



A New Canadian Standard for Permanent Paper

by David Grattan, Manager, Conservation Processes and Materials Research

The speaker was in earnest... the atmosphere tense... and those surrounding the table fatigued. They had been at it for many hours in this, the culminating meeting of the Canadian General Standards Board Sub-Committee on the Permanency of Paper. At last there was agreement. In a historic moment, the eleventh draft of the proposed Canadian Standard for Permanent Paper was on the table. The end product of several years of scientific research, study, and discussion was now in black-and-white. But what now... what would be the outcome?

Initially, the aim of the research project had been to examine the role of lignin in determining the permanence of paper; it was sponsored by a group of Canadian pulp producers and various government agencies, and undertaken jointly by CCI and the Pulp and Paper Research Institute of Canada. CCI's principal responsibilities in the project were to age the

test papers and analyse their degradation using the Cadoxen DP method. The study looked at a number of modern papers containing a wide range of fibre types, and was the largest and most comprehensive of its type undertaken to date. The results have now been released in report format and are also published in *Restaurator*.^{1,2} The conclusion is that the fibre composition of paper is of minimal consequence to its permanence as long as the paper is buffered with at least 2% calcium carbonate. This result is scientifically very significant in that it allows paper containing lignin to be included in those classed as 'permanent'.

Much of the groundwork for the study was laid by two former employees of CCI: the late Dr. Klaus Hendriks, who established what

Paper samples are artificially aged in a controlled temperature and humidity chamber.



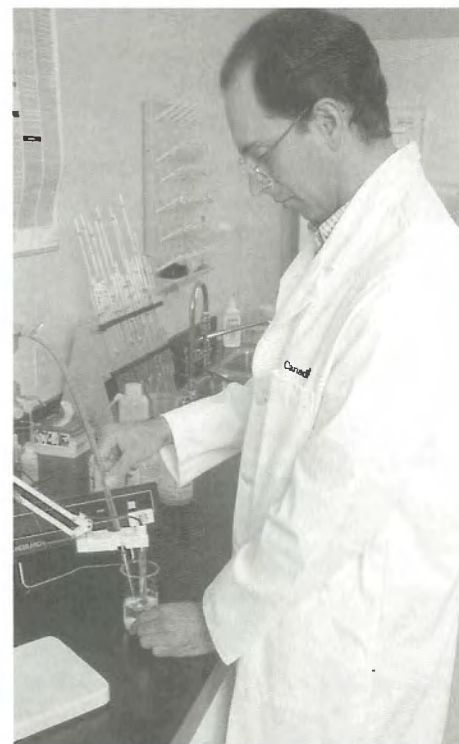
must be one of the world's best-equipped laboratories for studying the aging of paper (in CCI's Tunney's Pasture facility in Ottawa); and the late Ms. Helen Burgess, well known for her studies on conservation bleaching and mass deacidification of paper, who introduced the Cadoxen DP method for measuring the degradation of paper.

The new standard is not only the first to accept that lignin-containing paper could be 'permanent', but also the first to broach the difficult issue of 'optical permanence'. In some instances a small change in colour can be acceptable (nobody really minds if the paper in a report or a paperback book becomes a little yellow, as long

as the informational value and the ability to reproduce it are unaffected). However, in other situations the yellowing of paper will compromise its value. In such cases, the recommendation continues to be that only lignin-free paper be used.

It remains to be seen whether or not the new standard will be adopted (the final vote has yet to be taken). However, if accepted it is likely to have a profound impact on the permanency of library and archival collections. The new standard would broaden the range of papers that can be designated as 'permanent' which, in turn, would probably make permanent paper cheaper and more accessible — and hence more likely to be widely adopted for publications.

And this is a good thing!



A cold extraction test is used to measure the pH of paper.

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1. Bégin, P., S. Deschatelets, D. Grattan, N. Gurnagul, J. Iraci, E. Kaminska, D. Woods, and X. Zou. "The Impact of Lignin on Paper Permanence — A Comprehensive Study on the Ageing Behaviour of Handsheets and Commercial Paper Samples." *Restaurator* 19 (1998), pp. 135–154.
2. Bégin, P., S. Deschatelets, D. Grattan, N. Gurnagul, J. Iraci, E. Kaminska, D. Woods, and X. Zou. "The Effect of Air Pollutants on Paper Stability." *Restaurator* 20 (1999), pp. 1–22.



Many types of paper can be tested.

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Setting Standards for Conservation: New Temperature and Relative Humidity Guidelines Are Now Published

by Stefan Michalski, Manager, Preventive Conservation Services

The lack of universally accepted standards for environmental parameters has been a problem in conservation for many years. It has been a common occurrence for engineers to arrive at a museum planning meeting with one set of guidelines, only to meet with museum staff who have a completely different benchmark in mind. This results in lost time, confusion, and frustration for everyone involved! A set of mutually agreed upon standards could not only simplify the planning process, but ultimately offer better protection to our precious collections as well.

In 1995, I was invited to participate on a technical committee¹ that would write a new chapter (focussing specifically on museums, libraries, and archives) for the handbook of the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). A great deal of debate had just taken place in the conservation profession on the implications of current research for such environmental guidelines, so it was a good time to capture a consensus and place it in this crucial handbook (which is a 'bible' to all Canadian and American mechanical engineers). The ASHRAE handbooks are revised on a three-year cycle, and our committee agreed to have the chapter ready for the 1999 edition. At CCI we were happy to centre our efforts on this collaborative project, rather than a revision of our old Technical Bulletin on the subject.

I was the lead author on the sections concerning 'why guidelines are necessary' and the target specifications for temperature and relative humidity (RH). To address the issue of permissible fluctuations for mixed collections, we adopted a range of acceptable levels (AA, A, B, C, D)

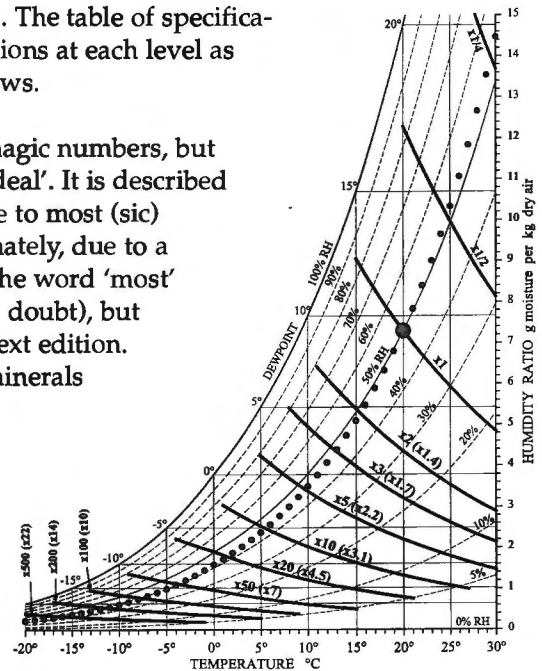
to replace the old magic numbers. The table of specifications describes the risks to collections at each level as clearly as present knowledge allows.

Level AA² is essentially the old magic numbers, but it is no longer presented as the 'ideal'. It is described as "No risk of mechanical damage to most (sic) artifacts and paintings." Unfortunately, due to a typographical error on my part, the word 'most' crept in (subconscious caution no doubt), but it will have to be deleted in the next edition. Furthermore "Some metals and minerals may degrade if 50%RH exceeds a critical RH."

Level A³ fluctuation control is described as "Small risk of mechanical damage to high vulnerability artifacts, no mechanical risk to most artifacts, paintings, photographs, and books."

The distinction between level AA and A is an attempt to capture a common consent in the field. Although researchers and practitioners argue over the details, it seems fair to say that popular opinion supports level A as a general optimum, while at the same time recognizing that level AA offers a small but plausible decrease in risk to some collections.

Level B is similar to A, but permits unlimited winter setback in temperature, as needed by seasonal museums. Level C simply limits conditions to within 25–75%RH year round, with temperature not to exceed 30°C in summer. Most historic houses will do well to reach this. Level D stipulates only that humidity not exceed 75%RH, while still noting dampness as one of the most important conditions to avoid in a collection.



