Communications Canada

Canadian Conservation Institute

Institut canadien de conservation

No. 7, March 1991
ISSN 1180-3223

Newsletter

Contents

Why Bicycle When You Can Recycle a Four-Cycle Motorcycle ?

by Sandra Steiman LaFortune

How would you like to have a 1990 two-seater sports car that costs only $1800 – and seven years of hard work? Well, that's exactly what Bob Barclay, Senior Conservator in CCI's Ethnology Section, has.

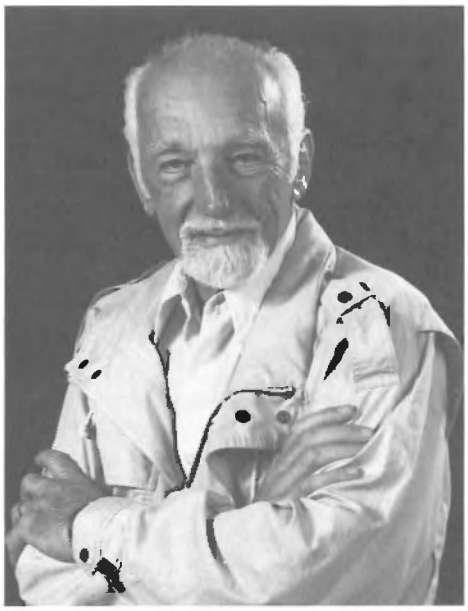
In the true spirit of recycling, Bob has built a sports car from bits and pieces he picked up in scrap yards and auto wreckers. The design of the car, whose license plate reads "VW BITS", is based on a photograph of a three-wheeled car that Bob saw in a magazine several years ago. The concept intrigued him, and Bob set to work in his basement and garage building his own car. Bob had no drawings or designs before he started on the car; it just sort of "grew like Topsy". The final product has four wheels and looks very little like the photograph that was its inspiration, but it is absolutely road worthy.

"VW BITS" has a four-cycle motorcycle engine in the rear, a hand clutch, no reverse gear, and weighs about 1000 pounds. About $5 of unleaded gasoline fills its tank and runs the car for approximately 150 kilometres. This is just Bob's estimate, of course, because "VW BITS" has no odometer or gas gauge, but since the car has only run out of gas twice (both times within pushing distance of a gas station), it is safe to say that Bob has become quite proficient at estimating. The automobile is fully street legal, and has been gracing the roads of Ottawa – and piquing the interest of other drivers – since August 1990.

Bob has no plans for adding to his fleet of recycled automobiles, and does not consider himself a threat to Jaguar or Ferrari. While he does not expect to make any money with "VW BITS", Bob figures he will probably save some; after all, if it breaks down at least he can fix it!•

Bob Barclay and "VW Bits"

Phil Ward



Phil Ward, Director of Information and Extension Services at CCI, retired on March 31, 1990. He made great contributions to CCI, to conservation, and to the Canadian museums community.

Introduction

by C. G. Gruchy

It was sometime in the mid-seventies when I first heard of Phil Ward, probably while I was doing some work on the fish collection at the (then) British Columbia Provincial Museum. His name kept cropping up in relation to various policies, and I remember reading a paper by Phil that Louis Lemieux, at that time the Director of the National Museum of Natural Sciences (now the Canadian Museum of Nature), sent around the museum. I conjured up in my mind the image of an intense, almost hyperactive, human dynamo with a mind like a steel trap who wouldn't deign to speak to a simple little curator like me. At a meeting concerning the formulation of a "disaster plan" for the museum, I sat directly opposite a quiet, gentle, smiling fellow who spent a lot of time stoking a pipe, who spoke only occasionally, but who made more sense than all the rest of us put together. Before the end of that meeting, I had figured out that this was Phil Ward, and my image of him, except for the trap-like mind, went into the garbage. We subsequently had occasion to work together on other committees, and my respect for Phil grew every time we met.

