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CCI: The First Twenty Years

by Bob Barclay

...the conservation of historic objects and works of art that form part of Canada's cultural heritage; research; training of specialists for this work; and provision of consultant service.

National Museums of Canada, 1972

The Canadian Conservation Institute (CCI) had its beginnings in the National Museums Act tabled by the Government of Canada in 1968. The legislation stipulated forming a corporation comprising the four existing national museums — the National Museum of Natural Sciences, the National Museum of Science and Technology, the National Museum of Man, and the National Gallery of Canada — and "such other museums as may...be established by the Board." It was not until 1972 that, on the initiative of the newly formed corporation, the Federal Cabinet recommended establishing the Canadian Conservation Institute. On March 28 of that year, the Secretary of State, Gérard Pelletier, officially announced the decision and, finally, on October 31, 1972 the National Museums of Canada made the institute a reality.

The structure of the newly formed institute grew to include two directorates at the headquarters in Ottawa: one for Conservation Services, the treatment wing of the institute, and the other for

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Conservation Research Services, the scientific wing. The institute was established at a time when few trained conservators were available in Canada, especially in the field of conservation treatment. This lack was addressed in two ways: firstly, by tapping into the pool of professionals in other countries, particularly in the United Kingdom and Europe, and secondly, by in-house conservation training, which was considered an essential function of the new institute. Scientific staff who until then had worked at the National Conservation Research Laboratory (NCRL) became CCI staff members.

In addition to headquarters facilities in Ottawa, two regional laboratories were set up soon after CCI was established, one in Vancouver, B.C., and the other in Moncton, N.B. Three other regional laboratories were planned. All five laboratories would act as satellites, concentrating primarily upon active conservation treatment, consultation, and instruction of conservation trainees.

Initially, the headquarters facilities of CCI were divided between three buildings in the centre of Ottawa: the Lorne Building, which housed the majority of analytical and research equipment and staff; the Bankal Building, where conservation treatment facilities, the library, conservators, and equipment were located; and the Daly Building Annex, which had several rooms on one floor dedicated to the in-house conservator training program. This arrangement reflected the fact that the core scientific staff had been transferred from the NCRL already in place in the Lorne Building, the site of the National Gallery of Canada at that time. Space and equipment in the other two buildings were added to complement the existing facilities.

In 1974, arrangements were made for CCI to consolidate its headquarters in a rented building on the corner of Innes Road and St. Laurent Boulevard in Ottawa's east end. This was a new building, still under construction, which was to be custom fitted for the functions of conservation treatment and research. The treatment laboratories were to be two-stories high with north-facing clerestory windows, while the scientific research laboratories would occupy the upper floor. Ample space was planned for a library, workshops, long-range testing facilities, and artifact and materials storage. The move to the new quarters took place over several months, concluding in the new year of 1976.

Between 1979 and 1986, the fleet of Mobile Conservation Laboratories conducted surveys and visited museums across Canada to promote preventive conservation.

Previously, the division of CCI headquarters between three inadequate and widely separated buildings had allowed for limited cooperative possibilities between the staff of the various sections. The consolidation of the institute in its new building really signalled its beginning as a cohesive working entity. During the late 1970s, the institute continued to add staff to its established structure. Conservation Services finally encompassed six sections: Works of Art on Paper, Ethnology, Archaeology, Fine Arts and Polychromes, Textiles, and the newly added Furniture and Wooden Objects. In Conservation Research Services the two existing sections, Environment and Deterioration Research and Analytical Research Services, were augmented by a new section, Conservation Processes Research.

However, things were not all running according to schedule. A withdrawl of financial support for the original extended plans for CCI caused the closure of the two regional laboratories in Vancouver and Moncton, and of a partially operating lab in Quebec, and resulted in the cancellation of plans for a laboratory in the Prairies. Although a heavy blow to the concept of a nationwide conservation network, this decision did result in the initiation of the Mobile Conservation Laboratory service. As a replacement for the fixed satellite laboratories, five Mobile Labs visited museums throughout the country, offering advice on care of collections and preventive conservation, and performing treatments where time and facilities permitted. While offering personal service to a large number of museums across the country, the program also had far-reaching professional repercussions, especially for the conservators on the institute's staff.

One of the perceived weaknesses of a centrally located headquarters was the lack of everyday contact with museum staff, especially in the small museums that comprised a large part of CCI's mandate. Consultation on artifacts submitted for treatment at headquarters, and their disposition once returned, was hampered by geography. With the advent of the Mobile Labs, professional conservation staff could visit as many as six museums in a three-week tour of duty, giving assistance to the museum staff but also helping the CCI conservators themselves to

understand problems on site and to assess artifacts for extensive treatment at headquarters. Through this process, the conservation staff developed and refined an appreciation for preventive conservation and an understanding of what measures museum staff with limited resources could take to safeguard their collections. This represented a profound change from CCI's intended course — the active and interventive treatment of artifacts in the laboratory.

During their eight summers of service (1979-1986), the Mobile Conservation Laboratories made 820 museum visits and conducted ten major surveys of collections. In the final year alone, the six Labs travelled over 44,300 kilometres. Although an unqualified success, by the end of 1986 the peak of the Mobile Lab service was considered to be past, and it was replaced with another service that met the same goals. In order to maintain regular contact with museum staff and to continue promoting preventive conservation awareness, a program of seminars and workshops was put into place. Each province and territory could apply for workshops or seminars each year on a wide range of topics including Care of Museum Objects, Opening and Closing a Seasonal Museum, Disaster Preparedness, Care of Industrial Artifacts, Mount Making for Museum Objects, Care of Works of Art on Paper, and many more. The list continues to be updated as conservation and scientific staff develop subjects at both general and advanced levels.

Arising from this "grass roots" emphasis, the ever-popular *CCI Notes* series was inaugurated in 1981. This new direction in publications was intended specifically for the smaller museum with limited resources. Over the next ten years, nearly 75 *CCI Notes* were produced covering a wide range of preventive conservation advice and simple treatments. At the same time, the *Technical Bulletin* series continued to be produced, generally being aimed at the larger institution and the professional conservator. The many CCI seminars and workshops required large amounts of visual and demonstration material. To assist with this, the Training and Information Division (now Information and Extension Services) began assembling over 1000 35 mm colour slides on a wide range of topics. These slides are available both to CCI staff for preparing lectures and workshops and to the general museum population on request.

Meanwhile, the increased awareness of the role of preventive conservation was reflected in the kinds of treatments being undertaken in the laboratories in Ottawa. Routine treatments tended to become displaced by larger and more complex problems requiring the special expertise, equipment, or facilities found only at headquarters. Often, research and tests on techniques and materials were necessary before treatment could begin. This developmental approach fostered a closer working relationship between conservation science and treatment practice, to the benefit of both disciplines. Of particular importance in this respect was CCI's very visible presence during nine seasons of the archaeological investigations of the Basque whaling site at Red Bay in Labrador. Much was done during these summer seasons to develop and refine field techniques, while back at headquarters the problems of treatment were tackled and solved.

While Conservation Services was exploring the long view, reaching out to client museums throughout the country and refining treatment approaches in the lab, Conservation Research Services was also developing a broader base of expertise. The exisiting facilities and staff continued to offer analytical services nationwide and to research a wide range of problems in the deterioration and characterization of materials. To these was added, in 1976, a section dealing specifically with research on applied conservation treatments. In essence, Conservation Processes Research bridged the gap between scientific research and its practical application in the conservation treatment laboratory.

Major conservation science projects included long-term research into and preservation of rock art sites like the Peterborough Petroglyphs, experiments in the treatment of waterlogged wood, and analysis of pigments and media from paintings and artifacts. A project at Anthony Island in the Queen Charlotte Islands, British Columbia, involved the scientific examination of a large number of totem poles in order to characterize their deterioration and analyse their condition. In the High Arctic, a fossil forest on Axel Heiberg Island was studied, and samples of wood and leaf mat were brought to headquarters for treatment.