An example of one of the figures I developed for the ASHRAE chapter. This is a set of "isoperms" (lines of constant lifetime) for archival materials that deteriorate rapidly by acid hydrolysis. Instead of the usual axes of temperature and relative humidity, the isoperms have been placed on the fundamental design tool of mechanical engineers, i.e. the psychrometric chart. Also shown is a line of constant equilibrium moisture content for most paper and gelatin-based records (the heavy dotted line that deviates slightly from the 50% RH line).

For general museums, galleries, libraries, and archives, the suggested RH set point is the familiar 50%. Temperature set point is given as "between 15°C and 25°C"; however, for every class of fluctuation control based on this set point, the description of risks indicates that "Chemically unstable objects unusable within decades." Thus the reader is continually reminded of the role of cool or cold storage set points elsewhere in the table.

Another aspect of the chapter addresses various issues on 'how to achieve desirable standards'. Bill Lull

took the lead on writing this section, with assistance from Lou Kelter and Alexander Zhivov. We included short summaries on the role of display cases and humidistatic control, so that engineers would understand their role in humidity control. There is a section on building envelope issues (led by William Rose) as these invariably determine what is feasible in environmental control. We abridged Ernie Conrad's 'control potential' classification scheme⁴ for seven types of building, and suggested which level of fluctuation control is feasible for each. The chapter, therefore, provides guidance not only for large new museum projects, but also for small historic house museums and sheds.

The whole chapter has been through the revision and voting approval process of the ASHRAE organization. Thanks to the hard work of all committee members (especially our experienced and supportive chairman) and to the editors of ASHRAE (who

granted us a lot of leeway in deadlines at the final stages), the chapter is now finished! "Museums, Libraries, and Archives" is Chapter 20 in the *1999 ASHRAE Applications Handbook*.⁵ It includes recommendations for both temperature and relative humidity. Unfortunately, a well-supported section on pollution and filtration could not be prepared in time for the 1999 deadline, but this will be added for the 2002 edition.

When Lou Kelter first announced our intention to have the chapter ready for the 1999 edition at a meeting 3 years ago, the publications committee of ASHRAE burst into spontaneous applause. We hope that everyone is as satisfied with the final result.

1. In addition to myself, committee members included: Chairman S. Louis Kelter (of Kelter & Gilligo, P.C.); William P. Lull (of Garrison/Lull Inc.); and William B. Rose and

Alexander M. Zhivov (both from the University of Illinois).

2. $\pm 5\%RH$, $\pm 2^\circ C$, no seasonal RH change, up $5^\circ C$, down $5^\circ C$ seasonal possible.
3. $\pm 10\%RH$, $\pm 2^\circ C$ short-term, no seasonal RH change, up $5^\circ C$, down $10^\circ C$ possible
or
 $\pm 5\%RH$, $\pm 2^\circ C$ short-term, seasonal RH change $\pm 10\%RH$, up $5^\circ C$, down $10^\circ C$ seasonal possible.
4. Conrad, E. *A table for classification of climatic control potential in buildings*. Landmark Facilities Group, Inc., Norwalk, CT, 1995.
5. Chapter 20, "Museums, Libraries, and Archives," in *1999 ASHRAE Applications Handbook* (SI edition or I-P edition). American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie Circle, NE, Atlanta GA 30329, USA.

New Director, Information Services and Marketing

I am pleased to announce the appointment of Raymond Lafontaine as Director, Information Services and Marketing. This new directorate is responsible for marketing, information publishing and distribution, Client Services, and the library, and works closely with the operating divisions of conservators and scientists in planning and delivering services. It is a key element in CCI's overall effort to ensure that clients' needs are taken into account in business planning and service delivery, and that all available tools are utilized to make the information and knowledge produced at CCI accessible to people throughout the Canadian and international conservation community.



Ray brings a wealth of experience to this new position. His tenure at CCI has included responsibility for directing work in both the treatment and research areas, and he has a thorough understanding of the role of conservation in ensuring that Canadians continue to have access to their material cultural heritage. His knowledge and leadership will be assets to CCI's ability to serve both clients and the needs of the cultural heritage community at large.

Bill Peters

Publications Survey

CCI recently sent numerous clients a questionnaire about their publications needs. The response has been amazing! We appreciate each and every one of the more than 600 clients who took the time to reply, and would like to offer a special reward to one lucky respondent. Gaston Hervieux's name has been drawn to receive a "CCI Survival Kit" containing a tote bag, complete set of *CCI Notes* (more than 90 notes in a binder), sweatshirt, mug, pen, and pin. Congratulations Gaston!

Results of this survey are still being compiled, and we will be keeping you informed as they become available. Your feedback will help us to match our future publications to your needs and interests. Thanks to everyone who participated.

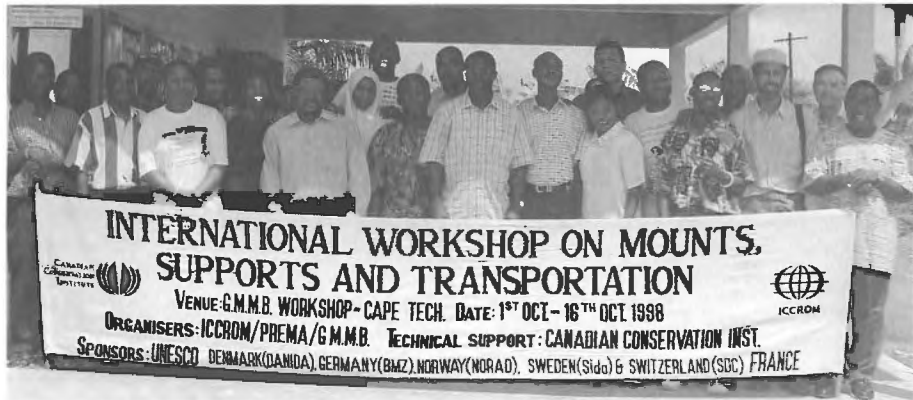
CCI Contributes to Conservation in Africa

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

The Canadian Conservation Institute (CCI) is dedicated not only to the science and practice of conservation but also to sharing expertise with others, both in Canada and internationally. One of the prime examples of CCI's international presence is our involvement with PREMA (Prevention in Museums in Africa).

PREMA is a program developed about 15 years ago by ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property) for African museums south of the Sahara. Its aim is to establish, before the year 2000, a network of African professionals capable of taking charge of the conservation of collections and the training of colleagues, thereby giving Sub-Saharan African museums the tools for long-lasting development. As part of the last phase of the program, CCI recently presented two workshops in African countries.

In September 1998 I traveled to Cape Coast, Ghana (a small town to the west of the capital city Accra). Twenty museum employees from 11 countries attended my workshop on support, mounting, and transportation of museum objects, which was hosted by the National Museums of Ghana. The following month CCI's Tom Stone journeyed to Mombasa, Kenya (on the shores of the Indian Ocean). His workshop, co-developed and co-taught with Margaret McCord (a private conservator from the United Kingdom with extensive PREMA experience), dealt with the inherent sensitivities and weaknesses of materials and construction methods of objects, and explored a new framework for characterizing their deterioration. It was hosted by the National Museums of Kenya, and was attended by 22 participants from 14 countries.



Participants in the Cape Coast course and their instructor gather behind the banner advertising their workshop.

To ensure that these workshops ran smoothly and yielded maximum information and benefit for all participants, a whole myriad of organizational concerns and details had to be addressed.

The content of both presentations was carefully chosen to be relevant to the situation in African museums, and the advice and guidance offered were specifically tailored to their needs. Likewise, the layout and didactic methods of both workshops were designed to assist the already established network of African museum personnel when delivering courses themselves in the future. In addition, the preventive conservation framework for African collections (which PREMA pioneered and refined) was adapted and reconfigured so that practical conservation of collections could be carried out effectively by locally trained personnel using locally obtained supplies (i.e. without recourse to expertise and materials from far away to the north and west). However, the overall success of these presentations depended not only on the careful consideration and preparation of workshop material, but also on efficient organization on-site so that the theoretical framework could become a practical reality.