When I learned that I would be coming to CCI, I felt quite confident that Phil would keep me, if not on the straight and narrow, at least pointed in the right direction. I was in poor Phil's office so often during the first few weeks I was here that he probably thought I couldn't find my own. He gave me more good advice when I started than I could have hoped for, and he continued to feed me little gems throughout the time we were together at CCI. Phil wrote a great deal, and I will always treasure the clarity and logic that flowed from the nib of his pen. I soon learned that whenever Phil lumbered into my office, or hailed me as I passed his, with the query, "Have you got a minute, Chuck?", I was about to hear of my most recent faux pas in the most kindly way possible.

Phil continues to keep me more or less on the right path because I still try to anticipate how he would react to my latest scheme. I hope that there are many others in the museum community who do the same thing, because few of us are blessed with as much common sense as Phil or with the perspective that he has on the evolution of museums in this country.

by Dennis Alsford
(former Curator of Collections for Ethnology, Canadian Museum of Civilization)

But for the machinations of Adolph Hitler, the history of conservation in Canada might have taken a different course. Like many young men, Phil Ward exchanged his khaki uniform for a demob suit after peace broke out, and contemplated his future. But for World War II, he would no doubt have had a career in the City or have gone on to university, but fate had decreed otherwise. The war had interrupted his education and destroyed his opportunity to follow a normal life. It had altered his teenage ambitions and changed his view of what life was all about.

Phil opted for training as an art teacher, for art was his first love. But as a career, teaching somehow lacked appeal and jarred his sensitivities as a budding artist in his own right.

In 1955, Phil joined the staff of the British Museum as what was euphemistically called a Museum Assistant in the Department of Oriental Antiquities. Such worthies were what might be termed the lower-middle class of this august institution. As such, they were hidden from public view in convenient corners or basement rooms and only emerged periodically to Oxbridge graduates' loud hails of "Hey, you!", or in Phil's case, "Ward!". In fact, nobody knew that this clean-shaven, curly haired, smart young man with the measured tread had a forename, until he left for Canada eleven years later.

However, these were not wasted years. Phil developed a fine appreciation of Oriental art, spent long hours piecing together the ravages of a war-neglected collection, and studied conservation under the father of conservation, Dr. Harold Plenderleith, and the soon-to-be Director of the Conservation Laboratory of the Smithsonian Institution, Robert Organ. The Oxbridge "mob", blissfully unaware of the talent in their midst, took the almost unprecedented risk of shaking Phil's hand to bid him farewell as he departed for the colonies.

In 1966, Canada had numerous museums but no trained conservators in the field of cultural property. Philip Ward was a first for Canada, founding the Conservation Division of the British Columbia Provincial Museum (now the Royal British Columbia Museum), housed at that time in the makeshift facilities of a provincial government building. The conditions were typical of most museums of the day – cramped space, no environmental controls, in fact all the usual horrors. But the museum did have an eye to future expansion that would include adequate conservation facilities.

Phil's input into the development of the new museum proved to be a significant step in the future development of museums across Canada, and it is from these beginnings in a new country that he has become the father of conservation in Canada.

It is a sad fact that the earnings and influence of administrators outweigh those of practical people, and so it was toward administration that Phil turned his talents. Nevertheless, he combined his skills to best advantage for conservation, earning the recognition of his peers in the process.

Phil rekindled his training as a teacher to provide the first Canadian university course in conservation, at the University of Victoria, from 1970 to 1977. He directed totem pole preservation projects in British Columbia, and advised museums in Alaska, Washington state, Oregon, and Ottawa, Ontario. He was an active member of and influence upon the British Columbia and Canadian Museums Associations. Since the early 1970s, he has been an advisor and consultant to the Federal Government of Canada, with particular reference to museum conservation policy.

Appointed Director of Conservation Services at the Canadian Conservation Institute in 1977, Phil later became the Senior Conservation Advisor, and, in a 1989 reorganization of the Institute, the bureaucracy dreamt up the further title of Director of Information and Extension Services for him. He remained, however, Phil Ward, the conservator's conservator.

Ever aware of the tendancy of museums to ignore their raison d'être – the collections – Phil's charm, wit, good common sense, and practical approach have made significant contributions to the development of museums in Canada.

