medium, followed by a layer of aluminum flake paint in the same medium. The aluminum surface was then toned with thin washes of oil paint—overlapping beige and blue washes in the case of *Harvester*, and an overall blue-green wash for *Munitions Worker*. The use of a modern cellulose nitrate paint in combination with oil paint is unusual, reflecting Wood's creative use of materials. Although the layering of oil paints on some of the other works showed extensive and problematic interlayer cleavage and

flaking, it is interesting to note that the mixed media technique used on *Munitions Worker* and *Harvester* did not lead to such problems.

As well as providing an opportunity to learn about the materials and techniques of Hahn and Wood, collaboration between staff of NGC and CCI scientists led to the development of state-of-the-art packing methods for three-dimensional plaster objects. This research, undertaken to ensure the safe transport of the fragile sculptures to five different Canadian venues, is described by Paul Marcon in the next article.

Further Reading

Baker, Victoria. *Emanuel Hahn and Elizabeth Wyn Wood: Tradition and Innovation in Canadian Sculpture*. Ottawa: National Gallery of Canada, 1997.

MacKay, Anne. "Treatment of a Painted Plaster Sculpture: The Bard by Emanuel Hahn." *Journal of the Canadian Association for Conservation*, Vol. 22 (1997), pp. 31–38.

Laver, Marilyn E. "Titanium Dioxide Whites" in *Artists' Pigments: A Handbook of their History and Characteristics*, edited by Elizabeth West FitzHugh. Washington: National Gallery of Art, 1997, Vol. 3, pp. 295–339.

Packaging: The Good News

by Paul Marcon, Conservation Scientist, Preventive Conservation Services

From an ancient dinosaur fossil sliding off a truck [1] to the world's most expensive sculpture developing a hairline crack [2], shipment of valuable artifacts can be hazardous. The good news is that sound package design principles and skilled cargo handlers can prevent most of this damage. The following cases describe some of our recent projects at CCI, and illustrate various

methods of coping with the uncertainties of shipping fragile objects.

Sculptures by Hahn and Wood
In February 1996, we collaborated with the National Gallery of Canada (NGC) to establish packaging strategies for 34 fragile plaster works and one ceramic that were part of an exhibition featuring the work of Emanuel Hahn and Elizabeth

Wyn Wood. Each item would be handled at least 10 times during the five-venue tour, so the risk of damage was as great during exhibit installation and removal as during shipping. Even skilled handlers would have difficulty placing the sculptures on a hard flat display surface without damaging their fragile bases, so a packing system incorporating a dual-purpose base serving both display



Photos courtesy of NGC.



Installation sequence for *The Bard (Music)*: (1) transport, (2) raising inner shell, (3) removing inner shell covers, (4) applying display panels.

and transit functions was developed for the large hollow plaster works.

The initial packing requirements were established using a multi-criteria decision method to rank-order the various artworks based on size, geometry, and stability of their surfaces [3]. The overall ranking procedure took approximately 3 hours for all 35 works, and the top-ranking sculpture was *The Bard (Music)*.

We based the packing system for this sculpture on a double-case design. The sculpture was contained inside a strong, rigid inner shell which was floated on polyurethane foam cushions. The lower portion of the outer packing case serves as a shipping container and a display pedestal; and the packing and unpacking sequence does not require manual handling of the sculpture at any time.

The highly fragile surface of the sculpture could not be used as a load-bearing surface. Thus a foam-in-place technique was used to hold the sculpture firmly inside the inner shell. This internal support technique was developed and refined by Michael Harrington and Paul Heinrichs of CCI. A barrier material between the foam-in-place material

and the interior surface of the sculpture ensures reversibility of the procedure while avoiding any contact between the foam material and the internal sculpture surface.

A full-size model of *The Bard (Music)* was fabricated by Craig Johnson Restorations Ltd. to test the overall performance of our packaging system in terms of operational characteristics (ease of packing and unpacking) and effectiveness against handling hazards. The model was similar to the original work in terms of materials and construction but was even more fragile.

The remaining works were also packaged inside double-case systems. The inner cases for the large works were made of wood, but smaller works were grouped and packaged inside inner cases made of triple wall cardboard [4]. Ethafoam supports were used to secure and immobilize smaller works in the internal containers. These mounts now provide long-term storage.

This careful attention to detail has paid off. After the tour, which included stops in Kleinburg and London (Ontario), Halifax (Nova Scotia), and Montreal (Quebec), all of the works were returned to NGC without damage.

The Columna Serpiente

The *Columna Serpiente* is a hollow plaster work, approximately 2.5 m (8 feet) in height, by Spring Hurlbut of Toronto (Ontario). It had not yet been fabricated when the artist contacted us for assistance. The first planned venue for the piece was California, and she had been considering executing the work on location due to concerns about damage to the column during shipment. However, if a safe shipping method could be found, her preference was to work in Toronto.

Based on a verbal description and a conceptual sketch of the work, we proposed a double-case packaging system. Practical advice concerning design of the containers, immobilization and support of the column, and internal padding of the inner case were communicated to the artist by phone and fax. Cushioning specifications were provided based on an accurate estimate of the combined weight of the completed work and its internal packing case. The need for the package to be fastened securely to the transit vehicle was emphasized, and the common carrier promised that this criterion would be met and that an air-ride transit vehicle would be used for all road shipments.

The *Columna Serpiente* was subsequently created in Toronto, and has been shipped to California, Mexico, and back to Toronto without damage.



Columna Serpiente. Photo courtesy of Spring Hurlbut.

Charged Hearts Exhibit

A central element of the Charged Hearts exhibit by artist Catherine Richards is a fragile glass terella that produces a glowing display of ionized gas [5]. The terella structure consists of an evacuated glass sphere approximately 50 cm in diameter, with a hollow 7-cm glass sphere (coated in graphite and containing a permanent magnet) suspended on a metal rod

inside the main enclosure. Concerned that the terella might be harmed during shipment, the artist commissioned the fabrication of two additional units. Unfortunately, both backup units were damaged during final manufacturing. Therefore a conservative packaging strategy was essential to ensure the original terella would arrive at its destination in a fully functional state.

The main difficulty in designing an effective package for the terella was to isolate and protect the internal glass sphere assembly, which is highly sensitive to the vibration associated with road transport. The flexibility of the internal sphere assembly prevented effective isolation with conventional foam materials, and its inaccessibility precluded bracing or other restraint methods for shipment.

We chose a tension-spring cushioning system. The low suspension frequency



The triwall box containing the terella on Ethafoam supports is cushioned with tension springs.

relative to that of the internal sphere assembly provides high vibration isolation efficiency at the frequencies that affect this component. It also has the ability to limit shocks to 10 g or less in the event of accidental drops during the handling phases of shipment (commercial items considered extremely fragile can withstand shocks of 15–25 g).