Analytical work in connection with authenticating works of art and museum artifacts was first authorized by the Board of Trustees of the National Museums Corporation in 1981. CCI scientists were instrumental in providing scientific data to assist in verifying authenticity and exposing fakes. The two decades of CCI's existence has seen wide-ranging developments in instrumentation. Increasingly sophisticated analytical machinery and electronic data processing have allowed for a parallel refinement of analytical techniques. Databases of information, ranging from infrared and x-ray diffraction data from a wide range of museum objects to detailed analyses of proprietary conservation materials, were assembled during this time. In association with the National Research Council of Canada, CCI assisted in testing and refining techniques for recording and replicating museum objects by laser scanning.

During the 1980s, the institute consolidated its position as a leader in conservation treatment and research. Great advances were made by CCI staff in the application of electronic data processing to conservation science and practice. In 1985, an agreement was signed between CCI, the Canadian Heritage Information Network, and the Getty Conservation Institute in California to share information, equipment, and expertise by forming the Conservation Information Network. Information on conservation materials and bibliographic references were made available on-line to conservators worldwide. In addition, staff developed and implemented a powerful database called ICARUS for all CCI's operational records, including analysis, treatments, consultations, and projects.

Around this time, CCI inaugurated a series of bi-annual symposia, each one intended to bring together professionals in a specific field of conservation for a week-long conference. CCI had hosted conferences on a smaller scale in the past, including "Wooden Objects" and "Paper Documents" in the late 1970s, but starting in 1986 with "The Care and Preservation of Ethnological Materials," the scale was increased and the geographical coverage was expanded. In addition to such major events, the institute continued to invite guests to give lectures, workshops, and seminars on topics of specific interest.

The reorganization of the National Museums of Canada in 1987 resulted in CCI being transferred to the Arts and Heritage Branch of the Department of Communications (DOC). Although under an entirely different government department, it remained very much business as usual at CCI. The institute's international presence continued to be emphasised and expanded, and CCI conservators and scientists were called upon to give lectures and courses in Europe, Africa, Australia, Asia, South America, and the Middle East.

CCI's library saw a huge expansion after the transfer to DOC as the Museology Collection of the National Museums of Canada was absorbed. In the decade from 1981 to 1991, journal subscriptions and new acquisitions doubled, reference enquiries from the museum community and the general public rose by a factor of four, and interlibrary loans increased tenfold. After the Museology Collection was incorporated, the library was combined with the Training and Information Division to create the Directorate of Information and Extension Services.

More emphasis was placed upon the need for efficient dissemination of information about CCI and its programs after the move to the Department of Communications five years ago. December of 1987 saw the distribution of the first issue of the current *CCI Newsletter*, a publication intended to inform the Canadian museum community, at regular intervals, of CCI's activities. Ten subsequent issues, containing news of major projects, the comings and goings of staff, and other topics of interest, have been mailed to a wide readership in Canada and around the world.

As the Canadian Conservation Institute celebrates its twentieth year of existence, it can look back on a steady development and a willingness to adapt to the needs of a wide and diverse client base. Over the years, the number of staff has increased and the breadth of expertise has expanded. CCI can look forward to a long period of consolidating its position, while still retaining the youthful flexibility necessary to react to the challenges of an ever-changing discipline. ♦

The Captain and the Time Capsule

by Bob Barclay

The Captain has become a familar sight in front of CCI on Innes Road. He was found in a junk yard and was rescued from certain destruction by a former staff member many years ago. He was placed at the front door of the building temporarily, but seems by now to have achieved squatter's rights. In fact, things would not be the same without him — people recognise the institute when they are reminded of the curious fibreglass figure standing in front.

As part of CCI's twentieth anniversary, the Captain will be refurbished and placed upon a secure base. At present, he is not a good advocate of conservation, with his unstable position and his general state of disrepair. Along with his stabilization, a small time capsule, containing documents and mementos, will be placed in the concrete base. Instructions on a plaque will indicate the location of the capsule and will suggest an opening date — perhaps fifty years hence in the year 2042?

Naturally, great care will be taken to ensure that the time capsule remains intact and that the contents are not spoiled in any way by their sojourn. Like the Captain as he stands at the moment, the time capsule would hardly be a good advocate if, when opened, it contained illegible papers and deteriorated fragments.

A competition among CCI staff members will decide what goes into the capsule. A brief survey of the contents of time capsules opened at CCI and elsewhere over a period of some years has revealed a not-altogether-surprising lack of imagination. With this in mind, we will ensure that the choice of material is intelligently conducted, and that the artifacts and documents chosen are appropriate to CCI in particular and are evocative of conservation in Canada in general. ♦

Getting to the Source: 19th-Century Artists' Oil Painting Materials and Techniques

by Dr. Leslie Carlyle

Nineteenth-century academic-style paintings in Britain, Europe, and North America have gained notoriety for the technical problems they present not only aesthetically but also in terms of their conservation analysis and treatment. Other than the knowledge that bitumen was a popular pigment and that these paintings often appear to have a high resin content in the oil medium, until recently there has been little specific information available on the materials and techniques in use during this period.

Recognizing the dearth of technical information and the usefulness of developing an expertise in this area, in 1986 the then Director General of CCI, Wally Kozar, supported a research proposal to carry out a comprehensive investigation into documentary sources covering 19th-century artists' oil painting materials and techniques. At CCI, and elsewhere in Canada and North America, a large percentage of the 19th-century paintings being treated had been made or influenced by artists trained in Britain. Therefore, this investigation led naturally back to the United Kingdom. The work was carried out as Ph.D.-level research in the Technology and Conservation Department of the Courtauld Institute of Art, University of London.

Approval for educational leave with allowance was granted in the fall of 1986, and the research began in January 1987. The thesis, entitled "A Critical Analysis of Artists' Handbooks, Manuals and Treatises on Oil Painting Published in Britain Between 1800 and 1900: with reference to selected eighteenth-century sources," was submitted in April of 1991, and was passed on September 25, 1991.

The books that were published in the 19th century on oil painting generally fall into three categories: instruction books on how to paint in oils; handbooks or reference manuals on materials, such as varnishes and pigments; and general compendiums on the arts. These books not only provided information to the amateur, but were also important sources for well-known artists and even for members of the Royal Academy. In addition, selected sources from the 18th century were studied, and further information was collected from general recipe books and from dictionaries of arts and manufacturers.

Two other important sources of information were the colourmen's retail catalogues, which listed the materials available throughout the century, and a series of bought ledgers from the colourman Roberson. The bought ledgers, which dated from 1828 through to 1900, recorded company purchases of materials such as oils, varnishes, pigments, and canvas. A high correlation was found between the introduction of new materials and their appearance in the colourmen's catalogues, the bought ledgers, and the oil painting manuals.

Most of the sources were rare books not available for lending; therefore, the research was carried out with a portable computer equipped with a flat-file database software package. All technical information relating to oil painting was entered in the appropriate categories: oils, varnishes, painting mediums, grounds, painting methods, pigments, etc. Each entry included the direct quote from the book. Summary fields allowed quick access to the materials listed or described. In some cases, the authors provided recipes as well as instructions for the application of various materials; these were also included in the database. Once data entry was completed, chronological and subject sorts were performed. It was then possible to look at the century as a whole, and to chart the materials in use, their popularity and demise, and the introduction of new materials.

This information can be particularly useful for interpreting paint cross-sections and the results of instrumental analyses, and for preparing representative samples in materials research. As well, this work can give some indication of why artists chose certain materials and why they used them in the manner that they did.