Always a good speaker with a great turn of phrase, Phil was also a prolific writer. His book *The Nature of Conservation: A Race Against Time* was published by ICOM and the Getty Conservation Institute in 1986, and has become a classic in its field.

Phil is a fellow of the Canadian Museums Association, the International Institute for Conservation, and the Royal Society of Arts.

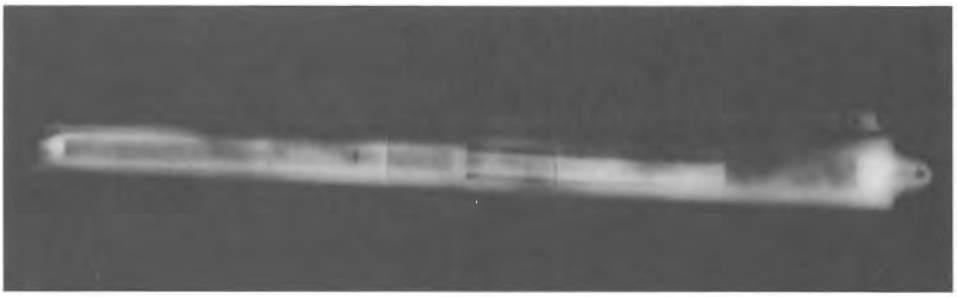
If Phil had been anointed King of Conservation, he would have been dubbed "Phil the Practical". Phil now resides in his small kingdom on Saltspring Island, British Columbia, where he may be seen clutching his emblems of office – an artist's brush in one hand and a telescope in the other – while surveying the local flora and fauna. Long Live the King!•

Freeing a Bomb Lance from the Bore of a Harpoon Gun

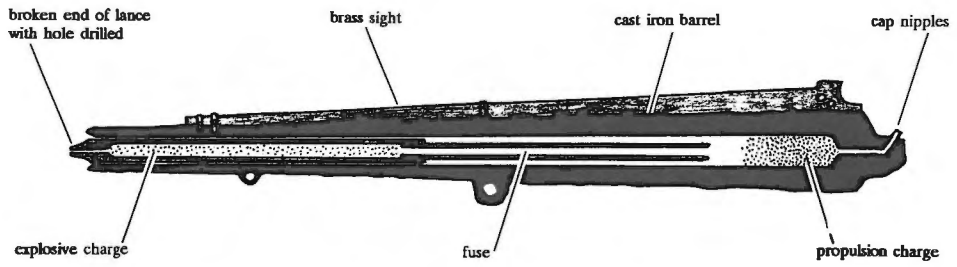
by Bob Barclay

A harpoon gun from the Prince of Wales Northern Heritage Centre in Yellowknife, Northwest Territories, was submitted for treatment to the Archaeology Section of CCI. The gun had been found under water at Cape Haven, and had belonged to the *Active*, a Dundee steam whaler that made several voyages to the Arctic between 1873 and 1914. On examination, there appeared to be a large metal obstruction in the bore. Radiographs revealed that the obstruction was cylindrical, in two sections of different diameters, and occupying most of the interior of the bore (Figure 1). Literature research showed the object to be a bomb lance – a harpoon with a slow fuse at the rear and an explosive head.

As the harpoon gun had been in sea water for many decades, the bomb lance was welded to the bore by corrosion. The decision to attempt removal was influenced by three factors: the corrosion could not be fully stabilized while the bore was obstructed; documentary and historic



Radiograph of the whaling gun showing the lance stuck in the bore.



Cross-sectional drawing of the barrel from the side.

information could be gleaned from the lance once it was removed; and both the lance and the breech of the gun still contained their explosive charges.

There were three possible approaches to freeing the lance. They were, in order of complexity, gripping the projecting end and pulling it free; loosening the corrosion products through electrolysis of the whole object; and inserting a hollow drill between the lance and the bore. Since this final treatment would mean sacrificing some material from the bore of the gun or from the outside surface of the lance, it was considered to be a technique of last resort.