The terella has since been shipped to Toronto and Banff (Alberta) without damage or loss of functionality.

Although not many objects require this type of treatment, the tension-spring system was effective for dealing with the challenges posed by the original

terella design. Subsequent terella designs will incorporate a stiffer internal assembly, thereby allowing effective protection to be realized with more conventional foam-based cushioning systems.

CCI Seminars

A variety of items are routinely shipped for CCI training seminars.



A double-case system containing glass aquaria, a computer, electronic sensors, and hardware for use in an Integrated Pest Management seminar.

A double-case design can simplify the packaging of many museum objects. Once designed and tested, the inner case can be used with a variety of items of similar combined weight. All a packer has to do is secure and immobilize the contents. The outer case can also be changed according to shipping hazards that are likely to be encountered. Designing a cushioning system for a case such as the one shown above is possible using a variety of tools. They include manufacturers' data on cushioning material as well as the CCI Cushion Design Calculator and PadCAD version 2.0. The design procedure is further simplified in PadCAD version 3.0, which now provides a solution for all sides of an object and provides the packer with a cut list for foam cushioning material and the internal packing case dimensions.

Double-case Design Guidelines

All of the packaging projects described are variations on a double-case design. The practical aspects to keep in mind when designing such a system include:

- Gently support, restrain, or immobilize any parts of an object that may oscillate during shipment.
- Use a strong inner case or transit framework to square up irregular object geometry and distribute static and dynamic loads.
- Secure and immobilize the object(s) inside the inner case. The objective is firm evenly distributed support without strain on any part of the object; it should be easy to pack and unpack. Possible solutions range from simple wrapping to custom-fitted mounts.
- Distribute weight evenly in the inner case when packing multiple objects. Partition the case interior for heavy objects so as to resist and redistribute deceleration loads.
- Design protective cushions for effective shock isolation. The design of an effective system includes consideration of pad geometry, selection of appropriate materials, and provision of adequate clearance for efficient cushion operation.
- Performance-test the completed package (if possible) using simulated loads and shock monitoring devices to ensure that all the design requirements have been met.

References

1. *The Ottawa Citizen*, September 25, 1997, "75-million-year-old dinosaur fossil reduced to rubble in freak accident."
2. The Web site <http://www.telegraph.co.uk/graphics/98/3/6/wgrace.gif> describes the appearance of a shallow crack on the sculpture *Three Graces* which is being blamed on transit from Edinburgh to Madrid by road and sea transport.
3. Saaty, T.L. *The Analytic Hierarchy Process, Planning Priority Setting and Resource Allocation*. Pittsburgh: RSW Publications, 1990.
4. Canadian Conservation Institute. "Making Triwall Containers." *CCI Note 1/4*. Ottawa: Canadian Conservation Institute, 1997.
5. For more information see the Web site for the Charged Hearts exhibit (<http://charged-hearts.net>).

Covering All the Angles: PadCAD Version 3.0 Simplifies Cushion Design for Objects

by Paul Marcon, Conservation Scientist, Preventive Conservation Services

CCI's PadCAD cushion design software has been updated to operate in the Windows environment and now solves all sides of three-dimensional packing problems simultaneously. Along with the new appearance of the PadCAD screen, context-sensitive graphics and text screens continuously inform a user throughout the design process. Additional information on any item on the PadCAD screen is readily available by pointing to it and clicking the right mouse button.

Seven standard cushion designs can be specified. Included among these are corner pads, end caps, and designs for paintings. For any of these options, designing a cushion system for all six sides of the object requires only a single pad coverage parameter. Two additional design options allow packers complete flexibility to define their own pad design. After choosing a cushion design, an initial estimate of pad coverage can be obtained for the selected pad design and object dimensions.

Cushion design solutions are displayed as a list of suitable material types and the minimum thickness requirements for each material. After choosing a selection from this list, a detailed package design summary will be displayed. This summary includes the predicted cushion performance for all sides of the object; it also specifies the total cushioning material requirements and provides a cut list for fabricating the individual pad components. Other aspects of the final package

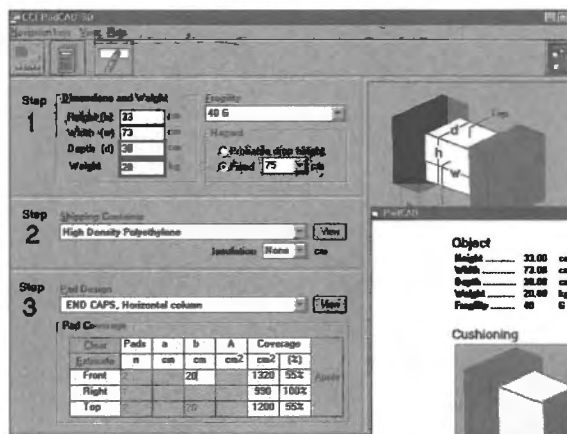
design displayed in the summary include total package weight, internal container dimensions, probable handling methods, and probable impact surfaces of the outer container.

The internal workings of the latest PadCAD release have also changed considerably. The program now automatically estimates total package weight and shipping hazards, although fixed drop height values can still be specified. The incorporation of cushioning curve data in equation form provides more flexibility in specifying the performance requirements of a package. Shock isolation levels can now be precisely specified.

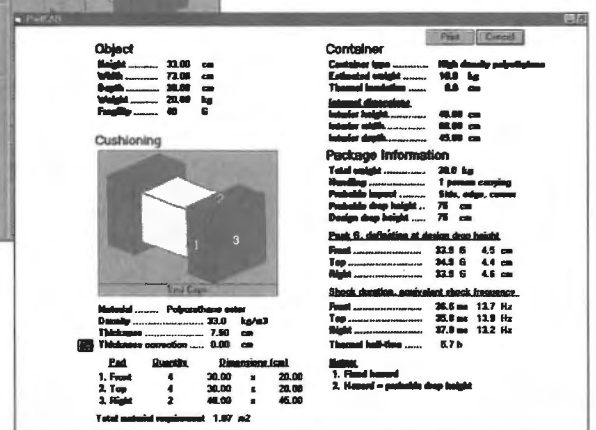
PadCAD version 3.0 will be available (in English or French) in April 1999 for \$100; upgrades from PadCAD version 2.0 for DOS will be \$60.

[Please note that prices are in Canadian dollars for orders in Canada; for all other countries prices are in American dollars.] The basic system requirements are a 386 or higher computer running Windows 3.1 or Windows 95. Additional information about the software capabilities and user requirements can be obtained from the author. Technical support for PadCAD and all aspects of protective package design is available by telephone, e-mail, or fax; seminars on the use of PadCAD and protective packaging can also be arranged. To purchase PadCAD please contact:

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Input screen.