CCI has more than 20 years experience working with the preventive conservation needs of smaller and less well endowed museums, and our conservators were well prepared to meet this challenge. The previous PREMA courses we had taught in various African countries had also provided insight into what would be practically possible, and what could be achieved in the available time. The familiarity of the African workshop coordinators with the PREMA modus operandi over the years was equally essential in ensuring that materials and supplies, together with buildings and other facilities, met the needs of the courses.

With careful preparation and hard work on the part of all those involved, both workshops were successful. They demonstrate the effectiveness of PREMA teamwork, and how much of a cooperative venture this foray into preventive conservation south of the Sahara has become. In the closing stages of PREMA, all CCI conservators who have worked with the program would like to wish their African colleagues the greatest success in the coming years, and assure those responsible for the new programs that they can continue to count on us for advice and guidance.

On the Road to Discovery: CCI Investigates New Directions for Future Research

by Charlie Costain, Director, Conservation and Scientific Services

At the May 1999 meeting of the Canadian Association for Conservation of Cultural Property (CAC) in Winnipeg, the Canadian Conservation Institute (CCI) circulated a draft document outlining our current research activities. Delegates were asked to review the document and propose (and rate) possible new topics or areas for future research. The top 10 ideas from that exercise are shown in Table 1. Although ongoing research commitments do not allow us to address all these issues immediately, direct feedback of this type is extremely important in orienting future research directions. We realize that this list is only a snapshot of the priorities of those people at the conference, but nonetheless it gives an interesting indication of some current concerns. In this article, I would like to comment briefly on CCI's potential to undertake research activities in these top-rated subject areas.

Advocacy role for CCI

Given that the request had been for potential research topics, we were surprised to see this item on the list — and rated considerably higher than any other. This indicates clearly the desire for CCI to become more involved in advocating conservation and its importance to Canadians, and to take on a stronger role in promoting the concept. We agree that raising awareness of the fundamental importance of conservation is a priority, and are currently looking at possible strategies for doing so within the government, the heritage community, and the general public.

Mould

Three of the top-ranked concerns centred around mould, requesting better information on treating mould-infected collections and handling the health risks associated with mould in collections. It is possible that this

topic was prominent in the minds of delegates because of Monona Rossols' presentations during the pre-conference workshop "Green Conservation: Environmental and Human Safety in Conservation"; but there is no doubt it is an important question for both the survival of collections and the health of those who work with contaminated artifacts.

A considerable amount of information on treating mouldy artifacts is already available, but the recent heightened awareness of possible long-term health problems resulting from such collections has raised new questions. CCI's Sherry Guild, with assistance from Tom Strang, has been working with Health Canada to study some of the treatment and safety issues related to a large federal collection. We are also collaborating in two projects responding to serious mould outbreaks in archival and library collections. By developing working solutions to the situations experienced in these projects we hope to expand our theoretical base, thus allowing us to identify where additional research is required and what expertise is needed to conduct it.

Long-term preservation of machine-readable information carriers

This type of information is necessary not only for archives and libraries, but also for many corporate collections and groups where oral history is an important part of tradition and memories. CCI has just recently begun research in this area. Joe Iraci and Stefan Michalski presented a seminar on archival preservation issues in the spring of 1999, where participants identified digitization of paper-based collections, and also data migration of electronic files, as primary concerns when dealing with their collections. Joe Iraci has

also been looking at some stability issues related to new media, and over the next year will be pursuing the issue of standards for transfer.

Protective coatings for metals

The conservator who proposed this topic was seeking information on coatings for bright metals and their successful application. This is an ongoing problem for many museums, as achieving a uniform impermeable barrier can be very difficult. Some of this information is presently covered in existing *CCI Notes*; however, if there is sufficient demand, a new publication on this topic could be produced in the future.

Cleaning, storage, and stabilization techniques for plastic artifacts

The amount of plastics in museum collections is a growing concern for conservators, and Scott Williams at CCI has been working on the problem for some time. Areas of current study include identifying which plastics are present in a given artifact or collection; determining their stability, and their mechanisms and rates of deterioration; and identifying practical methods for slowing down these processes of decay. In the future, this information may be available on the CCI Web site, or as a professional development seminar on plastics. To date, we have not specifically addressed the cleaning of plastics in collections.

Development of standards

Conservation scientists have only recently started working with widely recognized standards organizations to establish guidelines that have particular relevance to the preservation field. The advantage of having this kind of published standard is that it has immediate credibility with people working outside our profession, and its influence can extend well

beyond our normal sphere. A number of standards are currently under development, or have recently been published.

Stefan Michalski has been instrumental in preparing a new chapter "Museums, Archives, and Libraries" for the 1999 ASHRAE *Applications Handbook* (for more information, see the article on p. 3). This publication is the 'bible' for engineers working in North America, and should simplify the task of convincing engineers and architects of the specific issues that must be addressed when designing functional buildings for heritage collections. Stefan is also involved with the International Commission on Illumination (CIE) as part of a committee that is currently developing an international standard for museum lighting.

In other work at CCI, Paul Bégin, Elzbieta Kaminska, Joe Iraci, and David Grattan have been working with heritage professionals and industry scientists to develop a Canadian standard for permanent paper. Their work has resulted in the recent proposal of a new Canadian standard (see p. 1), which differs from the international standard in that it allows the presence of lignin in the paper. In addition, this group is participating in an international research program aimed at developing a new American Society for Testing of Materials (ASTM) standard for measuring the aging of paper, which is a central technique for many long-term stability studies.

Disaster recovery plans in downloadable format

In recent years we have been putting a considerable amount of effort into the development of emergency response and disaster recovery plans for heritage institutions, as have others across the country. As part of CCI's outreach programming, David Tremain and Deborah Stewart present a seminar on this topic. They have been developing a template that museums can use to design their own emergency response and disaster

recovery plans. Unfortunately, the development and successful implementation of such plans is fairly complex, and a 'fill in the blanks' approach is too simplistic to be really useful. Work is continuing in this area, however, with the goal of finding an approach that is both simple and effective for most institutions.

Characterization and permanency of paper-based computer-generated documents

As new technologies develop, new materials and products will be introduced into collections. We hope that the permanent paper initiative will ultimately result in the widespread use of a more stable substrate, but that still leaves the issue of the stability of the ink, and how well the ink is adhered to the paper. We know that the manufacturers of coloured ink-jet inks are achieving improved colour stability, but at the moment we do not know how stable the inks are, or how great a difference there is between products. Keeping abreast of the stability of these materials will be an ongoing challenge. CCI's forthcoming Technical Bulletin *The Stability of Photocopied and Laser-printed Documents and Images* by David Grattan should assist conservators in assessing the stability of some documents.

Fixation and long-term storage of fluid-preserved collections

This has been a major issue with natural history collections for many years, and the Society for the Preservation of Natural History Collections (SPNHC) has coordinated some research in this area. While a few of the more concrete aspects (for example, questions dealing with determining alcohol concentration or leakage rates from containers) have been addressed by various parties, many issues remain. At CCI, we do not currently have any projects in this area.

In conclusion, the ideas generated by the delegates at the CAC conference were extremely useful, and we greatly appreciate their input. Although it will not be possible to resolve all the conservation issues identified, this exercise has pointed out some key areas that need examining. Should you feel that there are other areas that also need attention, please send your ideas directly to me.

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Table 1.
Summary of top-rated proposals for CCI activities
as generated by delegates at the CAC conference in Winnipeg in May 1999

Rank	Idea	Point score
1	Advocacy role for CCI (communications that articulate the value and relevance of conservation)	38
2	Effectiveness of dry-cleaning techniques on mould-contaminated paper-based materials	26
3	Long-term preservation of long-term machine-readable information carriers, including standards for transfer to another support	25
4	Mould (evaluation of eradication techniques for various types of objects)	22
5	Protective coatings for metal objects (bright metal/use of graphite)	20
6	Systems for cleaning up large mould infestations (who are the experts?)	15
6	Safe cleaning, stabilization, and storage techniques for plastic artifacts	15
8	Development of standards (RH, temperature, light, permanent paper)	14
9	Disaster recovery plans for museums in a downloadable format for individual museum customization	13
10	Characterization and permanency of digital image paper and other computer-related papers (including laser-printed paper)	12
10	Fixation and long-term storage of fluid-preserved and biological collections	12

Opening the Front Door to CCI

by Mary-Lou Simac, Client Services Manager

Access to CCI services and free advice became easier in April 1998 with the establishment of the Client Services unit. Although still a one-person operation (albeit with the aid of many colleagues), this service continues to grow in popularity as more and more individuals and organizations take advantage of this new 'front door'.