In order to make the gun safer to work on, as much of the explosive charge as possible had to be flushed out, assuming that immersion in sea water had not already done so. A hole was drilled into the broken end of the lance with an extended 3/16" – diameter drill until it encountered the hollow interior of the bomb. At the other end, the cap nipples at the breech, where the explosive charge of the gun would be ignited, were cleaned with a wire. Water was then flushed through the breech, through the bomb, and out of the drilled hole using thin hoses attached to the nipples (Figure 2). Samples of the effluent that were collected and submitted for analysis showed traces of the constituents of black powder (sulphur, potassium nitrate, and charcoal).

To attempt removal of the lance by pulling, the hole drilled in the broken end was threaded with a 1/4" – 20 NC tap, and a bolt was inserted. However, no amount of pulling on this bolt had any effect on dislodging the lance.

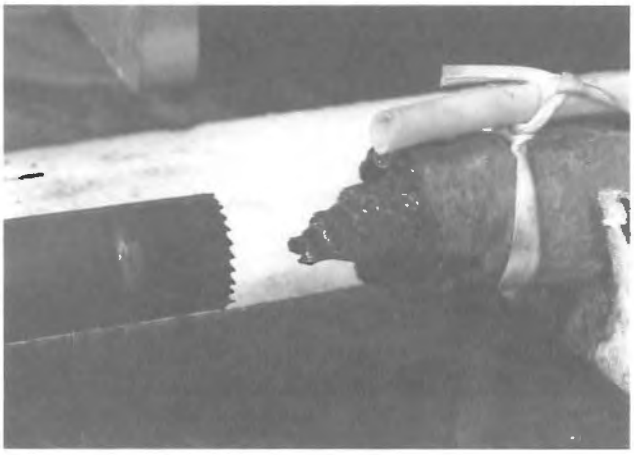
The gun was then immersed in tank of sodium hydroxide solution, and electrolysis treatment began. While the object was in the tank, a stream of brown substance emerged from the hole in the lance. Analysis showed this to be a resinous material, perhaps from the slow fuse, which was probably reacting with the sodium hydroxide. Electrolysis was stopped and the gun was washed and flushed out. The lance still held fast. Neutron radiography of the gun was conducted at the Atomic Energy of Canada Limited laboratories at Chalk River, Ontario, in the hope of confirming the presence and position of any organic material in the interior. Unfortunately, no details were visible on the resultant prints, perhaps due to interference from the water in which the gun had been submerged for so long.

Drastic treatment is always reserved as a last resort, but now all other options had been exhausted. A core drill was constructed from a standard 1½" hole saw welded to an 18" – long steel tube of the same diameter. This apparatus would produce an annulus of 1_" in overall diameter with a kerf of 1/16" (Figure 3). The drill was attached to a horizontally mounted drill press that had a speed control. The gun was mounted on a sliding wooden cradle and was lined up with the drill. A hose supplied cold water for cooling and lubrication, and drilling commenced at about 200 rpm (Figure 4). It was only possible to proceed in increments of about 1/4" before the drill became clogged and generated excess heat. Two days of incremental drilling (removing the drill for cooling and cleaning, and subsequently reinserting it) carried the drill to a depth of 9". At this point, the teeth of the hole saw began showing signs of wear. A new hole saw was welded into place, and drilling began again. A day later, at a depth of 12½", the lance loosened and was pulled out.

The bore of the gun remained remarkably intact, but a certain amount of material had been removed from the surface of the lance. In view of the anticipated problems had the lance been left in place, this was considered a necessary sacrifice.

Stabilization treatment of the gun and lance is now continuing, and when the treatment is completed, it will be displayed in the Nunatta Sunaqutangit Museum in Iqaluit, Northwest Territories.•

Drilling in progress. The speed controller at bottom left kept the drill bit rotating at about 200 rpm.



Close-up of the hollow drill used for freeing the lance. Also visible are the muzzle of the gun, the broken end of the lance, and the water hose used for cooling and lubrication.