Output screen.

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

Staying in Tune with Conservation

by Bob Barclay,
Senior Conservator, Objects

Music has been an important part of human culture throughout history. As the music and the instruments to create it have evolved over time, so too have the techniques to care for them.

When Thomas Mace published *Musick's Monument* in 1676 he wanted to ensure that those who played the instruments about which he was writing were able also to take care of them. He cautioned his readers to learn how to distinguish good repair work from bad:

And as to the Mechanical Part Thereof, I apprehend, that some will think It Superfluous, and others, a Thing too far below Them to undertake; which I grant may be for many; yet Below None to be able to know how It should be done, or when Well or Ill done; so that Thereby They may not be Gull'd, or Their Instrument Injur'd by some Ignorant, Careless or Knavish Work-man who too often Abuse both It, and the Owners; which He durst not venture to do, but that he presumes They are wholly Ignorant of His Art.

In his 'Choice Observations about keeping a Lute' he shows a quite perceptive understanding of the problems of climate:

And that you may know how to shelter your Lute, in the worst of Ill weathers, (which is moist) you shall do well, ever when you Lay it by in the day-time, to put It into a bed, that is constantly used, between the Rug and blanket but never between the Sheets, because they may be moist with Sweat, &c.

But should his readers choose this unconventional storage method, he includes a 'needful caveat':

Therefore, a Bed will secure from all These Inconveniences, and keep your Glew so Hard as Glass, and All safe and sure; only to be excepted, That no Person be so inconsiderate, as to Tumble down upon the Bed whilst the Lute is There; For I have known several Good Lutes spoil'd with such a Trick.

The Science of Conservation

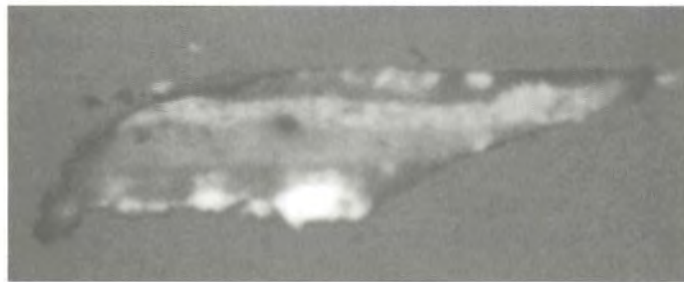
The χ File

by Marie-Claude Corbeil, Senior Conservation Scientist, Analytical Research Laboratory

A few years ago, scientists at CCI detected the presence of pararealgar in a painting from the Italian school [1]. Pararealgar is a yellow polymorph of arsenic (II) sulfide; it is a naturally occurring substance, but can also be formed by the action of light on orange-red realgar, another polymorph of arsenic (II) sulfide. Therefore, when pararealgar is found on an art object there is always a question as to whether

the artist initially used yellow pararealgar or orange-red realgar, which was subsequently transformed into pararealgar.

We recently conducted an analysis of a sculpture of Saint John (attributed to Jacques Leblond de



Cross-section of a sample from the robe of Saint John showing underlying layers of polychromy. From the bottom: a white ground layer, an orange layer which is coloured by natural red and yellow iron oxides, the orange layer containing phase χ , and finally a red layer coloured by vermillion.

Latour, ca. 1700). Using X-ray diffraction, phase χ (an intermediate product in the transformation of realgar into pararealgar) was identified in an early layer of the robe. Therefore, in this case it can be concluded that the artist originally used orange-red realgar; a light-induced transformation to pararealgar had begun but the robe was repainted with red before the reaction had gone to completion.

When Isabelle Paradis, of the Centre de conservation du Québec, was treating the sculpture of Saint John, she noticed that the phase χ layer was lifting in several places. This is

consistent with studies on the light-induced transformation of realgar by Douglass et al. [2] who noted that pararealgar (which has a greater volume than realgar) forms first as a thin layer, which then cracks and flakes off. The fact that the phase χ layer did not adhere is another indication that it originally contained realgar, which was altered by light.

Since the publication of our findings, pararealgar has been identified in art objects by several other scientists, confirming that its presence in our painting was not an isolated occurrence. The identification of phase χ

in a polychrome sculpture adds to our understanding of the use and behaviour of sulfur- and arsenic-based pigments.

1. Corbeil, M.-C., and K. Helwig. "An Occurrence of Pararealgar as an Original or Altered Artists' Pigment." *Studies in Conservation*, Vol. 40, No. 2 (May 1995), pp. 133–138.

2. Douglass, D.L., C. Shing, and G. Wang. "The Light-Induced Alteration of Realgar to Pararealgar." *American Mineralogist*, Vol. 77 (1992), pp. 1266–1274.

On Display

Revealing Dulongpré and his *Portrait of Jean Dessaulles*

by Debra Daly Hartin,
Conservator, Fine Arts

Louis Dulongpré (1754–1843), a prominent early Quebec artist, was a prolific painter who is thought to have created more than 4000 portraits in oil and pastel; but less than 200 of his works are currently known and only a fraction of these, perhaps 50, have been officially attributed to him. Study of his known paintings might reveal enough unusual aspects of his style to provide a "signature" for the artist, thereby assisting with the attribution of other works. The *Portrait of Jean Dessaulles* (circa 1825) is rare in that it had never before been treated. Though in poor condition, the examination and treatment of this painting provided a unique opportunity for conservators, conservation scientists, and materials' historians to gain new information about the original materials and techniques of this artist.

The painting was first examined and documented by various photographic, microscopic, and analytical techniques. A pigmented starch ground was found, the first of

three ground layers on the painting. Though discussed in artists' manuals of the time, a starch ground has rarely been documented on a painting. The layer was extremely cracked and friable and was the cause of extensive paint loss. Of additional interest was that cracks in this

layer were filled with the first layer of paint, indicating the ground had cracked before the artist applied the image layers.

A pigmented glaze, which had dried into an unusual string-like pattern, was present over the surface of the painting. In a few cross-sections the glaze was visible directly on the surface of the paint whereas in others it appeared to have been lifted by the varnish; the varnish flowed under and over the glaze. As there was no indication the painting had ever been cleaned or treated, we assumed that these layers were the first surface coatings applied to the painting.

The painting exhibited extensive cracking, cupping, and paint loss over its surface (a condition frequently seen in other paintings by Dulongpré), thus the major focus of treatment was the consolidation of the fragile paint and ground layers. A private conservator was hired to undertake the extremely time-consuming and delicate procedure of locally readhering the lifting and overlapping islands of paint. To preserve the original intentions of the artist, the surface coatings were not removed.