Dozens of inquiries are received from the general public and the professional community every month. Questions and requests for advice can (and do) come from a wide variety of sources, and arrive via telephone, fax, e-mail, the CCI Web site, or in person. Non-technical inquiries are handled directly and immediately by Client Services. Questions that require scientific or technical advice are referred to the appropriate conservator or scientist. Each inquiry is entered into a database and followed up to ensure that the client gets a response. It is one of the ongoing challenges to ensure that nothing 'falls between the cracks'.

During the 1998-99 fiscal year, Client Services received 757 inquiries, with more than 50% of the requests during the initial 6-month developmental period coming from the general public. Queries covered such diverse topics as what to do about fungal growth on 19th-century Chinese silk panels, the preservation of WWI helmets, and the most suitable paint

to use in museum storage areas. One of the most popular questions (from millennium-conscious individuals and organizations) regarded time capsules. Not included in the above figures are the many technical inquiries our professionals receive directly from museum and conservation colleagues. [These individuals are invited to contact Client Services directly for information requests that are unrelated to their usual contact's specialty.]

A lot of information about CCI services is also available on our revamped Web site, with its soon-to-be-completed Conservation Information database. Visitors to the site who have questions or comments can reach Client Services directly by using the feedback form.

Handling and responding to inquiries is just one aspect of Client Services. Client satisfaction levels are also monitored by sending questionnaires to clients for whom CCI has completed projects. The feedback generated in this way is very useful in pinpointing areas where service improvements can be made. Another important function is contributing to the planning of CCI's participation in museum and conservation conference trade shows, which provide an opportunity for staff



Inquiries are handled promptly by CCI's new Client Services unit.

to interact directly with clients and colleagues.

In the federal public service environment, where agencies are continually being asked to tighten their belts while at the same time improving performance standards, CCI's new Client Services unit is committed to providing professional service and satisfaction to clients in a timely and efficient manner.

There are many ways to reach Client Services:

Mail (or in person):

Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5 Canada
Tel: (613) 998-3721

Fax: (613) 998-4721

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

Web site: <http://www.cci-icc.gc.ca>



DM and ADM Visit CCI

Alex Himelfarb, Deputy Minister of the Department of Canadian Heritage (*second from right*), and Eileen Sarkar, Assistant Deputy Minister of the Arts and Heritage sector (*right*), visited CCI in September. A discussion of CCI's business plan with Director General Bill Peters and his management team was followed by a brief tour of the building. They are shown here with Michael Harrington, Manager, Treatment and Development Division (*centre*) and Conservator David Hanington (*left*), who is describing the treatment of a Micmac prayer book.

Message from the Director General

Working toward the preservation of Canada's heritage is the fundamental *raison d'être* not only for those of us at CCI, but also for all conservation professionals across the country.

Unfortunately, many challenges to this objective have emerged in the past decade. Some voices in the heritage and conservation community have come to question Canada's capacity to manage and protect our material cultural heritage, and the future of conservation in our country. CCI has been urged to adopt a stronger leadership role in drawing public attention to these issues, and ensuring that appropriate action is taken.

There is no doubt that great changes have occurred in the field of heritage preservation. Many institutions have experienced major budget reductions, and many are still struggling with the consequences. Activities throughout the museum, library, archival, and gallery world have been affected, some being severely curtailed and others completely eliminated. The practice of conservation has certainly not escaped this process of change. In

fact, it could be argued that this is the activity most seriously affected. [The circumstances driving this process of change are not, of course, restricted to Canada. Similar pressures in other countries have affected conservation programs in many parts of the world.]

CCI has not been exempt from these problems. Budget reductions in recent years have forced us to develop and embark on a new strategic direction in order to maintain services to the Canadian heritage community. However, we are well aware that conservation in this country extends far beyond the walls of CCI. The national capacity to protect our material heritage will ultimately depend on the presence of trained staff within all the collecting institutions, supported by a vibrant private sector.

Future governmental, institutional, and private-sector support for conservation will depend very much upon an interested and informed public — one that is aware of the fundamental importance of preserving our cultural heritage. With this in mind, CCI is developing a marketing and communications strategy to raise the profile of

conservation throughout the country. But we know that the active contribution of others in the community will be essential if we are to bring the problems, challenges, and opportunities of the conservation world to the public agenda.

At CCI, we are fully prepared to devote resources to this priority and to develop partnered activities with others in the field. We are also prepared to collaborate with others to develop a better understanding of the impact of the changes that are taking place in the conservation community. If it is true (as some have argued) that there has been an overall reduction in Canada's conservation capacity, documenting this change and assessing its consequences are important first steps in developing an overall strategy for change.

I invite your thoughts in this regard.

Bill Peters
Director General and
Chief Executive Officer,
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Canadian Association for Conservation of Cultural Property

26th Annual Conference and Workshop — May 14–17, 2000, in Ottawa

The 26th annual meeting of the Canadian Association for Conservation (CAC) will be held in Ottawa, Canada, on May 14–17, 2000. The conference will take place at the Canadian Museum of Nature on Sunday through Tuesday (May 14–16), and the workshop "The Ins and Outs of On-site Conservation" will be held on Wednesday (May 17). This workshop will cover health and safety issues, environmental regulations, insurance concerns, public safety issues, public relations, and the use of heavy equipment. Participants will benefit from the insights and tips of experts in the various fields as well as fellow conservators, and should come away with a better understanding of the logistics involved in

on-site conservation along with a check list and resource guide to assist in the planning of such undertakings.

This meeting has been scheduled to coincide with Symposium 2000 - The Conservation of Heritage Interiors (to be held in Ottawa on May 17–20, 2000; see announcement on p. 14 of this Newsletter) so that participants will have the opportunity to attend both events.

For more information, visit the CAC Web site (www.cac-accr.ca) or contact Maureen MacDonald (tel: 613-998-3721 ext. 126; e-mail: maureen_macdonald@pch.gc.ca).

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

Flour Paste: Investigating Alternative Ground Preparations for Oil Paintings

by Leslie Carlyle, Senior Conservator, Materials Historian, Conservation Processes and Materials Research

*I have had occasion to analyse a portion of the ground of a picture by Titian, ...this ground was composed of plaster (sic) of Paris, with starch and paste, but no glue or size, flour paste being used instead of gelatine. [Mérimee, J.F.L, p. 218 in *The Art of Painting in Oil...* (translated by W.B. Sarsfield Taylor), London: Whittaker & Co., 1839.]*

Documentary sources such as the one above speak to the use of flour paste as the binder in ground preparations. In fact, recommendations to use starch or flour paste in both the size layers and as a binder in the ground can be traced back to at least the 16th century.¹ Yet, to date, research on the behaviour of canvas paintings has concentrated on grounds prepared with animal-glue size and oil paint, and current understanding of the

response of grounds to environmental changes is therefore restricted to these materials. However, as part of a study of the biaxial tensile behaviour of paintings that is currently underway in London (England),² CCI was asked to prepare three different 19th-century recipes for flour-paste grounds. This provided a first opportunity to study this type of ground.

The exercise of preparing these flour-paste recipes has been highly instructive, shedding light on the advantage of these preparations (speed in drying) and their immediate behaviour. One of the grounds has already developed significant cracking, which occurred even before the final layer of lead white in oil could be applied. This behaviour is consistent with an early-19th-century painting with a flour-paste preparatory layer that was recently treated at CCI.³ However, not all the preparations are this unstable. The other two recipes we produced have what appear to be sound surfaces, and one in particular could provide an enduring ground for an oil painting.

The effectiveness of all three recipes will be evaluated in the London study, which should help us determine whether or not certain recipes for these grounds did provide a viable alternative for the more common oil- and/or glue-based preparations.