Special Cases for Special Cases: Paintings

by Helen McKay

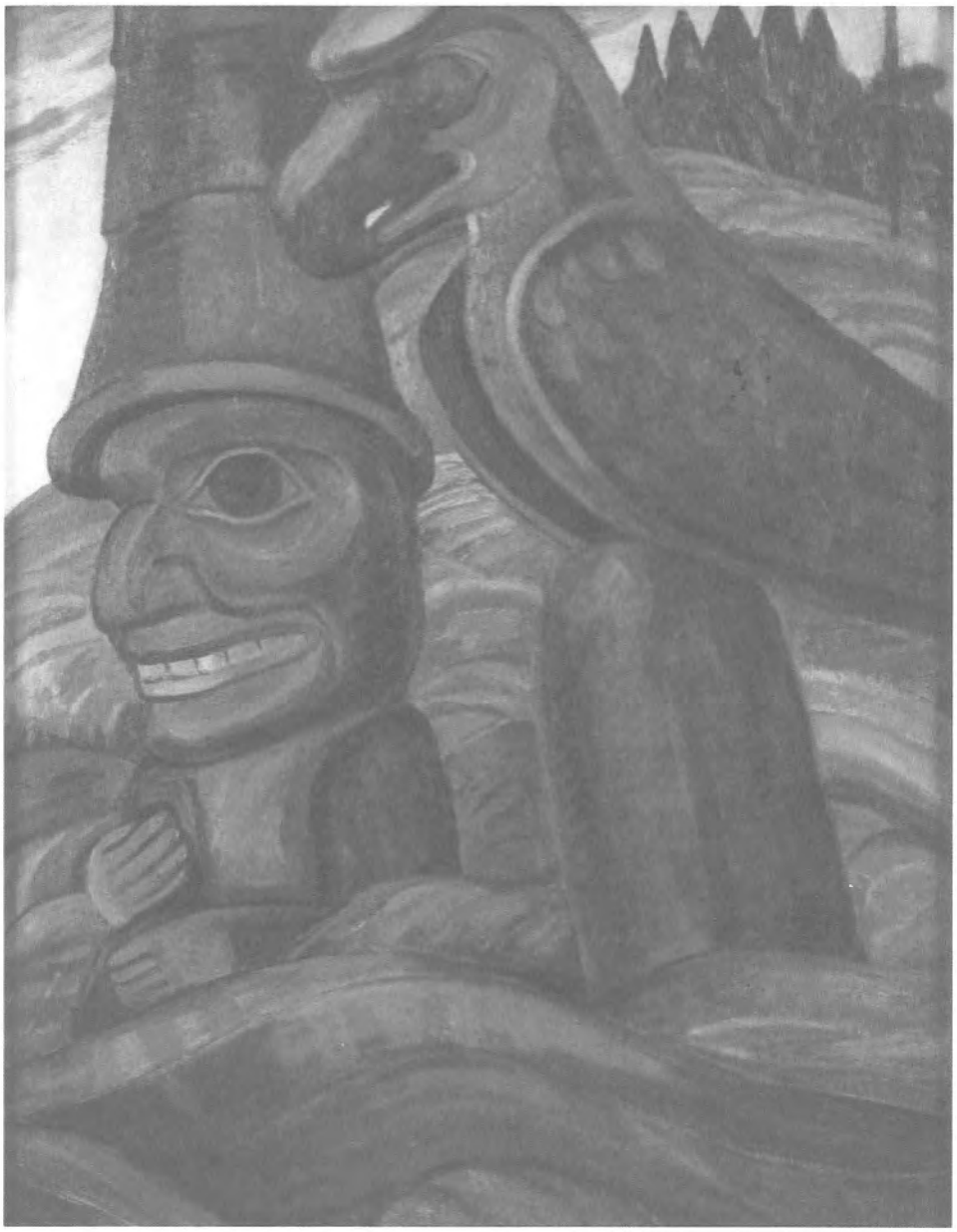
The extremes of the Canadian climate and the heating of our buildings in winter cause major fluctuations in relative humidity and temperature. The problem of maintaining correct relative humidity (RH) levels requires creative solutions. This is particularly true for sensitive paintings, such as those on wood, although the practices described in this article would benefit all paintings.

Paintings are best maintained at a safe and constant level of relative humidity. Changes in RH cause stresses between the various components of a painting that may lead to serious defects within its structure and, eventually, to a loss of paint. The response time of each painting to changes in the environment varies, and, depending on the painting and its particular circumstances, may be a matter of minutes. The faster these RH changes occur, the more damage may be sustained. Therefore, if these changes can be made to happen more slowly, the painting's components will have more time to adjust and equilibrate, and the stresses on the painting will be reduced.