Although for many years conservators have had access to information on the components of a painting from their colleagues who carry out material analyses, *why* these materials are present has not always been elucidated. Documentary research can provide further insight. For example, in recent years fluorescence microscopy has illuminated the presence of many intermediate layers that were used in building up a painting, and newly available equipment for infra-red microspectrometry has identified materials in discrete layers of a cross-section. As a complement to this, the documentary research on painting manuals has provided information on the purpose of these layers and on the reasons artists selected specific materials for use.[1]

The database created during this Ph.D. research on artists' pigments has contributed further information relating to research reported in a previous *CCI Newsletter* article, "A Double-Sided Panel Attributed to Tom Thomson." In the article, author and Senior Conservation Scientist Ian N.M. Wainwright noted the presence of a mixture of lead sulfate and zinc white, which he recognized as "probably...prepared or blended by a paint manufacturer rather than mixed by the artist." He continued, "We had not anticipated finding lead sulfate."[2] A search through the pigment section of the database revealed that a new form of "Permanent White", which consisted of lead sulfate and zinc oxide, had been introduced in the last decades of the 19th century.

The first of the authors to describe this pigment mixture was Henry Seward in 1889: "Permanent flake white is a recent addition to the list of white pigments, and is manufactured under a patent granted to Messrs. Freeman & Co. It is composed of precipitated lead sulphate, mixed with zinc oxide, and submitted to great pressure, by which the bulk is considerably reduced and opacity obtained. The white is slightly different in tone to flake white, similar in body, and unalterable."[3]

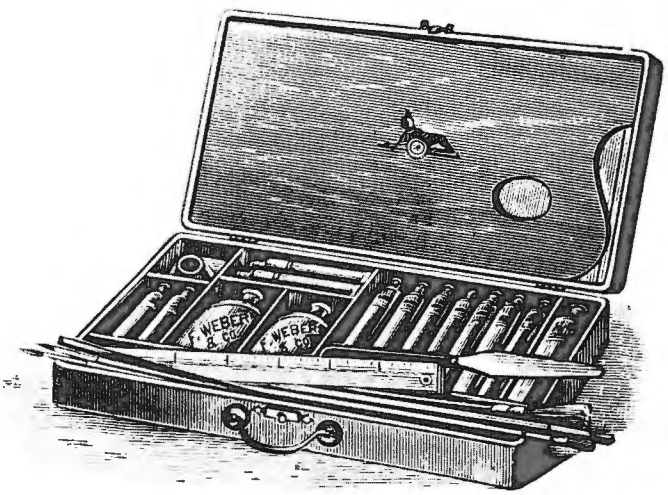
More insight into the reasons for combining these two materials can be gained from A.P. Laurie, who provides an account of this pigment mixture: "These zinc oxide and lead sulphate paints are now being brought before house-painters and artists under various names such as, 'White Lead, Caledonia Park Works, Glasgow,' 'Freeman's White,' 'the New Flake White or Cambridge White,' 'Marble White,' etc. They have the advantage of keeping their colour better in the impure air of large towns and gas-lighted rooms....Zinc White prepared the old way was believed by artists to flake off, but these new whites have shown no such tendency. They are also practically non-poisonous, and free from the disagreeable smell of white lead."[4]

Tom Thomson may have specifically chosen this white as a non-toxic and more durable alternative to lead white, or he may have been unaware of the ingredients in Permanent White and may simply have found that it served his purpose, was economical, and was easily available.

As Ian Wainwright suggested, "Further research and analysis are necessary to determine the extent to which Thomson and his contemporaries may have used lead sulfate, lead white, zinc white, or mixtures of them."[5] It is to be hoped that such further research, coupled with what we know about Permanent White, will also inform us of Tom Thomson's and his contemporaries' intent in adopting this new white.

The information gained from this research into artists' materials and techniques also reveals the reasoning behind the use of resins in 19th-century academic-style paintings: painters felt it necessary to mix resins with their oil paint to achieve the translucency of the old masters, whose techniques they emulated. The difficulty that many conservators have experienced in cleaning such resinous paintings is further explained by 19th-century sources. Throughout the century, artists were advised to employ the same resin throughout their painting — if they used mastic resin as an addition to their medium, they should also use mastic resin in the final varnish. The same applied to copal resin — if it was used in the medium, then the painting should be varnished with it. Homogeneity in the use of resins was seen to be important, since the presence of different resins was believed to lead to cracking. There were some counter arguments, but generally the homogeneity theory appears to have been the most popular. This idea worked in reverse as well. In the 1890s, the then President of the Royal Academy, Sir Fredrick Leighton, wrote to author Arthur Church, "Is it not always better to have some resin in a picture throughout since it has to be varnished at the end?"[6]

The research on the instruction books, manuals, and treatises identified a number of themes that were important to 19th-century artists and their colourmen. Amongst the most prominent were the quality, authenticity, and durability of their materials. The concern with durability is most ironic for an age that produced some of the most unstable paintings of all time.



With this new information available on 19th-century oil painting materials and techniques, research does not have to be restricted to

the identification of materials alone. Our understanding can also encompass aspects of the design and intended application of materials.

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Treatment of a Boulle Work Bracket Clock: A Final Report

by Peter Newlands

An article in the September 1990 *CCI Newsletter*, entitled "Treatment of a Boulle Work Bracket Clock: A Progress Report," discussed the initial problems that arose in the treatment of a clock belonging to the Royal Ontario Museum. Several questions were addressed: Was there enough of the marquetry design remaining on the clock to accurately replicate the missing parts? Which reversible adhesive (i.e., an adhesive that can later be removed without damage to the artifact) could be used to bond the dissimilar materials found in Boulle work? What material could be used to fill the areas of tortoiseshell loss?

Laura Nagora, Assistant Conservator, with help from Marsha Selick, Conservator, and Linda Borsch, an intern at CCI, completed the research, cleaned and stabilized the underlying structure (the carcass) of the clock, and prepared the missing marquetry elements. Janice Manuel, CCI Fellow, and Jane Down, Conservation Scientist, researched and tested adhesives. Gordon Fairbairn, Senior Conservator, and Valerie Dorge, Conservator, provided overall supervision and direction. With input from many conservators and conservation scientists, the research phase in the treatment of the clock was largely completed by April 1990. Though some questions remained, reassembly of the clock could begin.

Initial examination in the CCI Furniture and Wooden Objects laboratory showed traces of ebony and ivory banding on the clock, but tests later revealed that the ivory had been replaced with a calcium carbonate fill. Nail holes in the marquetry and carcass indicated that the clock had been worked on and altered many times. Work commenced with the installation of an ebony-ivory banding on the front face and on the sides of the clock. Gordon Fairbairn

made the replacement banding by gluing the ivory from old piano keys to ebony veneer. The resulting laminations were cut into 3 mm strips and were glued into the existing grooves on the clock case with liquid fish glue. The marquetry panels were installed around the banding, which was then levelled and coloured with aniline stains.

Gluing the marquetry elements to the carcass, especially to the curved elements, was a constant challenge. Attaching marquetry elements to the flat surfaces was reasonably routine. A variety of special wooden clamping blocks were made for applying pressure to the clock's flat and bevelled surfaces. The use of an adhesive consisting of sturgeon glue with 5% vol/vol glycerol was instrumental in the treatment of the clock because it could be reactivated with heat. Therefore, without concern for the setting time of the adhesive, time and care could be taken placing the marquetry elements and attaching cauls and clamps to the flat surfaces of the clock. Once the clamps were in place, the glue was reactivated with heat from a photography lamp. This allowed for accurate placement of the marquetry, and resulted in a strong bond between the marquetry and the wood substrate.