Portrait of Jean Dessaulles, after treatment. This painting was one of several from the collection of Le Centre d'Archives du Séminaire de Saint-Hyacinthe included in "Expression(s) mascoutaine(s)" (July 12 – August 31, 1998, at Expression, Centre d'exposition de Saint-Hyacinthe), one of several exhibitions held to celebrate the 250th anniversary of Saint-Hyacinthe.

Professional Development Workshop

"Adhesives for Textile and Leather Conservation: Research and Application"

May 4-7, 1999, at the Canadian Conservation Institute, Ottawa, Canada

Practical conservation techniques and science together in one workshop! Come learn about old, new, innovative, and historical adhesive treatments for backing and mounting textiles and backing skin/leather. At the same time, learn about the most recent adhesive research at CCI as it relates to textiles and leather, and the latest on CCI's textile and skin/leather research projects. This four-day workshop combines extensive hands-on sessions and demonstrations with informative interactive lectures and discussions.

Topics include:

- adhesives for support, backing, and mounting of textiles and skin/leather
- case histories and ethical concerns
- preparation and application of backings
- adhesives for mount-making (theory and applications)
- demonstrations of suction table, silicone pad making, BCIN searching
- CCI research on poly(vinyl acetate) and acrylic adhesives
- the effect of additives on a vinyl acetate/ethylene copolymer emulsion adhesive
- CCI research on skin/leather
- CCI research on textiles

Participants will be given the opportunity to explore a variety of adhesives, backing and mounting materials, and methods of applications. Each participant will take home a book of samples along with extensive information on the adhesives and materials they use during the workshop. Participants will experience the various adhesive treatments first-hand and be able to make personal decisions about their usefulness, which will be of great assistance when making future choices of adhesives for use with textiles and skin/leather in their own laboratories. The workshop will also provide a forum for the exchange of ideas and experiences among participants.

Instructors:

Michaela Keyserlingk, textile conservator
Jane Down, conservation scientist specializing in adhesives research
Janet Mason and Carole Dignard, objects conservators

Contributors:

Gregory Young, conservation scientist specializing in leather research
Season Tse, conservation scientist specializing in the degradation of silk and cellulosic materials

Participants should have practical experience in the conservation of textiles, and/or of leather and skin objects.

Registration fee (includes all lunches, materials, sample book, and handouts):

Early bird registration (prior to March 1, 1999):
CAN\$675 for Canadian participants (includes GST)
US\$525 for all others

Registration on or after March 1, 1999:
CAN\$725 for Canadian participants (includes GST)
US\$575 for all others

Enrollment is limited. (If demand is high, a second workshop may be held the following week.)

For further information and registration forms please contact:

Christine Bradley, Client Services Officer
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5 Canada
tel.: (613) 998-3721 ext. 250; fax: (613) 998-4721
e-mail: christine_bradley@pch.gc.ca

Getting to Know You

by Susanne Richter, Marketing Manager, and Mary-Lou Simac, Client Services Manager

CCI has recently had the opportunity to participate in the trade shows associated with the 1998 annual conferences of a number of organizations; and hundreds of museum and conservation professionals who attended these conferences have had the opportunity to become better acquainted with CCI. Delegates welcomed the chance to discuss CCI programs and services with personnel staffing the booth, and to see the latest CCI publications.

American Association of Museums (AAM) *Los Angeles, California, May 11-13, 1998*

Mid-May in Los Angeles was unseasonably cool and rainy, and the moisture was not limited to the outdoors. Just prior to the opening of the trade show, a system malfunction caused forty sprinkler heads to discharge unexpectedly in one corner of the hall, drenching the AAM registration desks and the floor. Fortunately, no exhibitor booths were damaged, and conference personnel did an admirable clean-up job for the slightly delayed opening. Perhaps disaster recovery resources should now be standard equipment for CCI booth staffers! This event certainly gave the approximately 5000 delegates from more than 30 different countries something to talk about, and highlighted the CCI Notes on emergency and disaster preparedness in a rather unique way. CCI looks forward to the surprises in store at next year's annual AAM conference (April 26-28, 1999, in Cleveland, Ohio).



Scott Williams demonstrates the Fourier transform infrared spectrometer at the annual meeting of the AIC.

Canadian Museums Association (CMA) and Canadian Association for the Conservation of Cultural Property (CAC) *Whitehorse, Yukon, May 30-31, 1998*

The warm welcome of the people of the Yukon, who were in a celebratory mood on the occasion of the 100th anniversary of the Gold Rush, provided a casual and relaxed atmosphere for the delegates attending the back-to-back conferences of the CAC and the CMA. The trade show launch of the database of the Centre for Exhibition Exchange (Centre d'échange d'expositions), a joint venture of the CMA and CCI, was a highlight. Advance sales for

Mount-making for Museum Objects, a co-publishing project of CCI and the Centre de Conservation du Québec, were brisk. Exhibit Transportation Services was, as always, in attendance to remind Canadian museums of its cross-country services. More than 600 delegates are expected to attend next year's CMA conference (April 28 - May 2, 1999, in Toronto, Ontario).

American Institute for Conservation of Historic and Artistic Works (AIC) *Arlington, Virginia, June 4-6, 1998*

More than 1145 delegates from 20 different countries attended the 26th annual meeting of the AIC, which featured 4 days of workshops and sessions around the theme of disaster preparedness. While CCI Conservation Scientist R. Scott Williams dazzled onlookers with demonstrations of how the Fourier transform infrared spectrometer can be used to analyse various materials from museum collections (pictured above), delegates lined up to order publications. CCI publications staff were busy filling orders worldwide during the week following the conference. Next year's conference (June 7-12, 1999, in St. Louis, Missouri) promises to be another dynamic event, with more than 1000 conservators and professionals in attendance.

Upcoming Workshops

Responding to expressed needs, the Institute offers learning opportunities related to the care and conservation of collections in collaboration with Canadian heritage associations and organizations.

CCI is pleased to provide the following workshops in various locations across Canada during the period November 1998 – March 1999. Please contact the co-sponsoring organization to confirm dates and obtain registration information. Also, don't hesitate to ask your association to inquire about arranging other workshops or seminars as there are many to choose from and customization of learning experiences is CCI's specialty.

Emergency and Disaster Preparedness for Cultural Institutions

Archives Association of British Columbia

contact: Francis Mansbridge, tel. (604) 515-4676
or
Laura Miller, tel. (604) 515-4676
March 1999

Storage Planning for Mixed Collections

Association of Manitoba Museums

contact: Wendy Molnar, tel. (204) 947-1782
January 15 & 16, 1999
Brandon, Manitoba

Preservation of Magnetic and Electronic Records

Association of Newfoundland and Labrador Archives

contact: Jessie Chisholm, tel. (709) 726-2867



New Training and Development Officer

Sonya Milly has recently joined the staff of CCI as Training and Development Officer. Sonya, who not long ago completed studies in management at McGill University in Montreal, previously held a position in Human Resources and Training for a mid-sized private-sector corporation where she was responsible for designing and implementing staff training and program development. Earlier, she studied Adult Education with the Ministry of Advanced Education, Training and Technology, British Columbia, and taught at Vancouver Community College for five years.