Maintaining precise control of the environment in a building is difficult. However, controlling the fluctuations of RH in the immediate vicinity of a painting is easier. This can be done by enclosing the painting in an airtight case, thereby creating a "dead" air space around it. The better sealed the case, the slower the rate of RH change within. Using a hygroscopic material in a display case also helps to buffer the air, and further reduces internal environmental fluctuations. Including such cellulosic materials as blotting paper, cardboard, or matboard is a practical and inexpensive way to moderate the "climate" within a case.

Silica gel is a hygroscopic material that, as a buffer, is more effective by weight than are cellulosics. It can, therefore, be less bulky (though more expensive) to use. Another advantage to silica gel is its indefinite life span. It does not deteriorate or give off harmful volatiles; in fact,it has some capacity to absorb damaging pollutants. However, silica gel is *not* recommended for protecting paintings in transit, which may be subject to large temperature changes. In such circumstances, the use of cellulosics is recommended.

Silica gel inside a sealed case will moderate rapid environmental fluctuations while following the general trend of exterior fluctuations over time. No matter how well-sealed the case, there may come a time when the silica gel will no longer be able to maintain the RH within the desired range, and may need reconditioning, for example, after long-



***Yan Mortuary Poles** by Emily Carr (after treatment)*

***Yan Mortuary Poles** in case / frame that was built at CCI*

term, consistently "dry" conditions. Due to the drying effects of heating buildings in winter, this reconditioning normally involves the addition of moisture to the system. Silica gel and its use are described in CCI Technical Bulletin No. 10, *Silica Gel*.

Materials other than regular-grade silica gel that effectively buffer the air within a case are also available. Two such materials are Art-Sorb © beads and sheets (different forms of silica gel) and Gore-tex © tiles (Art-Sorb © beads held in an acrylic grid and sandwiched between moisture-permeable Gore-Tex © membranes). Their relatively high cost, however, may preclude their use in many instances.

Providing a backing board, especially with mat board as a buffer, and glazing will give adequate protection for most paintings during display and storage. Some paintings, however, such as those on ivory or wood panel, are more reactive to RH fluctuations, so it becomes more important to regulate the environment around them.

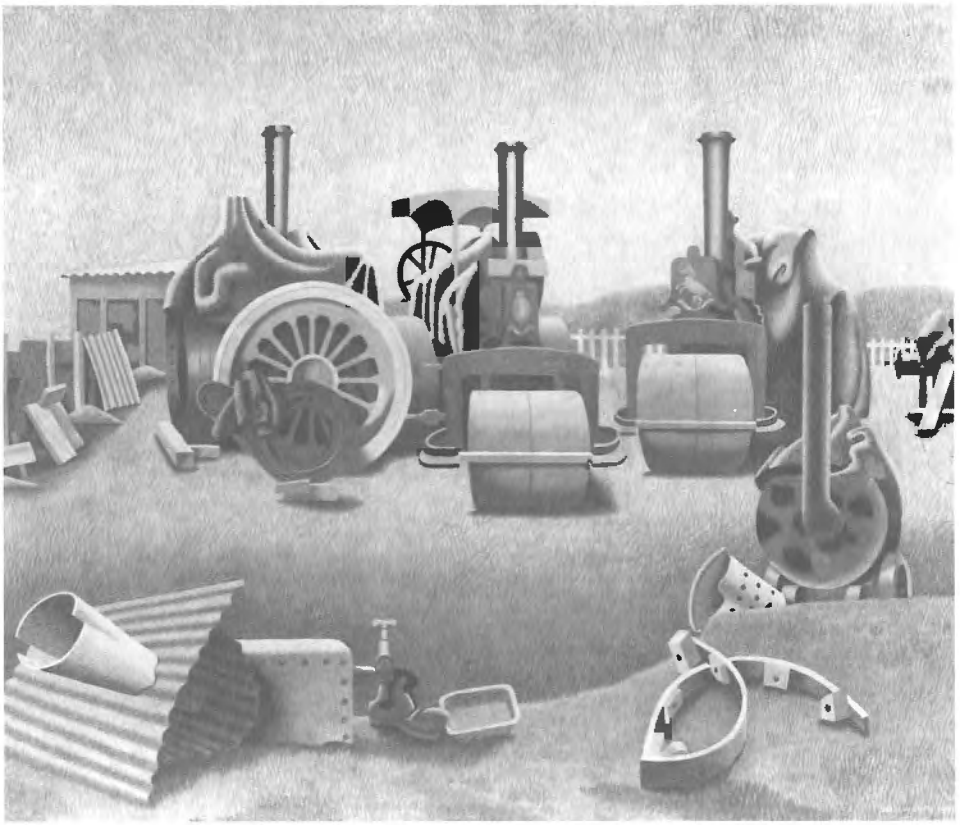
It is not always feasible or aesthetically acceptable to use a traditional exhibition case to display a painting. An alternative is to build a modified frame that totally encloses the painting and incorporates a buffering agent – in effect a small "case" with the capacity to moderate changes in RH. Two such cases, or modified frames, that were constructed at CCI are described below. Although the basic principle for both cases is the same – incorporating a silica gel "box" to help regulate the RH within the frame enclosure – each was designed to accommodate the requirements of a specific painting, and, therefore, was made with some different materials.