Rather than using cauls, which is the traditional method for applying Boulle work, vacuum veneering was employed on the curved surfaces of the clock. Vacuum veneering — using a vacuum pump to create low pressure in a plastic bag — is used in furniture making to clamp veneer to flat and curved surfaces. Typically, constructing individual cauls is a time-consuming process. Cauls must fit precisely to the curved surface, and are often lined with a metal such as lead or brass. Besides the expense of making cauls, their use obscures the work, and their rigidity can be troublesome. If a piece of veneer slips out of place during the gluing process or if there is foreign matter in the way, the marquetry can be damaged. Fortunately, the use of vacuum pressure in this project alleviated the need for cauls, and permitted continuous monitoring of the

gluing sequence through the almost-transparent vacuum bag.

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

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

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

The Canadian Artists' Painting Materials Project

by John M. Taylor

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

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

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

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

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

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

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

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

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

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

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

CCI Scrapbook

20th Anniversary - CCI
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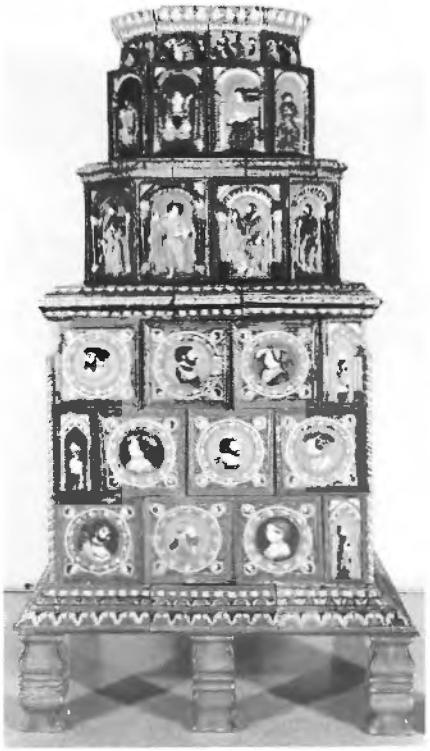
Some of the notable treatments and scientific projects carried out at CCI over the past 20 years

Hafner Ceramic Tile Stove

A 16th-century Hafner ceramic tile stove from central Europe was treated in preparation for exhibition in the newly constructed Koerner Gallery at the University of British Columbia Museum of Anthropology. The stove had been dismantled into 90 hard-fired clay tiles with glazed surfaces depicting portraits of ladies, gentlemen, and biblical figures.

The only known photograph of the stove before the dismantling showed that 15 tiles were missing. Approximately half of the existing tiles required extensive conservation treatment. The tiles were cleaned, breaks were repaired, and losses were filled. Molds were made of several tiles to cast fills for major losses or to construct replica tiles. Exterior surfaces were painted to match existing tiles.



A mounting system was devised that allowed the stove to be assembled and dismantled without damage to the tiles. The three-tiered stove was gradually assembled on a mount of steel and plywood. Each tile was supported by an inner framework that was individually secured to the mount.

Once the stove was assembled, the tiles — with inner frames intact — and the mount were packed and shipped to the museum for reassembly by conservators from CCI. At that time, a fill material was placed between the tiles to imitate the original mortar.

Sally Grant

In 1845, a new court house and jail was built in Brockville, Ontario, that included a large statue of Justice, affectionately dubbed "Sally Grant", standing on the roof. In 1956, county officials found that Canada's inclement weather conditions had taken their toll on the statue, and Sally Grant was removed, still in relatively good condition. After several years in storage, she was installed in the Rideau District Museum, where it became apparent that she required urgent conservation treatment.

The statue arrived at CCI in 1977 in an advanced state of deterioration. It had suffered from structural losses far more during the twenty years after its removal than it had during an entire century atop the courthouse. At some point during its storage, the lower three feet had been removed with a chain saw so that it could stand upright in an area with an eight-foot ceiling. Many other areas, including part of the right arm, the sword, the left chest, and the waist, were missing.

Deliberation and discussion took place involving conservators from various CCI laboratories. It was finally decided that, from both a structural and an aesthetic point of view, Sally Grant should be restored. Rotted sections were consolidated, and a steel armature was assembled inside the structure to provide sufficient strength to hold the sculpture together. All the missing areas, including the base, were replaced. Photos taken in the 1950s at the time of her removal were used as guides to Sally's original appearance. Inpainting was toned to suit the coat of aluminum paint that had been applied to the sculpture at some point in the past.

After completion, Sally Grant was returned to the museum, standing as proud as the day she was first placed atop the Brockville courthouse.

Treatment of *Descent from the Cross*

In 1860, Antoine Plamondon painted *Descent from the Cross* on commission for La Paroisse St. Thomas, Memramcook, New Brunswick. The painting, measuring 240.5 cm by 347.5 cm, is actually a copy

after the slightly larger original, painted in 1612 by Peter Paul Rubens, that forms the centre piece of a triptych in the Cathedral of Antwerp. Plamondon's version eventually found its way into the collection of the Musée acadien, Université de Moncton. The painting arrived for treatment at CCI in 1983.

The painting had been stored in a rolled state for many years, and suffered from numerous small creases, abrasions, and paint losses throughout. Due to its large format and resulting susceptibility to mechanically and environmentally caused damage, conservators lined the painting onto polyester fabric, and subsequently marouflaged it onto an aluminum honeycomb panel. Surface films of grime and discoloured varnish were removed, losses were filled and inpainted, and a new varnish coat was applied.

The documentation and examination of this painting prior to and during its treatment shed much light on Plamondon's materials and technique. The painting was returned to the Université de Moncton in August 1984.

Environmental Monitoring Loan Program

The Canadian Conservation Institute has operated the Environmental Monitoring Loan Program since 1979. At that time, it was affiliated with the Mobile Lab Programme; now it is run from the Environment and Deterioration Research Section of CCI. Environmental Monitoring Kits and hygrothermographs have travelled from Axel Heiberg Island in the North to Canada's farthest shores. They have provided information about the environment in such places as historic houses, archives, museums, and art galleries. The Kit is composed of instruments that measure ultraviolet radiation, visible light, temperature, and relative humidity. While the instruments in the Kit do not record, the hygrothermograph does, and it gives a permanent record of the relative humidity and temperature over a time period of a week or a month. This special equipment has enabled hundreds of institutions to record their environment and to provide proper conditions for the collections in their care.

Scientific Examinations of Works of Art

In the past twenty years, the Analytical Research Services Section has undertaken 46 major scientific examination studies on works of art and artifacts. These studies assist curators and conservators with questions on the provenance, age, and underlying compositional changes of an object to assess the artist's materials and technique. The examinations have included paintings attributed to such artists as Degas, Rubens, Rembrandt, Hobbema, Bosch, van Orley, Cranach, Goya, Thomson, Carr, Milne, Krieghoff, and Jackson; ethnographic objects such as West Coast masks, trade silver, and coins; archaeological collections; and an early map of North America. In addition, the Laboratory has assisted police agencies with several major art fraud investigations.

Rock Art Conservation Research

The first project undertaken by CCI in 1972 was an investigation into the causes of deterioration of rock paintings and petroglyphs found along the shorelines of lakes in the Canadian Shield and on cliffs, boulders, and bedrock in many other parts of Canada. We were initially encouraged by the pioneering work of Selwyn Dewdney and others in the Canadian and international rock art research communities who were trying to understand the significance of rock art.

Using x-ray diffraction and microanalysis, we were able to unravel for the first time the way in which red ochre pigment is bound to granite by natural weathering processes. Since little can be done to prevent the ultimate decay of rock art by lichens, algae, frost, and vandalism, we are also helping to develop methods to record rock art for posterity. At Petroglyphs Provincial Park, Ontario, we collaborated on a project that led to the design and construction of a special building to protect the petroglyphs. CCI also assisted in recording the pictographs near the Churchill River in northern Manitoba.

Rock art conservation field work means working at all times of the year, day and night, in all kinds of weather, and reaching sites distant from our Ottawa base by jet, seaplane, foot, canoe, or snowmobile.