1. Merrifield, Mrs. *Original Treatises Dating from the XIIIth to XVIIIth Centuries on the Arts of Painting...*, Vol.1. London: John Murray, 1849, pp. cclxxxiv-cclxxxv.

2. The biaxial testing project is headed by Dr. Christina Young in conjunction with The Tate Gallery, The National Gallery, London, The Courtauld Institute of Art, and Imperial College, London. For more information, see: Young, C.R.T., and R.D. Hibberd. "Biaxial Tensile Testing of Paintings on Canvas." *Studies in Conservation* 44 (1999), pp. 129-141.

3. *Portrait of Jean Dessaulles*, attributed to Louis Dulongpré (1754-1843). An X-radiograph (by Jeremy Powell) of the painting revealed that cracking had occurred before the paint layer was applied. For more information, see: Helwig, K., and D. Daly Hartin. "A Starch-based Ground Layer on a Painting Attributed to Louis Dulongpré." *Journal of the Canadian Association for Preservation* 24 (1999), pp. 23-28.

The Science of Conservation

Analysis of Outdoor Bronze Sculpture

by Jane Sirois, Conservation Scientist, Analytical Research Laboratory

The limestone building of the Assemblée Nationale in Québec City was constructed between 1877 and 1886 as a monument to important historical events. In keeping with this concept the building's facade

was decorated with numerous bronze sculptures of prominent historic figures such as Montcalm, Wolfe, and Frontenac, some of which were mounted on stone bases while others were placed in niches.

The Centre de conservation du Québec (CCQ) initiated the conservation of these bronze statuary. Samples from unusual or problem areas of various sculptures

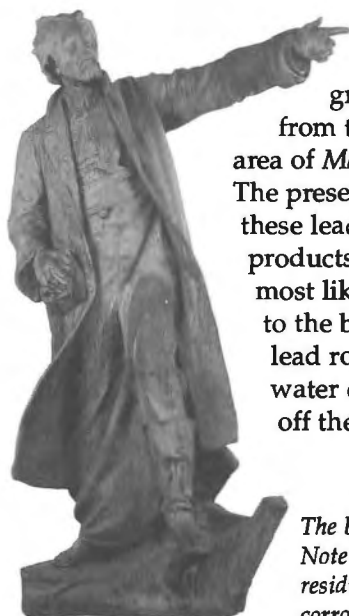
were taken by Martha Singer, a metals conservator at CCQ, and submitted to CCI's Analytical Research Laboratory for analysis of the corrosion products.

The location of a sculpture greatly influenced the results of the analysis. Samples from sculptures on pedestals contained a high incidence of lead corrosion products whereas samples from sculptures mounted



in niches contained more copper corrosion and patina compounds (e.g. brochantite, antlerite, cuprite, and copper oxalates). This set of samples also had a higher concentration of gypsum and copper oxalates (the partly sheltered environment provided by the limestone niches most likely factored into this) and a lower incidence of lead compounds.

When lead corrosion products were identified, they were found in grey 'patina' samples from unsheltered areas, e.g. lead sulphate and lead carbonate hydroxide were identified



in the grey patina from the thigh area of *Marquette*. The presence of these lead corrosion products was most likely due to the building's lead roof, i.e. water could run off the lead roof

and drip onto the sculptures below. We later learned that the building's gutters had been removed during an earlier renovation, reinforcing this hypothesis.

Analysing these sculptures has proven useful in understanding their corrosion and has helped us gain an understanding of the importance of location in the types of materials that are encountered on their surfaces.

The bronze statue Marquette, before treatment. Note the large grey area on the left thigh; this residue was identified as a mixture of lead corrosion products. [Photo courtesy of CCQ.]

On Display

Océanie, la mer by Henri Matisse

by Jan Vuori, Textile Conservator,
Treatment and Development Division

A large (169 cm by 372 cm) silk-screen printed in white on beige linen, *Océanie, la mer* depicts various forms of sea life such as coral and starfish. Matisse created the composition by pinning paper cutouts directly onto the walls of his Paris studio. The composition was then reproduced as a limited edition silk-screen in 1946, and represents Matisse's first use of paper cutouts to create a large-scale work of art. The National Gallery of Canada (NGC) acquired *Océanie, la mer* in 1966, but it has been in storage for many years due to a disfiguring line of brown stains running across most of its width. Exactly how it came to be stained is unknown, but probably there was a colourless substance on the work when it was received which, over time, oxidized and darkened.

Océanie, la mer was transported to CCI in the spring of 1998 to determine the feasibility of removing the stains. Analyses conducted in CCI's Analytical Research Laboratory identified the constituents of the white paint but, as is often the case, it was not

possible to identify the stains. The challenge was to remove or significantly reduce the stains from the unprimed linen without creating new tide-lines. After consulting textile, paintings, and paper conservators, as well as conservation scientists, it was decided that a textile suction disk (designed and fabricated at CCI), which enables liquids to be applied to precise areas of fabrics without spreading laterally, offered the best means for removing the stains locally.

After extensive testing in CCI's Textile Laboratory, a technique was developed to treat the stains with sodium borohydride (a reducing bleach that is not harmful to cellulose) using an ultrasonic mister. When used in conjunction with the textile suction disk, this allowed even very small stains to be treated with precision. During the course of the treatment, a wedge-shaped suction device as well as a supporting armature were made in the Furniture Laboratory to enable otherwise inaccessible areas of



Océanie, la mer by Henri Matisse, Acc.# 14853. [Photo reprinted with the permission of the National Gallery of Canada, Ottawa.]

the work to be treated. Conservators from both CCI and NGC participated in the actual stain removal treatment, which was undertaken in CCI's Textile Lab. After the stain removal/reduction treatment was finished, *Océanie, la mer* was returned to NGC where their staff surface cleaned, humidified, and restretched it onto a new support. Once completed, it was immediately put on display.

As a result of this collaborative effort, not only can this important work be displayed, but the tools and techniques that were developed may assist others in the treatment of similar works of art. "Treatment and Development" is indeed an apt name for this division of CCI.

Professional Development Workshop

“Adhesives for Textile and Leather Conservation: Research and Application”

September 11–15, 2000, 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 adhesives research at CCI as it relates to textiles and leather, and the latest on CCI's textile and skin/leather research projects. This five-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, and for textile mount-making
- case histories and ethical concerns
- preparation and application of backings
- demonstrations of suction table, silicone pad making, BCIN searching
- CCI research on poly(vinyl acetate), acrylic, and vinyl acetate/ethylene copolymer emulsion adhesives
- CCI research on skin/leather, textiles, and physical modelling



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:

Jane Down, conservation scientist specializing in adhesives research
Janet Mason and Carole Dignard, objects conservators
Ela Keyserlingk, Jan Vuori, Renée Dancause, and Janet Wagner, textile conservators

Contributors:

Gregory Young, conservation scientist specializing in leather research
Season Tse, conservation scientist specializing in the degradation of silk and cellulosic materials
Stefan Michalski, conservation scientist specializing in modelling the physics of treatment processes

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

Registration fee (includes all lunches, materials, exclusive participant's manual with samples):

Early bird registration (prior to June 30, 2000): CAN\$700 for Canadian participants (includes GST)
US\$550 for International participants

Registration on or after June 30, 2000: CAN\$750 for Canadian participants (includes GST)
US\$600 for International participants

Enrollment is limited. This workshop will be presented in English.

For further information and registration forms please contact:

Christine Bradley	Tel.: (613) 998-3721 ext. 250
Canadian Conservation Institute	Fax: (613) 998-4721
1030 Innes Road	E-mail: christine_bradley@pch.gc.ca
Ottawa ON K1A 0M5 Canada	http://www.cci-icc.gc.ca

This is what some participants had to say after attending a previous workshop on adhesives research.