One case was designed and constructed by paintings conservator Leslie Carlyle for a painting on canvas by Emily Carr, owned by the Art Gallery of Windsor (see "A Double Painting by Emily Carr: *Yan Mortuary Poles*." *CCI Newsletter*. February 1989, pp. 5-7).

When Emily Carr painted *Yan Mortuary Poles*, circa 1928–1929, she used a "home-made" strainer of scrap wood (possibly a window frame) to stretch her canvas. The painting's title and the artist's name and address were painted on the back. The painting had random cracks in its thick paint and ground, so consideration was given to lining it with a support canvas. Since this would have hidden the inscriptions, however, a minimal treatment of the painting was made instead to preserve its original appearance. A special frame/case was, therefore, necessary to protect the painting after treatment by limiting further responses to fluctuations in RH.

This case incorporated the existing frame of the painting, which had to be built up and deepened to make room for thesilica gel box. The case was designed in such a way that the original strainer remained visible as a document of the artist's method and circumstances. After treatment, the painting was returned to a controlled environment, so the case was designed to moderate occasional fluctuations in RH rather than to maintain a particular level of RH. The RH within the case can be monitored by checking a small hygrometer inserted at the back.

The second case was designed and constructed by the author for an egg tempera painting on a canvas adhered to a wood panel. *Sussex Pastoral* was painted by Edward Alexander Wadsworth in 1941, and is owned by the Art Gallery of Hamilton.



***Sussex Pastoral** by Edward Alexander Wadsworth (after treatment)*

The painting's wood panel was cracked, and there were innumerable small paint losses over the entire surface. The losses continued despite several previous attempts at consolidating the paint. A long-term solution to restrict further movement of the panel in response to RH fluctuations was needed.

This painting required a frame, so one deep enough to accommodate a silica gel box was purchased. This frame/case allows easy access to the box should reconditioning of the silica gel become necessary. The RH inside the case can be monitored, without having to move the painting, by means of a small thermohygrometer inserted in the bottom edge of the frame.

These are only two examples of sealed frame/case design,and are not, by any means, the only solutions. Other materials and techniques can be effective, as long as the same general principles are employed.

Details on the construction of both frame/cases are available from CCI.

Further Reading

Carlyle, Leslie. "The Adaptation of a Commercial Aluminum

Channel Frame to Provide a Humidity-Controlled Enclosure for a Painting" [unpublished]. Poster session handout, IIC-CG Conference, Winnipeg, 1986.

Lafontaine, Raymond H. *Silica Gel.* Technical Bulletin No. 10. Ottawa: Canadian Conservation Institute, 1984.