Le Drapeau de Carillon

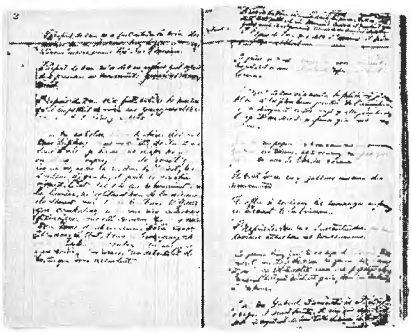
In 1987, CCI's Textile Laboratory began treating the important Carillon banner, belonging to the Musée du Séminaire de Québec. Although the banner was very deteriorated and posed considerable conservation problems, the importance of the banner to Quebec convinced conservators that a treatment had to be attempted to safeguard the fragmented remains of this document of Canada's history.

The Drapeau de Carillon is, according to popular Quebec legend, the banner carried in 1758 by the Canadian militiamen at the battle of Carillon. The battle took place on July 8, 1758, and was the last great victory of the Marquis de Montcalm over the English. The banner was lost for some time, only to surface again in 1848. It was carried from then on in Saint-Jean-Baptiste parades. The Carillon banner became a national symbol, and remains one of the most important icons of Quebec. In 1946, it inspired the design of the Quebec provincial flag.

The banner measures 210 cm by 300 cm. It is made of silk and is painted on both sides. Originally, the front of the banner depicted the Virgin Mary standing on a half moon above the crest of the Marquis de Beauharnois. The corners were ornamented with four fleurs-de-lys. The reverse was decorated with a crest and, above it, the royal French crown. The four corners again showed the fleurs-de-lys.

Only 25% of each original painted picture remained. One side of the banner was obscured with a backing that had been adhered to it to support its fragmented condition; this backing has now been removed. The banner has been cleaned, and the fragmented parts have been aligned and flattened. The banner is now being secured for display onto a rigid support. We hope to return the treated Carillon banner to the museum by December 1992.

Louis Riel's Batoche Diary



Louis Riel's Batoche diary, kept during the North West Rebellion of 1885, was treated at CCI from November 1984 to February 1985. Treatment decisions for this important book were made to preserve the unique character of the diary as an historic artifact.

The diary was disbound, its pages were treated individually, and it was rebound to match its original appearance. However, structural improvements were incorporated. Concertina guards were sewn around each section to protect the binding edge of the pages. A spring-back spine was constructed to fit the original spine shape so that the book would lie open easily. The volume was bound in medium-brown calf to match the original leather. The original end papers, leather, and cloth sides were removed, reinforced, and reapplied to the new boards.

The conserved diary was returned in a stronger condition, yet retained an appearance Riel would have known. When Ian Wilson, Provincial Archivist of the Saskatchewan Archives Board, was presented with the diary in November 1984, he described it as "an emotional document, transcending simply the factual record, conveying in a very immediate way the thoughts and prayers of Louis Riel."

BCIN and the Library

In January of 1986, librarians from CCI met with Ann Marie Juwah of the Canadian Heritage Information Network to discuss transferring data in the library's "reprint file," which then listed 8000 journal articles related to conservation and conservation research, from a manual card file to an on-line database. The data became CCI's contribution to the international bibliographic database of the Conservation Information Network (BCIN), which was released by the Getty Conservation Institute in September 1987.

Since then, CCI librarians have cleaned up CCI's bibliographic data, have written abstracts to add to our records, and have participated in BCIN Content Review Board meetings to develop and revise a data dictionary. Because this work has been done with five international partners, it has been a challenge!

This continues to be an exciting project. There are now some 120,000 bibliographic records in BCIN, easily accessible by subject, author, and title at the press of a few keys. CCI now has over 10,000 records on BCIN, and soon will have the library's entire book collection available online. It certainly is an improvement over manually searching an entire library!

Haida Rain Hat

In 1979, the Ethnology Section undertook the conservation of a badly damaged "rain hat". The hat had been acquired in 1899 from the Haida Tribe of the Queen Charlotte Islands, British Columbia, and is in the collection of the Canadian Museum of Civilization.

The hat was made of woven strips of spruce root. It was badly distorted and brittle, and had many splits and a few areas of loss. The longer splits had been poorly repaired in the past by stitching with black cotton thread. The stitching had, in fact, hastened the deterioration of the hat by further weakening brittle areas adjacent to the splits.

Repairing the hat was a lengthy and technically demanding process. First, the cotton stitching was removed. Deformed areas of the spruce root were softened by applying water and/or steam, and were then clamped in their original positions. Fortunately, the painted surface was stable and was not affected by moisture. To strengthen the hat, missing areas were rewoven using rattan and dyed paper strips. A perfect match was not desired; this ensured that future generations of historians and curators could differentiate between the original hat and any restorations. Finally, a mount for the interior of the hat was constructed to provide long-term support.

Waterlogged Wood

In the early 1970s, archaeologists were becoming more interested in the "new" field of wet-site archaeology, and pioneering work in underwater archaeology was being carried out in many countries. It seemed probable that CCI would be requested to treat large quantities of wood and perhaps even a shipwreck. How were we to treat these large objects?

Freeze-drying was found to be one of the more successful processes. It is normally carried out under a vacuum in a purpose-built freeze-dryer, but the cost of the commercially available equipment is prohibitive for large timbers. Canada's cold, dry winter climate provides a ready-made natural freeze-dryer, so we decided to investigate this possibility for waterlogged wood. During the winters of 1977 to 1980, we investigated the technique in detail; we tried various geographic locations, and looked at the effects of size and pre-treatment. During 1980-81, the work culminated in the successful freeze-drying of a waterlogged dug-out canoe. Since that time, the technique has been used in Quebec to treat some shipwrecks, and it has also been tested by the Australians in Antarctica.

Cleaning Silver

Almost every museum collection includes silver, which presents a significant cleaning and maintenance problem. While many commercial products are available for cleaning silver, no information existed on how they work or on how conservators should go about choosing between them. This project was undertaken to address these problems.

A wide range of commercially available silver-cleaning products were evaluated using analytical methods. Volunteer polishers from CCI further tested fourteen of the least aggressive products, identified from the analytical test results, by cleaning tarnished sterling silver forks and spoons. Other staff members contributed information gained from practical experience working with silver. The results of this project are summarized in the following publications: *Silver — Care and Tarnish Removal*, CCI Notes 9/7 [forthcoming]; "Historical Silver: Storage, Display, and Tarnish Removal," *Journal of the International Institute for Conservation — Canadian Group (J. IIC-CG)*, vol. 15, 1990, pp. 13-23; and "Evaluation of Silver-Cleaning Products," forthcoming in *J. IIC-CG*. These results should provide museum staff with enough information to make informed decisions about how best to approach the cleaning of silver objects.

Treatment of *Birds of America*

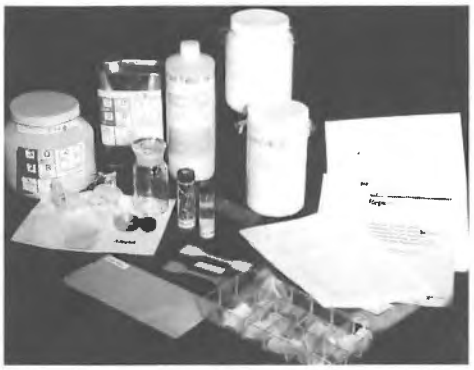
The conservation treatment of the Double Elephant folio edition of John James Audubon's *Birds of America*, belonging to the Legislative Library of New Brunswick, has been an on-going project in the Paper Laboratory since 1980.

Audubon's *Birds of America*, reproduced after the original drawings, was published between 1827 and 1838. Approximately 200 sets consisting of 435 intaglio, hand-coloured plates were printed; fewer than 134 sets are known to exist today. The plates were bound in four volumes.