Plan para la Preservación de Colecciones is Launched

The CCI poster *Framework for the Preservation of Museum Collections* is now available in a Spanish/English version. *Plan para la Preservación de Colecciones* is a collaborative project with the Library of Congress and the Association for the Conservation of the Cultural Patrimony of the Americas (APOYO), along with corporate support from YUPO Corporation (who provided the special synthetic paper) and Reese Press Inc. (who donated the printing).

The poster will be distributed free of charge to more than 3000 heritage and cultural institutions and individuals in Latin America and the Caribbean. This distribution is made possible through the Centro Nacional de Conservación de Papel, National Library of Venezuela, the International Federation of Library Association and Institutions, and ICCROM.

The chart is presented in an easy-to-use matrix format, outlining various methods that can be used to avoid or control potential deterioration of museum objects. Nine agents of deterioration are presented, as well as three different levels at which the agents can be controlled. It also offers procedures and actions that can be taken by staff.

Printed on YUPO paper, the poster measures 66 by 92 cm (26 by 36.25 in.), and is UV-, water-, and oil-resistant. It can be purchased from CCI for \$25.00 plus postage and handling. To order, please contact Publications Sales at:
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5 Canada
tel: (613) 998-3721 ext. 250; fax: (613) 998-4721
e-mail: cci-icc_publications@pch.gc.ca

Internships

CCI is pleased to host internships for the following individuals during 1998–1999:

Curriculum Internships

Cécile de Boulard from France. A student in the M.S.T. program, Université de Paris I, Panthéon Sorbonne. September 14 – December 18, 1998, in the Treatment and Development Division (Fine Arts lab with Debra Daly Hartin and Helen McKay).

Ewa Björdell from Sweden. A student at the Institute of Conservation, Göteborg University, Sweden. September 21, 1998 – January 29, 1999 in the Conservation Processes and Materials Research Division with Leslie Carlyle.

Professional Development Internships

Barbara Keyser from Canada. A professor in the Master of Art Conservation program at Queen's University. July 6–17, 1998, in the Treatment and Development Division (July 6–10 in the Paper lab with Sherry Guild and July 13–17 in the Textiles lab with Jan Vuori).

Ulla Zenz from Vienna. A graduate of the Academy of Fine Arts, Vienna. October 6, 1998 – October 1999 in the Treatment and Development Division (Objects lab with Janet Mason).

Irene Civil from Spain. A graduate of Barcelona University in Conservation-Restoration. April 1 – September 30, 1998, in the Treatment and Development Division (Fine Arts lab with Helen McKay).

Science and Technology Internship

Yanick Rainville. A Young Canada Works Intern. July 6 – December 18, 1998, in the Analytical Research Laboratory Division with Marie-Claude Corbeil.



New Publications Catalogue!

The new 1999 publications catalogue is now available. With a redesigned layout and descriptive summaries, the full-colour format is eye-catching and easy to read. The catalogue contains listings for more than 130 publications and special products, including the new books *Mount-making for Museum Objects* and *The Care of Historic Musical Instrument Collections*.

A new price structure, effective January 1, 1999, has been introduced in this catalogue. Two prices are quoted for each item: one in Canadian dollars for orders shipped within Canada, and one in American dollars for foreign orders. This will facilitate payment for a significant number of foreign customers. With the exception of a few *Technical Bulletins*, prices are unchanged. Bulk discounts are available for large orders and for distributors.

For more details or copies of the catalogue, please contact Publications Sales at:
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5 Canada
tel: (613) 998-3721 ext. 250; fax: (613) 998-4721
e-mail: cci-icc_publications@pch.gc.ca

It will soon be possible to order all items in the catalogue directly from the CCI Web site (<http://www.pch.gc.ca/cci-icc>). As part of the first major overhaul of this site, a secure electronic order form is being developed. Watch for this and many other features when the revamped site is released in early 1999.

CCI Services: Seminars, Lectures, Workshops, and Visits

In co-operation with provincial museum and art gallery associations, CCI responds to specific needs within the museum community by offering workshops, seminars, and lectures 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.

March

Bob Barclay gave a talk "Restoration of a Mercury Barometer" at the annual general meeting of the Literary and Historical Society of Quebec in Quebec City.

Bob Barclay and **Tom Stone** attended a one-week meeting of PREMA at the Institute of Archaeology in London, England, to redesign course offerings for the future.

Marie-Claude Corbeil was invited by the Chemical Institute of Canada to give a presentation "La chimie au service de l'art" to the Chemistry Department of Laval University in Quebec.

Tara Grant and **Judy Logan** presented a series of lectures on the conservation of archaeological material to students in the Art Conservation Program at Buffalo State College, NY.

George Prytulak travelled to Kitchener, ON, to advise on the outdoor display of industrial artifacts throughout the city.

David Grattan presented a paper "From '91 to 42—Questions of Conservation for Modern Materials" (co-authored by **R. Scott Williams**) at the conference "Mortality Immortality—The Legacy of 20th Century Art" hosted by the Getty Conservation Institute at the Getty Centre in Los Angeles, CA.

Janet Wagner gave a lecture on textile conservation at the first annual Stitchery Studio Seminar in Merrickville, ON.

Brian Laurie-Beaumont provided functional design guidance to the Assiniboine Pavillion Art Gallery project in Winnipeg, MB; he also visited Parkwood House in Oshawa, ON, to review facility developments needs; this was followed by site assessment visits in April by **Siegfried Rempel**, covering environmental control and collection preservation issues, and **Bob Marchand**, of the Museum of Nature, reviewing security concerns.

Tom Strang presented a lecture "Integrated Pest Management in Collections" to students in the Master of Art Conservation program, Queen's University, Kingston, ON.

Jean Tétreault presented a seminar on materials for exhibit, storage, and transport for the students of the specialized graduate program in preventive conservation at the University of Paris I, Panthéon Sorbonne; he gave a similar seminar to members of the Office de coopération et d'information muséographiques, and to members of the Association professionnelle de conservateurs-restaurateurs d'œuvres d'art in Brussels.

Gregory Young presented a lecture "Analysis of the *Royal Proclamation Charter of the Company of Adventurers*, 2 May 1670" at a meeting of the Toronto Area Conservation Group as part of a three-part presentation of the Study, Analysis and Preservation of the Charter, with **Kenneth Lockwood**, President of Dorset Conservation, Inc., Toronto, ON, and Professor **Thea Burns**, Master of Art Conservation program, Queen's University, Kingston, ON.