"Thank-you so very much for the wonderful adhesives workshop. It was well planned and I learnt an enormous amount. I came home exhausted but very exhilarated by the whole experience! And have been talking of nothing else since."
Zenzie Tinker, Victoria and Albert Museum, London, UK

"I wanted to write to tell you how much I enjoyed and learned from the Adhesives for Textile and Leather Conservation course. It was, I think, the best short conservation course I have ever attended."
Deborah Lee Trupin, Textile Conservator, New York State Office of Parks, Recreation and Historic Preservation

"Thank-you again for a fabulous workshop. It was truly a worthwhile week."
Sara Reiter, Assistant Conservator of Costume and Textiles, Philadelphia Museum of Art

Obituary



Helen Diana Burgess, 1951–1999

Helen Diana Burgess (known as Diana to her family and Helen to her colleagues) passed away in August, leaving an outstanding legacy to the field of conservation.

Helen was born and raised in Lethbridge, Alberta, where she attended St. Basil's and Catholic Central Schools. She earned an Honours B.Sc. from the University of Lethbridge, and a M.Sc. in protein chemistry from the University of British Columbia, working under Dr. Michael Smith (who went on to win the Nobel Prize in chemistry in 1993). It was here that she learned some of the techniques and methodology that she went on to apply in the field of conservation science. Her first real introduction to conservation came in 1976, when she was accepted as a student in the Research stream of the Master of Art Conservation (M.A.C.) program at Queen's University, Kingston, Ontario. Working under the direction of Dr. Jim Hanlan, her interest quickly

became focused on the chemistry and degradation of cellulose. She earned an M.A.C. in Science in 1978 and was hired by the Conservation Processes Research Division of the Canadian Conservation Institute (CCI) the same year.

Helen presented the results of her M.A.C. research ("The effect of bleaching on cellulose; the damage caused, and what this means in conservation") at the annual conference of the International Institute for Conservation of Historic and Artistic Works - Canadian Group (IIC-CG) in 1979. That presentation marked the beginning of Helen's public career as a conservation scientist whose strengths lay in remarkable clarity of thought, presentation, and analysis. Major research projects that she coordinated include investigation of archival tapes, chemical stabilization of paper with borohydrides, use of enzymes in conservation, mass-deacidification, and development of recommendations for alkaline washing. Over the course of her career, Helen published more than 37 articles in conservation publications in Canada and around the world

In the early 1990's, at the height of her career as a conservation scientist, Helen became seriously ill, which led her to take early retirement from her position as a Senior Conservation Scientist at CCI. At the time of her retirement, Helen had just begun work on a project to investigate the characteristics of permanent paper.

Helen's contribution to the field of conservation, especially that of paper

conservation, is immeasurable. Not only was she a rigorous scientist, she served on numerous committees and professional associations. Helen was an editor of the *Journal of the IIC-CG* for many years. She had a fine aesthetic sense, which served her both in her profession and hobbies. Helen loved paper and textiles, flowers, beautiful ceramics and glass, and cats. She was often teased by her friends for picking flowers wherever she could find them, including, in one instance, the Faculty Club garden at Queen's. Helen enjoyed painting flowers, and donated several of her watercolours to the Lupus Society.

Helen's work has had a real effect within the conservation profession, and has changed the materials that conservators use and how they use them. CCI's current reputation as one of the leading researchers in the field of paper and textile conservation is due in large part to her contributions. But perhaps the greatest legacy of all is that there are heritage collections around the world that will survive for future generations thanks to Helen's work.

At the time of her retirement, the conservation community lost a valued colleague, and it is with profound sadness that this loss must now be accepted as final. Helen will be remembered by her friends and colleagues with deep affection and admiration for her kindness, intelligence, talent, and steadfast dedication to the field of conservation. She will be greatly missed.

Symposium 2000 - The Conservation of Heritage Interiors

The Canadian Conservation Institute - Ottawa, Canada

May 17-20, 2000

The Canadian Conservation Institute (Department of Canadian Heritage) will host Symposium 2000 - The Conservation of Heritage Interiors, on May 17-20, 2000, in Ottawa, Canada. A three-day international symposium organized in collaboration with the Association for Preservation Technology (APT) and Public Works and Government Services Canada's Heritage Conservation Program, Symposium 2000 will emphasize the professional collaboration necessary to plan and execute successful conservation projects in historic interior spaces. The presentations will cover architectural interiors and the materials that compose them, both moveable and fixed. The many submissions received so far promise a varied and interesting program. Anyone responsible for the preservation and rehabilitation of heritage interiors, including professional conservators, preservation architects, conservation scientists, craft and trades people, engineers, technicians, and designers, is encouraged to attend.

Symposium papers will be presented in the auditorium of the National Gallery of Canada, with simultaneous translation to English or French as required. Each registrant will receive a book of preprints that includes the text of all papers, in the language of presentation. Abstracts of all papers, posters, demonstrations, and videos presented at the symposium will be included in both English and French.

Program: The tentative program, which follows the course of an architectural conservation project, will include the following session titles:

1. The Preparations—Conservation Assessment
2. Project Planning—Teams and Partners
3. Implementation—Treatment Approaches and Case Studies
 - Furniture and Textiles
 - Wallpaper
 - Plaster
 - Paintings and General Finishes
4. The Interior Environment—Conservation for the Long Term
5. The Post Mortem—Panel Discussion, The Conservation of Heritage Interiors: Consensus and the New Orleans Charter

Registration will begin Wednesday evening (May 17), with papers being presented from Thursday through Saturday (May 18-20).

Tours will be offered and should include various local heritage buildings and sites whose interiors have undergone conservation work or are currently under restoration (e.g. the neo-Gothic buildings of the Canadian Parliamentary Precinct and Ottawa's Notre Dame Cathedral), the treatment and research facilities at the Canadian Conservation Institute, and other venues.

An accommodations and registration package is available by contacting:

Christine Bradley, Registration Coordinator,
Symposium 2000
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5
Canada

tel.: (613) 998-3721 ext. 250
e-mail: christine_bradley@pch.gc.ca

More information about this symposium is available on the CCI Web site (<http://www.cci-icc.gc.ca>).

Internships

CCI is pleased to have hosted the following internships.

Curriculum Internships

Julie Dupuis. A student in the Master in Administration (M.Sc.) program at the University of Sherbrooke. July to September 1999, in Conservation and Scientific Services with Charlie Costain.

Gaëlle Mertian de Muller. A graduate of the French Institute for the Restoration of Art Objects, Paris, France. September 13 to December 10, 1999 in the Treatment and Development Division with Sherry Guild.

Akemi Yoshizawa. A student in the Master of Art Conservation program at Queen's University. June 1999 to July 2000 in the Preventive Conservation Services Division with Stefan Michalski.

Career Edge Internships

A national youth internship program sponsored by the Federal Government of Canada has been established to facilitate the transition of Canadian youth from educational institutions to the workplace. CCI is proud to host paid one-year internships in the following areas: Archaeology, Objects, Conservation Processes and Materials Research, Training and Development, Information Technology, and Finance.

Jennifer Benson. A graduate of the Bachelor of Science program at the University of Ottawa. Conservation Processes and Materials Research internship with Jane Down.

Flora Davidson. A graduate of the Master of Arts in the Conservation of Historic Objects, University of Durham, UK. Treatment and Development internship with Tom Stone.

Jennifer-Lynn Draper. A graduate of the Collections Conservation and Management program at Sir Sandford Fleming College. Training and Development internship with Sonya Milly.

Stacy McLennan. A graduate of the Bachelor of Arts program at Carleton University, and the Collections Conservation and Management program at Sir Sandford Fleming College. Conservation Processes and Materials Research - Archaeology internship with Tara Grant.

Kim Nighbor. A former student of Fanshawe College in the Photography program. Conservation Processes and Materials Research internship with Scott Williams.

Giovanna Silletta. A graduate of Notre-Dame High School, Ottawa. Business Planning and Administration internship with Nicole Guénette-Allen.

Steve Tardiff. A graduate of Philemon Wright High School, Aylmer. Informatics internship with Jean Bisson.

Government Management Trainee Program

Fraser Fowler. A graduate of the Master of Business Administration program at McGill University. Marketing internship with Ray Lafontaine.

Young Canada Works !

Karen Lawford. A graduate of the Honours Bachelor of Science program at Trent University. August to December 31, 1999, in the Analytical Research Laboratory Division with Marie-Claude Corbeil.