The conservation approach taken at CCI involves disbinding and treating the plates, guarding and interleaving each one, and re-binding them in a spring-back library-style binding constructed from conservation-quality materials. The original binding is treated and, along with the newly bound volumes, is protected in individual Solander boxes.

The work on *Birds of America* has resulted in the evolution of a treatment that incorporates significant improvements to conservation techniques and materials. Areas of loss on the plates are infilled with paper, manufactured in the lab on the Vinyector leaf-casting machine, that closely matches the Audubon plates. Another significant treatment innovation is the use of an enzyme poultice to reduce adhesive residues on the plates.

Adhesives Research



CCI has been involved in adhesives testing since 1978. The yellowing of Epoxy Resins was studied first. This research identified two epoxy products, Hxtal NYL-1 and Epo Tek 301-2, as the most resistant to yellowing; these are being recommended for glass repair. Since 1983, CCI has been evaluating 27 poly(vinyl acetate) and 25 acrylic adhesives for use in all areas of conservation. The adhesives have been monitored for pH, emission of harmful volatiles, flexibility, strength, and yellowing for about five years under light and dark aging. The testing is now complete, and the most suitable and stable products are being identified. A full report on the project will be available in the fall of 1992, in time for CCI's 20th anniversary celebrations.

To further serve our clients, CCI answers many adhesives-related questions every year. The conservation community is encouraged to contact CCI about any concerns regarding adhesives.

Lucy Maud Montgomery's Wedding Dress

During the winter of 1985-86, CCI's Textile Laboratory treated Lucy Maud Montgomery's wedding dress. Her many novels, but especially her story of Anne of Green Gables, have made Montgomery Prince Edward Island's most famous personage.

Montgomery married the Reverend Ewen McDonald, a Presbyterian minister, on July 5, 1911, at Park Corner, Prince Edward Island. Lucy Maud's wedding dress was made of five different silk fabrics. It had a long, slender silhouette with a narrow skirt, a raised waistline, a bodice of lace and net, a high neck, and a tunic overdress — the height of fashion in 1911.

With it, she wore a long, silk tulle veil decorated with orange leaves and blossoms. Her ivory satin shoes were made by Bally.

When the dress arrived at CCI, it was very dusty and dirty, and the silks, especially the lace, were most fragile. The cellulose nitrate stays had degraded and had stained the collar. There were tears in the dress and in the veil. Both were wet cleaned, and all weak and torn areas were backed and stitched to appropriate silk fabrics.

The dress was returned to P.E.I. courtesy of Air Canada, accompanied by a CCI textile conservator, in the spring of 1986. It is on display each summer at New London, P.E.I.

Analytical Services and Materials Research

The Analytical Research Services (ARS) Section has conducted a wide variety of scientific analyses, and has undertaken significant analytical development and materials research projects. To date, ARS staff have responded to 3200 general analytical services requests for clients across Canada. We have collaborated with colleagues from international museums in preparing manuscripts on the pigments Lead Antimony Yellow (Naples Yellow) and Titanium White, which were included in the four-volume series *Artists' Pigments*, published by the National Gallery of Art in Washington, DC. The Native Materials Reference Collection Project ran from 1984 to 1989, and created a data bank of analytical information on 1350 paint samples of Native artifacts from all areas of Canada. Analyses of over 700 commercial products used in conservation have been made available through the Commercial Product Analytical Reports database. Research on the development of new techniques is in progress: for example, using shrinkage temperature to assess the deterioration of collagen; investigating techniques to analyze media; and developing a 3-D laser scanner system with the National Research Council of Canada.

Basque Whaling Station at Red Bay

In the summer of 1978, CCI received a call from Dr. James A. Tuck, an archaeologist working for Memorial University of Newfoundland. Dr. Tuck had started test excavations of a 16th-century Basque whaling station located at Red Bay, Labrador. He was finding an interesting variety of material preserved in the cold, wet burial environment characteristic of coastal Labrador, and he realized that he would need assistance in order to conserve the artifacts for research and for eventual display. CCI sent a conservator to the site to assess the conditions and to bring back facts that would allow us to develop a conservation plan for the site.

Over the next eleven years, CCI was actively involved in the archaeology at Red Bay. The benefits that all parties derived from this cooperative venture included training numerous students in archaeological conservation, developing conservation strategies that can be applied to the problems typical of Canadian sites, and initiating research into the conservation of various materials. Lastly, but most importantly, the people of Red Bay have gained an appreciation of their heritage by actively participating in all stages of the project.

The Red Bay site is slated to become one of Canada's newest national historic parks.

Treatment of *Vellut Granate*

Vellut Granate is a mixed media painting that was executed in 1963 by well-known Catalan artist Antoni Tápies. The prepared canvas surface is selectively painted and covered with a felt material. The felt is adhered to a layer of marble dust that the artist mixed with calcium carbonate and a synthetic adhesive.

The canvas of the painting inadequately supports the weight of the material on its surface. As a result, the felt-covered panels had become severely detached from the canvas. Exposed edges of marble dust were extremely brittle and had begun to disintegrate.

The painting came to CCI for treatment after being assessed during an in-situ visit at the Musée d'art contemporain de Montréal. It was hoped that CCI could develop a treatment to halt the deterioration that threatened the aesthetic and structural integrity of the work.

Exchanges of information between CCI conservators and scientists, the artist (who was contacted in Barcelona, Spain), and a Barcelona conservator revealed new information concerning Tápies's working techniques. A Spanish industrial firm helped confirm the composition of the artist's materials. The painting was successfully treated and was returned to Montreal eight months later.

Several other paintings by Antoni Tápies from this period have exhibited similar deterioration. The information gathered at CCI during the treatment of *Vellut Granate* has therefore been of interest to conservators throughout North America.

Enzyme Research

Enzymes are useful in carrying out many conservation treatments on paper, for example, for removing adhesives or coatings from objects. Selecting appropriate commercial amylases (enzymes that break down starch) and proteases (enzymes that break down proteins) can be difficult because of the lack of information concerning the purity and working characteristics — solution pH, temperature, and enzyme concentration — of specific products. CCI has done extensive research to characterize a wide variety of commercial amylases and proteases in terms of their properties and effects on the permanence of the paper substrate.

The purer the enzyme, the less likely it is that there will be problems during conservation treatments. It is therefore useful to know if there are different proteins in a preparation. Electrophoresis is one of the simplest and most accurate procedures for determining enzyme purity. In this method, complex mixtures of proteins are separated by placing them on a polyacrylamide gel in an electric field. Individual proteins travel at rates corresponding to their size and charge, and the constituent proteins in a preparation are resolved into individual bands. The data from these analyses are an important part of the recommendations CCI gives to conservators who wish to use enzymes for cleaning artifacts.

Internships and Fellowships

In response to the diverse training requirements of the conservation community in Canada and abroad, the Canadian Conservation Institute offers Internship and Fellowship programs.

Internships are classified according to need, and comprise four distinct categories: curriculum internships, specialized technique internships, professional development internships, and conservation research internships.

The Fellowship program encompasses work in designated laboratories at CCI, as well as participation in CCI services to museums, galleries, and related institutions and associations throughout Canada (e.g., workshops, surveys).

The following individuals have recently participated or are currently involved in one of these programs at CCI.