The Royal Proclamation Charter of the Hudson Bay Company.

CCI Seminars

"Care of Textiles"

Jan Vuori and **Renée Dancause** at The Museum for Textiles in Toronto, ON.

"Mount-making for Museum Objects"

Bob Barclay, at the Centre de conservation du Québec.

April

Paul Bégin and **Joe Iraci** gave a joint presentation "Theory Guides, Experiment Decides: Working with Klaus" at the ICOM-CC Interim Meeting for the Graphic and Photographic Documents working groups in Ludwigsburg, Germany.

Leslie Carlyle presented a paper "Varnishing Practices in 19th Century Britain" at the Varnish Symposium of the National Gallery of Art, Washington, DC.

David Hanington gave a presentation on the treatment of the "Guard Book of Naval Manuscripts" for the Royal Military College, Kingston, ON.

Judy Logan gave a public lecture for the Center for Archaeological Investigations, Southern Illinois University, Carbondale; she presented a paper (co-authored by several staff) "Retrieving Organic Material from Archaeological Contexts" at a conference "Fleeting Identities: Perishable Material Culture in Archaeological Research" organized by the university; and she gave a presentation to the Ottawa-Hull Chapter of the Archaeological Institute of America.

Paul Marcon visited the Leonard & Bina Ellen Art Gallery of Concordia University in Montreal, QC, to examine their air conditioning equipment and make recommendations concerning its installation and performance.

Siegfried Rempel visited the Macdonald Stewart Foundation heritage building in Montreal, QC, to meet with architects to discuss conservation requirements in the context of planned renovations to the building; he also visited the Toronto Aerospace Museum in Downsview, ON, to advise on upgrading requirements for environmental control and collection preservation issues, along with Bob Marchand of the Museum of Nature who gave advice on security requirements.

Jane Sirois and **Ian Wainwright** visited the Redpath Museum, McGill University, Montreal, QC, to analyse selected ornithology specimens in their natural history collection for arsenic and mercury contamination.

Tom Strang gave two presentations on erosion and impact studies, site mapping, and artifact preservation techniques applied to the fossil forest on Axel Heiberg, Canada, at the International Conference on the Fossil Forest of Dunarobba, Italy.

Michael Harrington, **Paul Heinrichs** and **James Bourdeau** worked on a team for the Heritage Conservation Program of the Department of Public Works and Government Services to provide "D-class" cost estimates for the conservation of the interiors of the Centre Block of Parliament Hill in Ottawa, which should result in approximately \$25 million of new conservation work for the professional conservation community; as part of the same program, **Sherry Guild**, **David Hanington**, and **Paul Heinrichs** developed a project and supervised the humidification and flattening of 4238 blueprints of the Centre Block by private-sector conservators.



Private-sector conservators treat blueprints of the Centre Block.

Jan Vuori and **Season Tse** presented a paper "Wet Cleaning an Oversized Historic Silk Hanging: A Unique Example of the Conservation Approach" at the 84th scientific session of the Institute of Textile Science in Mississauga, ON; the next day **Season Tse** visited the textile and paper conservation laboratories and storage areas of the Royal Ontario Museum in Toronto.

Gregory Young visited the Integrated Manufacturing Technologies Institute (IMTI) in London, ON, to discuss laser cleaning of cultural materials, the potential for collaboration, and to arrange for testing at IMTI of sample material using several types of laser.

At the 1998 Art Conservation Student Conference at Queen's University, Kingston, ON: **Leslie Carlyle** presented a paper "Flying Blind: Finding our Way through the Dark" and **Kate Helwig** presented a paper "Characterization of the Iron Oxide Pigments Using Physical and Chemical Analysis".

At the annual conference of the Canadian Association for Conservation (CAC) in Whitehorse, YK: **Charlie Costain** presented a paper "Wait a Minute! CCI Did NOT Say that Relative Humidity No Longer Matters!!"; **Tom Stone** presented a paper "Artifacts Revisited" and a paper on CCI's Aboriginal Issues Project during the CAC workshop "Critical Issues in the Conservation of Ethnographic Materials"; **Jean Tétréault** presented a paper on commercial coatings entitled "Repaint, Repaint and Thin No More!"; and **Scott Williams** chaired a technical session and presented a paper "On-site, In Situ Infrared Spectroscopic Analysis of Museum Objects

Using a Portable Infrared Spectrometer at Museums Across the Country" (he also demonstrated the instrument at the Poster Sessions of the CAC conference and at the Trade Shows of the annual meetings of the Canadian Museums Association in Whitehorse and the American Institute for Conservation in Arlington, VA).

David Tremain, **Paul Bégin**, and **Joe Iraci** visited the Chambre de Commerce de Maniwaki and the Municipalité Egan-Sud to examine a collection of books, documents, and photographs.

Season Tse gave a lecture "Water Quality for Treatment of Paper and Textiles" at the National Archives of Canada, Ottawa, ON.

Lyndsie Selwyn displayed a poster and presented a lecture "Active Corrosion on Archaeological Iron" on behalf of co-authors **Jane Sirois** and **Vasilike Argyropoulos** at "Metal 98", the ICOM-CC Metal Working Group conference in Draguignan, France.

Deborah Stewart visited the Kings County Historical Society Museum in Hampton, NB, to provide museum staff with advice on their collections.

Judy Logan and **Charlie Costain**, along with **Jennifer Hamilton** (Parks Canada) and **Valerie Thorp** (Royal British Columbia Museum), organized and presented a pre-conference workshop on preventive conservation for archaeological collections at the Canadian Archaeological Association meeting in Victoria, BC.

Nancy Binnie worked with staff from Parks Canada's Underwater Archaeological Services in the development of an in situ monitoring program for the remains of an underwater prehistoric fishing weir located at Atherley Narrows (Mnjikaning) near Orillia, ON.

Kate Helwig presented a paper "Infrared Analysis at the Canadian Conservation Institute: Infrared Spectroscopy, Microspectroscopy and Non-destructive Reflectance Spectroscopy" (co-authored with **Elizabeth Moffatt**, **Scott Williams**, and **Gregory Young**) at the Third International Infrared Users' Group Meeting in Winterthur, DE.

Tom Strang gave a presentation "12 Milliseconds Flat" on principles and solutions for packaging sensitive objects so that they survive the risks of transit (co-authored by **Paul Marcon**) at the annual conference of the Society for the Preservation of Natural History Collections, in Edmonton, AB.

CCI Seminars

"Cleaning with Caution: Conservation Housekeeping and Preventive Maintenance in Heritage Interiors"
Jan Vuori and **Janet Mason**
at Upper Canada Village, ON.