Upcoming Workshops

CCI's educational initiatives are an essential means of communication, allowing 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 seminars and workshops in collaboration with various Canadian heritage associations and organizations across Canada during 1999/2000.

November 1999

Storage Planning for Books and Archival Materials

Host(s): Archives Association of British Columbia
Location: Vancouver, British Columbia
Date: November 1-2, 1999
Contact: Rosaleen Hill
tel: (604) 987-5618
e-mail: nvmchin@island.net
Instructor(s): Siegfried Rempel, Deborah Stewart

Care of Textiles

Host(s): Association Museums New Brunswick
Location: Fredericton, New Brunswick
Date: November 5-6, 2000
Contact: Ms. Sylvia Priestly
tel: (506) 452-2908
e-mail: muse@nbnet.nb.ca
Instructor(s): Jan Vuori, Janet Wagner

Storage Planning for Cultural Facilities

Host(s): Prince of Wales Northern Heritage Centre (PWNHC)
Location: PWNHC, Yellowknife, Northwest Territories
Date: November 6-7, 1999
Contact: Rosalie Scott, Conservator
tel: (867) 873-7664
e-mail: Rosalie_Scott@ece.learnnet.nt.ca
Instructor(s): Siegfried Rempel, Deborah Stewart

Making Protective Folders and Boxes

Host(s): Sir Sandford Fleming College
Location: Peterborough, Ontario
Date: November 16-17, 1999
Contact: Gayle McIntyre,
Program Coordinator–Collections
Conservation and Management Program
tel.: (705) 749-5530, ext. 1368
e-mail: gmcintyre@flemingc.on.ca
Instructor(s): David Hanington

Capillarity, Deposition, Darkening, and Bonding in Porous Materials

Host(s): Museums Association of Saskatchewan
Location: Regina, Saskatchewan
Date: November 18-19, 1999
Contact: Patricia Fiori, Education Manager
tel: (306) 780-9269
e-mail: mask@sk.sympatico.ca
Instructor(s): Stefan Michalski

Emergency and Disaster Preparedness for Cultural Institutions

Host(s): Ontario Museum Association; and Ontario Association of Art Galleries
Location: Brampton, Ontario
Date: November 22-23, 1999
Contact: Cathy Blackburn,
Professional Development Project Manager
tel: (519) 571-1576
e-mail: cate@golden.net
Instructor(s): David Tremain, Deborah Stewart

Care of Industrial Collections

Host(s): Manitoba Museum of Man and Nature
Location: Winnipeg, Manitoba
Date: November 25-26, 1999
Contact: Barry Hillman, Coordinator,
Museum Advisory and Training Service
tel: (204) 956-2830
e-mail: bhillman@ManitobaMuseum.mb.ca
Instructor(s): George Prytulak, Lyndsie Selwyn

Integrated Pest Management

Host(s): University of Alberta
Location: Edmonton, Alberta
Date: November 25-26, 1999
Contact: Lisa Barty, Education Coordinator
tel: (780) 492-6271
e-mail: lisa.barty@ualberta.ca
Instructor(s): Tom Strang

January 2000

Salvaging Water-damaged Collections

Host(s): Canadian Museum of Nature
Location: Aylmer, Quebec
Date: January 12, 2000
Instructor(s): Deborah Stewart, David Tremain

February 2000

Care of Historical Furniture Collections

Host(s): Sir Sandford Fleming College
Location: Peterborough, Ontario
Date: February 1-3, 2000
Contact: Gayle McIntyre, Program Coordinator– Collections
Conservation and Management Program
tel.: (705) 749-5530, ext. 1368
e-mail: gmcintyre@flemingc.on.ca
Instructor(s): Michael Harrington

March 2000

Emergency and Disaster Preparedness

Host(s): Department of National Defence
Location: Ottawa, Ontario
Date: March 2-3, 2000
Instructor(s): Deborah Stewart, David Tremain

Preservation of Optical Discs and Magnetic Media Records

Host(s): Council of Nova Scotia Archives (CNSA)
Location: Halifax, Nova Scotia
Date: March 2-3, 2000
Contact: Rosemary Barbour, Chair, CNSA
tel: (902) 424-6070
e-mail: cnsa@fox.nstn.ca
Instructor(s): Joe Iraci, Stefan Michalski

Preservation of Optical Discs and Magnetic Media Records

Host(s): Public Archives of Nova Scotia
Location: Halifax, Nova Scotia
Date: March 6-7, 2000
Instructor(s): Joe Iraci, Stefan Michalski

Emergency and Disaster Preparedness for Cultural Institutions

Host(s): Eastern Ontario Regional Museum Group
Location: Brockville, Ontario
Date: March 30-31, 2000
Contact: Bonnie Burke, Secretary-Treasurer
tel: (613) 342-4397
e-mail: bmchin@cybertap.com
Instructor(s): Deborah Stewart, David Tremain

Each year, CCI invites provincial museum, archival, and art gallery associations and major museums to submit an application to host a CCI workshop in their own province or territory. The wide range of available conservation topics is detailed in CCI's Training Catalogue. For more information, or to obtain a free copy of the catalogue, contact:

*Sonya Milly, Training and Development Officer
Canadian Conservation Institute
1030 Innes Road
Ottawa ON K1A 0M5
tel: (613) 998-3721, ext. 110
e-mail: sonya_milly@pch.gc.ca*

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.

May

Tom Strang co-presented a two-day seminar on integrated pest management at the **Upper Midwestern Conservation Association** in Minneapolis, MN.

At the annual conference of the **Canadian Association for Conservation of Cultural Property** in Winnipeg, MB: Tom Strang gave a talk at the workshop on thermal insect control; Michael Harrington presented a paper that described the scope and impact of CCI's recent activity in the built heritage sector; David Grattan presented the annual Per Gulbeck memorial lecture; Jane Sirois delivered a lecture "The Analysis of Museum Collections for Arsenic and Mercury" at the workshop "Green Conservation: Environmental and Human Safety in Conservation"; and Lyndsie Selwyn delivered a lecture "Active Corrosion on Archaeological Iron."

Stefan Michalski presented a two-day seminar on museum environment issues for staff at the **Historic Royal Palaces, Hampton Court Palace** in London, followed by one-day seminar on suction tables for the Textile Conservation Section.

Stefan Michalski delivered a lecture "Risks and Revenues, Treasures and Traffic" at the annual meeting of the **Canadian Association of Professional Heritage Consultants** at **Parkwood Estate** in Oshawa, ON.

Scott Williams presented a paper "Non-destructive, In-situ, On-site, Mid-infrared Spectroscopic Chemical Analysis of Objects in Museums

using a Portable Spectrometer with Fiber Optic Probe" at **ART'99, 6th International Conference on "Non-Destructive Testing and Microanalysis for Diagnostics and Conservation of the Cultural and Environmental Heritage"** in Rome; the text of the presentation was published in the *Proceedings* of this conference (vol. 2, pp. 1619-1631).

Siegfried Rempel, Deborah Stewart, and David Tremain made a site visit to the **Résidence du Gouverneur Général at the Citadelle** in Quebec City.

Siegfried Rempel made a site visit to the **Musée de la Civilisation** in Quebec City as part of a Storage Planning Project.

Siegfried Rempel coordinated a visit of staff from the **Musée de la Civilisation** in Quebec City (who were working on a Storage Planning Project) to local area storage facilities including the **Canadian Museum of Civilization, the Canadian Museum of Nature, and the National Archives.**

Tom Strang co-presented two half-day workshops on CO₂ fumigation "Passing Gas" at the 1999 meeting of the **Society for the Preservation of Natural History Collections** hosted by the **Smithsonian Institution** in Washington, DC.

Siegfried Rempel provided on-site training to staff of the Directorate of **History and Heritage, Department of National Defence.**

June

Staff of the Textile Lab visited the **Mississippi Valley Textile Museum** in Almonte, ON, to return two mummy shrouds that had been treated at CCI; the visit provided an opportunity to discuss the treatment as well as to demonstrate the workings of the mounting system that had been made to accommodate both the display and storage of these very large pieces of fragile linen, and also enabled CCI staff to become more familiar with the museum's facilities, collections, and exhibitions.