Internships

Beate M. Kneppel, Student, Fachhochschule Köln, Köln, Germany. March 2 to August 31, 1992. (Textiles Section)

Michael G. Beddoes, Student, Cultural Resource Management Program, University of Victoria, Victoria, B.C. April 1 to July 31, 1992. (Ethnology Section)

Laura K. Wardlaw, Student, Art Conservation Programme, Queen's University, Kingston, Ontario. June 1 to August 21, 1992. (Archaeology Section)

Klaus T. Martius, Conservator of Musical Instruments, German National Museum, Nurenburg, Germany. August 4 to August 28, 1992. (Ethnology Section)

Fellowships

Fiona Graham, graduate of the Masters program in Art Conservation (Artifacts), Queen's University, Kingston, Ontario. Fiona recently worked as a Conservator on contract at the Centre de conservation du Québec (CCQ), Quebec. April 1, 1992 to March 31, 1993. (Ethnology Section)

Eleonora Nagy, graduate of the Masters program in Art Conservation (Artifacts), Queen's University, Kingston, Ontario. Before coming to CCI, Eleonora worked on contract as a Conservator at the Centre de conservation du Québec (CCQ), Quebec. April 1, 1992 to March 31, 1993. (Furniture and Wooden Objects Section)

Joan Marshall, student in the M.Sc. program in Textiles Conservation at the University of Alberta. Joan's thesis research is on identifying bast fibres using chemical tests and microscopy. April 16, 1992 to March 31, 1993. (Textiles Section)

Elizabeth **Czerwinski**, graduate of the Masters program in Art Conservation (Artifacts), Queen's University, Kingston, Ontario. Elizabeth recently completed a Conservation Internship at the Centre de Recherches Archéologiques — Centre National de la Recherche Scientifique, Draguignan, France. May 1, 1992 to March 31, 1993. (Archaeology Section)

Kathleen Helwig, graduate of the Masters program in Art Conservation (Artifacts), Queen's University, Kingston, Ontario. Kathleen has an M.Sc. in Chemistry from Stanford University, Stanford, California. May 19, 1992 to March 31, 1993. (Analytical Research Services)

Robyn Douglas, graduate of the Masters program in Art Conservation (Paper Objects), Queen's University, Kingston, Ontario. Before coming to CCI, Robyn completed a Mellon Conservation Fellowship at the Museum of Modern Art, New York, New York. July 1, 1992 to March 31, 1993. (Works on Paper Section)

Susan Walker, graduate of the Masters program in Art Conservation (Paintings and Painted Objects), Queen's University, Kingston, Ontario. Susan recently completed a Postgraduate Internship in Contemporary Art at the National Gallery of Canada, Ottawa. August 4, 1992 to March 31, 1993. (Fine Arts Section)

Upcoming Training Presentations

The following CCI training presentations are scheduled for the remainder of 1992 and early 1993. Times and places are subject to change. Please contact the appropriate provincial museums association to register or to confirm dates and locations for specific seminars.

September 1992

Saskatchewan
(Museums Association of Saskatchewan)
"Care of Machinery Collections"
Date: September 18-19
Place: Western Development Museum, Moose Jaw, Saskatchewan

October 1992

Ontario
(Ontario Museum Association)
"Care of Furniture and Wooden Objects"
Date: October 15-16
(Rescheduled from 1991-92)
Place: Heritage House Museum, Smiths Falls, Ontario

Nova Scotia
(Federation of Nova Scotian Heritage)
"Care, Cleaning and Basic Repair of Ceramic and Glass Objects"
Date: To be announced
Place: To be announced

Northwest Territories
(Prince of Wales Northern Heritage Centre)
"Guidelines for Selecting Materials for Use in the Display, Storage, and Transportation of Museum Objects"
Date: To be announced
Place: Prince of Wales Northern Heritage Centre, Yellowknife, N.W.T.

November 1992

Ontario (Ontario Museum Association)
OMA Artifacts Course
Date: November 4-6
Place: Woodstock Museum, Woodstock, Ontario

Ontario
(Ontario Museum Association)
"Care of Machinery Collections"
Date: November 16-17
Place: Hamilton Museum of Steam and Technology, Hamilton, Ontario

Alberta
(Alberta Museums Association)
Specialized Conservation Workshops (Combined)
"Rates of Light and UV Damage" and "RH Fluctuations and Wooden Artifacts"
Date: November 17-19
Place: Provincial Museum of Alberta, Edmonton, Alberta

New Brunswick
(Association Museums New Brunswick Inc.)
"Mise en réserve et exposition des textiles"
Date: November 27-28
Place: Atlantic Host Inn, Bathurst, N.B.

Prince Edward Island
(Community Museums Association of P.E.I.)
"The Permanence of Artists' Materials and Techniques"
Date: To be announced
Place: Confederation Centre Art Gallery and Museum, Charlottetown, P.E.I.

January 1993

Saskatchewan
(Museums Association of Saskatchewan)
"A Framework for Preventive Conservation"
Date: January 14-15
Place: Saskatoon, Saskatchewan

Yukon
(Heritage Branch, Department of Tourism)
"A Framework for Preventive Conservation"
Date: January 18-19
Place: MacBride Museum, Whitehorse, Yukon

New Brunswick
(Association Museums New Brunswick Inc.)
"Storage and Display of Textiles"
Date: January 21-22
Place: Moncton, N.B.

February 1993

Quebec
(Société des musées québécois)
"Conservation et enregistrement de l'art rupestre"
Date: To be announced
Place: Université Laval, Quebec City, Quebec

Manitoba
(Association of Manitoba Museums)
"Aménagement des réserves"
Date: February 11-12
Place: Winnipeg, Manitoba

March 1993

Northwest Territories
(Prince of Wales Northern Heritage Centre)
"Treatment of Wet Organic Archaeological Materials"
Date: To be announced
Place: Prince of Wales Northern Heritage Centre, Yellowknife, N.W.T.

Manitoba
(Association of Manitoba Museums)
"Care of Works of Art on Paper"
Date: To be announced
Place: To be announced

Spring 1993

Nova Scotia
(Federation of Nova Scotian Heritage)
"Emergency and Disaster Preparedness for Museums"
Date: To be announced
Place: To be announced

CCI Services: Seminars, Lectures, Workshops, and Visits

To respond to specific needs within the museum community, CCI offers, in co-operation with provincial museum and art gallery associations, 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.

February 1992

Gregory Young visited the National Institute for the Conservation of Cultural Property, in Washington, DC, to participate in a project on the conservation and preservation of natural science collections. Greg also travelled to Kingston, Ontario, where he presented a talk on Recent Developments in Analytical Techniques for Fibrous Proteins to the students and faculty of the Art Conservation Programme, Queen's University, as part of the program's Invited Lecturer Series.

Laura Nagora presented a two-day gilding workshop for students of the Art Conservation Programme, Queen's University, Kingston, Ontario.

Tom Stone, Deborah Stewart, Peter Vogel, and **David Tremain** participated in a collection survey at the Assembly of First Nations in Ottawa. They prepared a report advising on the future care and conservation needs of the artifacts and works of art in this collection.

Carolyn Leckie visited the Royal British Columbia Museum and the University of British Columbia Museum of Anthropology to assess their natural history collections and to consult with staff on the conservation needs of the artifacts.

David Grattan gave a course on the treatment and conservation of waterlogged wood for the Israel Antiquities Authority in Jerusalem, Israel.

Cliff McCawley chaired a meeting of the Directory Board of the ICOM Committee for Conservation at the Central Research Laboratory in Amsterdam.

Seminar

"The Permanence of Artists' Materials and Techniques"
Leslie Carlyle and Wanda McWilliams for the Winnipeg Art Gallery,
Winnipeg, Manitoba.

March 1992

Marie-Claude Corbeil visited the Centre de conservation du Québec to take samples from the Sacré-Coeur retable in the Ursulines Chapel. Marie-Claude will document the current state of the artifact, and will consult on its conservation treatment.

John Taylor took a panel painting of unknown date and origin to the Centre d'études nordiques at the Université Laval in Quebec for a dendrochronological (tree ring dating) examination.

Tom Stone and **Carl Schlichting** undertook a two-day survey in Haliburton and Lakefield, Ontario, of storage areas belonging to the Canadian Canoe Museum.