"Opening and Closing a Seasonal Museum"
Deborah Stewart at the John Fisher Memorial Museum, Kingston Peninsula, NB.

June

Debra Daly Hartin visited Le Centre d'Archives du Séminaire de Saint-Hyacinthe to examine a painting by **Louis Dulongpré** as part of the technical study and treatment of three **Dulongpré** paintings in the Fine Arts laboratory; she also briefly examined **Dulongpré** paintings at the National Gallery of Canada and the National Archives of Canada in Ottawa.

Marie-Claude Corbeil and **Kate Kelwig** spent several days at the Musée du Québec and the Montreal Museum of Fine Arts taking samples from the paintings of **Jean Dallaire**; several other works by **Dallaire** from the collection of the Musée d'art contemporain de Montréal were also sampled in August.

Jean Tétréault presented a paper "Museum Standard Levels for Indoor Pollutants" during the meeting "Indoor Air Pollution: Detection and Mitigation of Carbonyls" held at the University of Strathclyde, Glasgow, Scotland.

Stefan Michalski presented a paper "Conservation of Museum Collections, A Systematic Approach" at the conference "Historical Heritage and the 21st Century. Its Conservation and Management in the New Millennium" sponsored by Ayuntamiento de Zamora and Caja Duero, organized by Gabinete de Estudios e Ingeniería in Zamora, Spain; he also presented two days of lectures on current issues in relative humidity, temperature, and lighting to professional conservators, and two days of lectures to students and staff at Escola Superior de Conservação et Restauro, Instituto Português de Museus, in Lisbon, Portugal.

Brian Laurie-Beaumont, together with **Marc Gaudet**, an engineer with Taylor Gaudet Partnership, made a site visit to the DesBrisay Museum and Exhibition Centre in Bridgewater, NS, to assess facility upgrading needs and potential operating cost savings.

At the 26th annual meeting of the American Institute for Conservation (AIC) in Arlington, VA: **David Tremain** presented a paper "Cultural Emergencies: The Canadian Response" and

Paul Bégin presented a paper "Canadian Co-operative Permanent Paper Research Project: The Impact of Lignin on Paper Permanence" (a Certificate of Recognition for Excellence in Scientific/Technical Research was awarded to the group involved in this research: **Paul Bégin**, **Joe Iraci**, **David Grattan**, **Elzbieta Kaminska**, and **Donna Woods** of CCI, and **X. Zou**, **N. Gurnagul**, and **S. Deschatelets** of the Pulp and Paper Research Institute of Canada).



Nancy Binnie examines zebra mussels on an underwater fishing weir stake at Atherley Narrows, ON.

At the conference *Fernis, Material Ästhetik Geschichte* (Varnish: Material -Aesthetics -History) sponsored by the Arbeitsgemeinschaft der Restauratoren, Braunschweig, Germany: **Leslie Carlyle** presented a paper "Traditional Painting Varnishes Project: Preliminary Report on Natural and Artificial Aging and the Preparation of Cross-Sections" (co-authored by Nancy Binnie, Gisella van der Doelen and Jaap Boon from MolArt, and Bonnie McLean and Ann Ruggles from the National Gallery of Canada) and **James Bourdeau** acted as session chair and represented North American conservators on a panel discussion; prior to the conference he presented a seminar and workshop "Contemporary Varnishes, Materials and Techniques" at the Herzog Anton Ulrich-Museum in Braunschweig, to a group of conservators from various institutions and from private practice in Germany.

Bob Barclay gave a series of lectures on the treatment of ethnographic wooden objects for the International Course on Wood Conservation Technology in Oslo, Norway.

Sherry Guild, David Hanington, and Tom Strang carried out a collection survey for the Library of Parliament, Ottawa.

George Prytulak and Paul Heinrichs examined the brass doors of the Confederation Building in the Parliamentary Precinct in Ottawa.

July

James Bourdeau visited the conservation training program at the Fachhochschule in Cologne, Germany, to meet with the professors and deliver samples of Tyndall limestone from the interior of the Parliament Buildings in Ottawa for a research project on oxide removal conducted by one of the graduating students.

David Hanington visited the Conne River Micmac Band, Conne River Bay Despoir, NF, to discuss with the band and elders the treatment options for a rare hieroglyphic Micmac prayer book; he also made site visits to several departments at Memorial University, Queen Elizabeth II Library, Maritime History Archive, Folklore and Language Archive, Centre for Newfoundland Studies, and the Preservation Unit of the library.

Michael Harrington and Paul Heinrichs developed projects and supervised on-site work in conjunction with the private sector in the Speaker's Dining Room and the Prime Minister's office on Parliament Hill in Ottawa.

August

At the 44th International Conference on Analytical Sciences and Spectroscopy at Queen's University, Kingston, ON: **Kate Helwig** presented a paper "The Iron Oxide Pigments: From Red Earth to Mars Colours" and **Gregory Young** presented a paper "The Use of Differential Scanning Calorimetry and FTIR Microspectroscopy to Measure Deterioration and Treatment Effects in Museum Artifacts Composed of Skin, Hide and Similar Materials".

Sherry Guild and David Hanington carried out a collection survey for the City of Ottawa Archives.

Michael Harrington and Paul Heinrichs worked with private-sector conservators and contractors on a prototype project for the restoration of the historic brass window frames of the Bank of Montreal building located at the corner of Sparks and O'Connor in Ottawa.

Kate Helwig co-authored a paper "Siqueiros' Pyroxylines: Identification, Degradation and Similarities to Other of his Painting Techniques" (with principal author Celina Contreras Maya, Alison Murray, and Barbara Keyser) which was presented by Celina Contreras Maya at the National Meeting of the American Chemical Society in Boston, MA.

Stefan Michalski presented a paper "Status of the DHH-CCI Preventive Conservation Survey and its Database" at the annual meeting of the Organization of Military Museums of Canada, held at CFB 17 Wing, Winnipeg, MB.

George Prytulak examined three outdoor artifacts (a 1930s steam locomotive, an Avro CF-100 jet aircraft, and a commemorative stone cairn and plaque) for the City of North Bay, ON.

Season Tse visited the Textile Conservation Center and American Textile History Museum, Lowell, MA; she also presented a paper "Measuring Silk Deterioration: Investigation into the Usefulness of High Performance Size Exclusion Chromatography, Viscosity and Electrophoresis" at the 216th national meeting of the American Chemical Society "Historic Textiles and Paper Materials Symposium".



Sherry Guild and David Hanington carry out a collection survey of the Library of Parliament in Ottawa.

CCI Seminars

"Care of Industrial Collections"
George Prytulak and **Lyndsie Selwyn** at the Prince of Wales Northern Heritage Centre, Yellowknife, NT.