CCI Workshops

"Conservation Considerations for Sculptors and Carvers" Bob Barclay for **Yukon Tourism/Heritage Branch; McBride Museum; Society for Yukon Artists of Native Ancestry; and Yukon Arts Branch, Whitehorse, YK.**



Jan Vuori (left) and Renée Dancause roll a mummy shroud onto a tube that forms part of the mounting system.

July

At the **Senate Commerce and Banking Committee Room**, in the **Centre Block on Parliament Hill** in Ottawa, Debra Daly Hartin (project leader), Helen McKay, Bob Arnold, Peter Vogel, CCI summer intern Holly Fiedler, and sub-contractor Wojciech Kulikowski started the treatment of ten paintings on canvas (by Atilio Pusterla, 1920) adhered directly to the walls; the work involved consolidating flaking paint, cleaning heavy dirt/grime layers from the surface of the paintings, and readhering one painting which was peeling from the wall.

In the **Chamber of the Legislative Assembly of Ontario** at Queen's Park, Toronto, Jim Bourdeau, sub-contractors Amanda Gray and Jennifer Cheney, Helen McKay, CCI summer intern Holly Fiedler, Bob Arnold, and Peter Vogel worked on a project to remove several solid paint layers from a representative portion of the walls where decorative and allegorical wall paintings had been applied directly to the plaster; inpainting was carried out on a portion of the wall where layers had already been removed in 1991 by another firm.



Helen McKay (left) and Debra Daly Hartin clean and consolidate a painting on canvas adhered directly to the wall in the Centre Block on Parliament Hill, Ottawa.

August

Jean Tétreault gave two talks "Standards for Levels of Indoor Pollutants" and "Summary of Control Procedures to Prevent Damages Caused by Contaminants" during the second meeting of the working group on air quality in museums at the **Instituut Collectie Nederland** in Amsterdam.

Siegfried Rempel made a site visit to the **Thunder Bay Art Gallery** in Thunder Bay, ON, to monitor the Facilities Upgrading Project.

Brian Laurie-Beaumont and Siegfried Rempel met with staff of the **RCMP** in Ottawa to develop, with the aid of private-sector consultants Sandra Lorimar and Chris Borgal, a conceptual plan for a heritage interpretation centre (at the Rockcliffe Musical Ride barracks) on the role of horses in the history of the RCMP.

At the 12th triennial meeting of the **International Council of Museums - Committee for Conservation (ICOM-CC)** in Lyon, France: Marie-Claude Corbeil delivered a lecture "The Use of a White Pigment Patented by Freeman by Tom Thomson and the Group of Seven" (co-authored with Elizabeth Moffatt and Jane Sirois) and was elected coordinator of the working group "Scientific Methods of Examination of Works of Art" for a second term; David Grattan was re-elected as Chairperson of the ICOM-CC; and Debra Daly Hartin presented a paper "A Collaborative Treatment; Reducing Water Stains on a Silkscreen on Linen" to the Paintings Working Group.

Siegfried Rempel made two presentations "The Lighting Decision" and "Digital Photography" at the annual conference of the **Organization of Military Museums of Canada** at CFB Gagetown in Oromocto, NB.

September

David Grattan and Jane Down attended meetings of the **Historical Plastics Research Scientists' Group** held at the **Victoria and Albert Museum** in London and gave a report on the current polymer and adhesive work being done at CCI.

At the conference "**Reversibility: Does It Exist?**" organized by the **British Museum** in London: Bob Barclay presented a paper "Reversibility: The Thinking Behind The Word" and Jane Down gave a talk "Swelling as an Indicator of Removability."

Jane Sirois visited the **Royal Ontario Museum** in Toronto to analyse (non-destructively) artifacts from the anthropology collection using X-ray spectrometry to detect the presence of arsenic- and mercury-containing compounds; the project was undertaken in conjunction with the Royal Ontario Museum's health and safety officer, Pamela Costanzo.

Brian Laurie-Beaumont and Siegfried Rempel made a series of site visits in British Columbia and Alberta (**Head-Smashed-in-Buffalo Jump**, **Secwepemc Museum and Native Heritage Park**, **U'mista Cultural Centre**, **Kwagiulth Museum and Cultural Centre**, **Campbell River Museum**, and **Xa'ytem Longhouse Interpretive Centre/Hatzic Rock**) culminating in the presentation of a three-day workshop "Facility Planning and Design" in Vancouver to approximately 20 First Nations groups.

Siegfried Rempel made site visits to the **Kamloops Art Gallery**, the **Art Gallery of the South Okanagan**, and the **Kelowna Art Gallery** to conduct Movable Cultural Property Review Board facility reviews.

October

Jane Sirois and Marie-Claude Corbeil made a site visit to the **Musée du Séminaire de Sherbrooke** to analyse (non-destructively) a selection of ornithology specimens from their collection using X-ray spectrometry to detect the presence of arsenic- and mercury-containing compounds.

Marie-Claude Corbeil gave a talk on the scientific examination of works of art during the 11th Chemistry Symposium of the **Université de Sherbrooke** in Sherbrooke, QC.

Stefan Michalski presented a three-day seminar on "Lighting in Museums" in Caracas, Venezuela (hosted by the **Museo de Bellas Artes** - contact Melanie Monteverde); he also visited museums and galleries in the area to discuss lighting and other preventive conservation issues.

Ian Wainwright presented a paper "Natural Weathering and Visitor Impact at Rock Painting and Petroglyph Sites" at the **Cultural Heritage Tourism in Ontario** conference in Pembroke, ON.

David Tremain gave a presentation at the one-day workshop "Be Prepared...Conducting a Vulnerability Assessment" for the **Conservation Center for Art and Historic Artifacts** in Philadelphia, PA.

Brian Laurie-Beaumont made a series of site visits in southern Ontario (the **Woodland Cultural Centre** in Brantford, the **Royal Ontario Museum** in Toronto, and **Trent University** and **Sir Sandford Fleming College** in Peterborough) to discuss First Nations cultural development issues; these discussions will help prepare CCI to assist First Nations cultural facility development projects.

Jane Down delivered a lecture on CCI's adhesive research to students in the Master of Art Conservation program at **Queen's University**.

Lyndsie Selwyn delivered a lecture "Corrosion on Archaeological Iron Before and After Excavation" at the conference of the **National Association of Corrosion Engineers** in Ottawa.

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New Technical Bulletins

Technical Bulletin 20

"Construction of a Constant-current Power Supply for Spot Electrolysis"

Electrolytic reduction has been used to treat corroded metal objects for some time, and a number of articles have been published on the theory and techniques of electrolysis.

Manufactured units that perform electrolytic reduction on localized corrosion on metal objects are expensive, and frequently do not provide low current regulation. When performing spot electrolysis on a metal artifact, a number of variables come into play that affect current flow, such as concentration of the electrolyte, surface area of the anode compared with the cathode, and the degree of corrosion (resistance). A current-limiting control can prevent very high current density on the artifact, thus avoiding undue heat, vigorous hydrogen evolution, and embrittlement. Depending on the voltage rating, a direct-current source, such as an unregulated battery, may cause sporadic current surges on areas of the artifact, subjecting it to unwarranted stress. A current-limiting power source provides a way to control the rate of the electrochemical reaction.

This Technical Bulletin provides a schematic diagram and detailed instructions to build a small, inexpensive spot electrolysis device that controls the current. The device described is a direct-current power supply with current-limiting control, and has a maximum supply of approximately 120 mA. This device can be used to treat small areas of corrosion on furniture hardware and plated metals, and will be useful in treating composite artifacts and metal archaeological finds.

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Technical Bulletin 21

Coatings such as paints and varnishes are often used in museums. This Technical Bulletin will alert architects, designers, contractors, fabricators, project managers, and museum staff to the damage that coatings might cause to objects, and provide guidelines for the selection of coatings that will help minimize this risk. A list of coatings is provided for many different situations, and when possible, alternative materials and procedures are given. Recommendations are based on the various classes of coatings and resins; trades names are not specified because there is a large variety of coatings on the market and their formulations may change in the future. Tests that will verify coating specifications or monitor the emission of volatile compounds are described, and information on substrate preparation is also provided.

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