Malcolm Bilz visited two elementary schools, in Perth and Lanark, Ontario, where he presented a slide show and talk about CCI's work on the Axel Heiberg Island "fossil forest" and on the 1845 John Franklin expedition gravesite.

Gaelen Gordon and **Beate Kneppel** assisted Eva Burnham in preparing textiles for the opening of the McCord Museum of Canadian History, Montreal, Quebec.

Seminars

"Artifact Mounting Workshop"
Bob Barclay and Todd Vassello for the Newfoundland Museum,
St. John's, Newfoundland.

"Care of Books and Archival Materials"
David Tremain and Claire Titus for the Glenbow Museum,
Calgary, Alberta.

"A Framework for Preventive Conservation"
Tom Strang and Paul Marcon for the Dartmouth Heritage Museum,
Dartmouth, Nova Scotia.

April 1992

Leslie Carlyle presented the paper "Authenticity and Adulteration: What Materials Were Nineteenth-Century Artists Really Using?" at the Gerry Hedley Memorial Forum held at Queen's University, Kingston, Ontario.

David Hanington presented a poster session on the conservation treatment of an oversize *Map of Five Counties*, belonging to the Chesterville & District Historical Society, at the Institute of Paper Conservation conference held at the Institute of Science and Technology, University of Manchester, Manchester, England.

Bob Barclay, Michael Beddoes, and **David Grattan** visited the Marine Museum of the Great Lakes at Kingston, Kingston, Ontario, to examine the remains of a once-waterlogged wooden vessel dating from the early 19th century.

Deborah Stewart and **Phil White** (of the Canadian War Museum) responded to an emergency situation at the Calgary Police Service Museum, Calgary, Alberta, where approximately 300 firearms and other items had suffered water damage.

Helen Burgess attended the Institute of Paper Conservation conference held at the Institute of Science and Technology, University of Manchester, Manchester, England, and delivered a lecture entitled "Deposition of Magnesium and Calcium into Seven Papers Treated with Aqueous Solutions of Calcium and Magnesium Compounds."

Gregory Young presented a paper, "Loss of Infrared Linear Dichroism in Collagen Fibres as a Measure of Deterioration in Skin and Semi-Tanned Leather Artifacts," at the Materials Research Society meeting in San Francisco, California.

David Tremain presented a paper on "Practical Actions to Begin Recovery of Damaged Collections" at a conference on Emergency Planning for Cultural Institutions, sponsored by the Regional Council of Historical Agencies, at the Strong Museum, Rochester, New York.

David Miller travelled to the Centre de conservation du Québec to examine a Borduas painting as part of an ongoing study of problems associated with that artist's paints.

Seminar

"L'éclairage dans les musées"
Charles Costain for the Musée de la Civilisation,
Quebec City, Quebec.

May 1992

Carl Schlichting was co-organizer of the International Institute for Conservation — Canadian Group pre-conference workshop, "Standard Threads: Industrial Collections Preservation," held at the National Museum of Science and Technology, Ottawa. **Lyndsie Selwyn** gave a lecture on "Corrosion Dynamics" at the workshop, and **Nancy Binnie** presented a two-morning table-top display of rust converter products that had undergone outdoor weathering.

Several CCI staff members participated in the International Institute for Conservation — Canadian Group conference held in Ottawa, and presented the following papers: "Gas Chromatographic Analysis of Paint Media with Applications to Works by Canadian Artists" **(David Miller)**; "The 3-D Laser Scanner: A New Tool in Conservation for the Recording, Study and Replication of Works of Art" **(John Taylor** and **Réjean Baribeau)**; "A Scientific Study of *The Tribute Money*, Attributed to Rembrandt" **(Ian Wainwright)**; "The Conservation and Regilding of an English Pier Table" **(Laura Nagora)**; "Corrosion Protection of Outdoor Iron Artifacts Using Rust Converters: Evaluation of Nine Commercial Products" **(Lyndsie Selwyn, Nancy Binnie**, and **Carl Schlichting)**; "Conservation of a Beaded Dress" **(Janet Wagner)**; "Evaluation of Commercial Mass-Deacidification Processes — Part I: Naturally Aged Papers" **(Helen Burgess)**; "CCI Cushion Design Calculator" **(Paul Marcon)**.

Carl Schlichting presented a workshop on Museum Mounting of Natural Science Specimens, and **Stefan Michalski** and **Tom Strang** presented training sessions on Preventive Conservation, Pest Control, and Monitoring the Environment, at the International Symposium and World Congress on the Preservation and Conservation of Natural History Collections, Madrid, Spain.

Leslie Carlyle presented the paper "From Dead-Colouring to Finishing: British Nineteenth-Century Oil Paint Application as Discussed in Contemporary Oil Painting Instruction Books" at the conference "The Articulate Surface: Dialogues on Paintings Between Conservators, Curators and Art Historians," held at the Australian National Gallery in Canberra, Australia. Dr. Carlyle also presented papers on topics relating to nineteenth-century artists' materials at the Museum of Contemporary Art, the University of Sydney, and the University of Melbourne.

Season Tse presented a lecture on "Research and Preservation of Library Materials" to the Atlantic Provinces Library Association in Halifax, Nova Scotia.

David Grattan and **Helen Burgess** attended an *Art and Archaeology Technical Abstracts* (AATA) editors' meeting in New York City, New York.

Cliff McCawley visited the Getty Conservation Institute in Marina Del Rey, California, to consult with staff and to give a talk on the research program at CCI.

Mary Frame, a Pre-Columbian textile specialist, presented a four-day workshop at CCI on ancient Andean textiles. It included slide lectures, demonstrations, and hands-on tuition in spinning and fabric-making techniques. The fifteen participants represented major Canadian conservation facilities and institutions housing collections of Andean textiles.

Paul Marcon made presentations on "Shock and Vibration from Handling and Different Modes of Transport" and on "Shock Isolation and Vibration Control in Packing Cases" at the Art in Transit workshop organized by CCI, the Conservation Analytical Laboratory of the Smithsonian Institution, and the National Gallery of Art, in Washington, DC.

David Grattan advised on options for preserving the wood in the remains of the USS *Cairo* ironclad sternwheeler for the U.S. National Parks Service.

Seminar

"Care of Furniture and Wooden Objects"
Valerie Dorge and Eleonora Nagy for Emily Carr House, Victoria, B.C.

June 1992

Valerie Dorge presented a paper entitled "Using Photographic Reproductions to Replace Decorative Veneer Losses on a Small Sewing Box" at the American Institute of Conservation conference, Buffalo, New York.

Helen Burgess participated in a panel discussion on "Technical Studies in Support of Paper Conservation: A Dialogue Between Conservators and Scientists" at the American Institute of Conservation conference in Buffalo, New York.

Seminars

"Care of Machinery Collections"
Carl Schlichting for the Humber-Bay of Islands Museum,
Corner Brook, Newfoundland,
and the Orwell Corner Historic Village,
Orwell Corner, P.E.I.

"Opening and Closing a Seasonal Museum"
Deborah Stewart and Fiona Graham for the Fisherman's Museum, Salvage, Newfoundland.

"Storage and Display of Textiles"
Ela Keyserlingk and Esther Méthé for the Gore Bay Museum, Gore Bay, Manitoulan Island, Ontario.

July 1992

John Taylor and **Réjean Baribeau** attended the Electronic Imaging and the Visual Arts conference in London, England, and presented a paper on "Colour and Range Sensing for the Recording and Study of Museum Objects."

Seminars

"The Permanence of Artists' Materials and Techniques"
Leslie Carlyle and Wanda McWilliams for the Art Gallery of the South Okanagan, Penticton, B.C.

"Care of Books and Archival Materials"
Sherry Guild and Robyn Douglas for the Yukon Archives, Whitehorse, Yukon.

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