September

At the 17th international congress of the International Institute for Conservation (IIC) "Painting Techniques: History, Materials and Studio Practice" in Dublin, Ireland: **Leslie Carlyle** acted as session chair and contributed as one of the authors to a paper "Nineteenth-century Paint Media: The Formulation and Properties of Megilps" and **Kate Helwig** presented a poster "Mars Colours: Preparation Methods and Chemical Composition".

James Bourdeau presented a lecture on the conservation approach to maintenance and housekeeping for the Federal Heritage Buildings Review Office to managers and staff on Parliament Hill in Ottawa.

James Bourdeau, **Debra Daly Hartin**, and **Helen McKay** began work on a survey of the artwork (including more than 150 paintings, sculptures, and carved reliefs, most of which date from the late 19th century) in Notre-Dame Basilica in Ottawa.



James Bourdeau carries out a condition survey of the interior of Notre-Dame Basilica in Ottawa.

Tom Stone travelled to Alberta where he undertook a collection survey for the Native Cultural Arts Museum in Grouard, visited museums in Peace River and Lac La Biche, and met with the Provincial Conservation Advisor in Edmonton.



Part of the collection that Tom Stone surveyed for the Native Cultural Arts Museum in Grouard.

Marie-Claude Corbeil presented a paper "L'analyse de tableaux canadiens attribués au frère Luc" (prepared in collaboration with **Elizabeth Moffatt**) at "Art et Chimie - La couleur", an international conference on the contribution of chemistry to works of art, held in Paris.

Stefan Michalski gave lectures (along with **Cecily Grzywacz** from the Getty Conservation Institute and **Jim Reilly** from the Image Permanence Institute) on lighting and on mechanical issues in relative humidity at a two-day seminar "The Museum Environment", organized by the Upper Midwest Conservation Association, in St. Paul, MN.

George Prytulak examined a naval gun from the WWII frigate *HMCS Buckingham* displayed outdoors in Buckingham, QC; he also made several consultative trips within Saskatchewan, where he examined the doors of the Land Titles Building in Regina, the firebrick factory in Claybank, and the town bell in Moose Jaw.

Tom Strang delivered the keynote address to the 3rd Nordic Symposium on Insect Pest Control in Museums held at the Swedish Museum of Natural History in Stockholm; he also conducted the associated workshop section on thermal control methods.

Renée Dancause gave a talk "Conservation Treatment of a Canadian Militia Tunic" at the Brockville Museum, Brockville, ON.

CCI Seminars

"Care of Industrial Collections"
George Prytulak and **Lyndsie Selwyn** at the Pioneer Acres of Alberta Museum in Irricana, AB.

October

Brian Laurie-Beaumont facilitated a planning meeting of museums and art galleries in the Halton and Peel regions of Ontario, who are looking to create a shared storage facility.

George Prytulak travelled to the Markham Museum and Historic Village in Markham, ON, to examine the 1920s railway business car "Acadia".

Tom Stone was a co-instructor on a two-week course on deterioration of collections for ICCROM/PREMA at the Fort Jesus Museum in Mombasa, Kenya.

Malcolm Bilz presented a paper "Treating Waterlogged Basketry: A Study of Polyethylene Glycol Penetration into the Inner Bark of Western Red Cedar" (co-authored with **Tara Grant** and **Gregory Young**) at the ICOM-WOAM (Wet Organic Archaeological Materials) conference in Grenoble, France.

Bob Barclay presented "Mounting and Transport of Museum Objects", at the PREMA International Course in Conservation, Cape Coast, Ghana.

David Hanington presented a two-day workshop "Protective Enclosures and Boxmaking" to students in the Collections Conservation and Management program, Sir Sandford Fleming College, Peterborough, ON.

Marie-Claude Corbeil co-authored a paper (with Stephen A. Kissin, Peter Whitridge, and James W. Helmer) on the source of meteoritic iron in artifacts from the Canadian Arctic;

the paper was presented by Stephen A. Kissin at the annual meeting of the Geological Society of America in Toronto, ON.

David Grattan presented a lecture "Conservation and Exhibition Exchange—Roles and Responsibilities" (co-authored by Charlie Costain and Stefan Michalski) at the International Committee for Exhibition Exchange

session, International Council of Museums Meeting, Melbourne, Australia.

CCI Seminars

"Emergency and Disaster Preparedness for Museums" Deborah Stewart and David Tremain, at Doon Heritage Crossroads, Kitchener, ON.

Symposium 2000 - The Conservation of Heritage Interiors

The Canadian Conservation Institute, Ottawa, Canada - May 17-20, 2000

Call for Abstracts

You are invited to submit an abstract for Symposium 2000 - The Conservation of Heritage Interiors. This symposium, hosted by the Canadian Conservation Institute of the Department of Canadian Heritage, will be held on May 17-20, 2000, in Ottawa, Canada.

The interior of an historic building is a meeting place for the preservation architect and the conservator. CCI's Symposium 2000 will emphasize the kinds of professional collaboration required to plan and execute successful conservation projects in historic interior spaces. This three-day international symposium will offer a chance to share information about innovative recording and treatment practices, current professional practices, and recent advances in the material sciences that will benefit those who are responsible for the preservation and rehabilitation of heritage interiors. Participation is encouraged from professional conservators, preservation architects, conservation scientists, craft and trades people, engineers, technicians, and designers in heritage preservation.

Program

The program will include subject matter focussing on architectural interiors and the materials that compose them, both moveable and fixed.

Papers should be of 30-minute duration (including time for introduction and questions) and will be published as preprints. The official languages of the symposium will be English and French. Simultaneous translation will be provided.

Call for Posters

In addition to formal presentations, submissions for a poster session are also welcome.

Call for Demonstrations and Videos

Submissions for demonstrations and videos are also encouraged. The length of time for demonstrations is flexible, but should be no longer than 1 hour.

Edited abstracts of posters, demonstrations, and videos will also be published in the preprints and should be furnished by the presenter following the overall timetable and deadlines.

Abstracts (300-400 words) for formal presentations, poster sessions, demonstrations, and videos should be submitted by **March 12, 1999**. Edited abstracts will be published in both languages. All submissions will be reviewed by the External Advisory Committee who will make the selection of papers, posters, demonstrations, and videos.

Authors will be notified of acceptance by **May 31, 1999**, and will be sent a guideline for text, poster, demonstration, or video. Final texts of papers for the preprints will be required by **August 30, 1999**.

All submissions should consist of the speaker's name, address, Internet or e-mail address, telephone and fax numbers, a short one-paragraph biography, the title of the submission, and an abstract (300-400 words).

Please send your submission to:

Symposium 2000
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5
Canada
tel: (613) 998-3721
fax: (613) 998-4721
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