McKay, Helen. "A Sealed Frame-Case for a Painting." Forthcoming in *Journal of the International Institute for Conservation – Canadian Group.*•

Comings and Goings

Stephen Duffy's contract with the Canadian Council of Archives has been renewed to May 1992. Stephen is working in the Conservation Processes Research division studying the alkaline sensitivity of cellulose.

Molly Horvath completed a three-month volunteer internship with the Conservation Processes Research division on August 10. While at CCI, Molly participated in a study of wood from the Biskupin archaeological site in Poland. Molly is now the Conservator of the Snow Squall Project at the Spring Point Museum, South Portland, Maine.

Esther Méthé began an eleven-month term position in the Textiles section on October 1.

Tom Stone, recently named a fellow of IIC, and **Jan Vuori** left for British Columbia the end of August, where Tom began a one-year Career Development Leave at UBC's Museum of Anthropology. Jan will be working with Museum's textile collection.

Mary Jane Throop, who had been doing data entry for the bibliographic database on conservation (BCIN) for the library, left CCI on September 21 to take a position with the St. Catharines Historical Museum.

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

Internships

Nicola Bushnell, sponsored and arranged by the Conservation Unit of the Museums and Galleries Commission, London, England. October 1, 1990 to September 30, 1991. Ethnology Section.

Sara Fritsch, Student, Göteborgs Universitet, Department of Conservation, Göteborgs, Sweden. June 12 to August 12, 1990. Ethnology Section.

Ina Janssen, Paintings Conservator, Altonau Museum, Hamburg, Germany. November 20, 1989 to April 30, 1990. Fine Arts Section.

Jeffrey Joseph, Student, Queen's University, from Clinton, New York, U.S.A. November 19, 1990 to May 15, 1991. Fine Arts Section.

Fallo Baba Keita, Student, La Sorbonne, France, from Mali. December 3, 1990 to May 31, 1991. Ethnology Section.

Tom Mosby, Ethnographic Conservator, National Gallery, Victoria, Australia. May 7 to October 31, 1990. Ethnology Section.

Ieva Ozola, Conservator, The Latvian History Museum, Riga, Latvia. October 22, 1990 to April 15, 1991. Archaeology Section.

Christian Welker, Student, Technical University (Fachhochschule Köln Secretariat of Conservation), Cologne, Germany. March 12 to August 17, 1990. Ethnology and Furniture and Wooden Objects Sections.

Who's Who at CCI — David Grattan

by C.G. Gruchy

David Grattan at work in the CPR Laboratory

David Grattan is a conservation scientist at CCI. This could mean that his background is in physics or engineering or biology, but, in fact, David is one of a number of chemists on staff. David did his first degree at Imperial College, London, and says that this is the only thing he has in common with the late Gerry Hedley, although he is quick to point out that Gerry's degree was in engineering. David does share several traits with Gerry: the ability to synthesize a number of complex ideas into a coherent form, to explain them in a way that is readily comprehensible to non-chemists, and to engage people in undertakings they might otherwise lack the confidence to attempt.

Before moving on to his PhD, David worked for the research department of the Institute of Synthetic Rubber, which was the largest manufacturer of automobile tires in Britain. A fellow student, who has gained some fame as one-half of the "cold fusion" team, persuaded David to return to graduate school to pursue a PhD. David studied polymer chemistry at the University of Keele under P.H.P. Plesch, whose father had been Albert Einstein's physician. David is greatly amused by the coincidence that Plesch studied chemistry under Michael Swarcz, the discoverer of "swarczite", now known as "Parylene", which David has researched in terms of its use in conservation (see *Newsletter*, February 1989).

David followed many other Keele students to the National Research Council of Canada, where he did a postdoctoral fellowship in the Division of Chemistry studying gas kinetics, and "spent a lot of time looking for a job". What David found was a second postdoctoral fellowship at NRC studying polymer chemistry; he had decided that gas kinetics was not his chosen field. Postdoctoral fellowships last a maximum of two years, so job hunting continued to be one of David's major activities. Despite sending a myriad of applications all over North America, it was a phone call from Cliff McCawley, chief of CCI's Conservation Processes Research division, to Dave Wiles, then head of the Chemistry Division at NRC, that brought David to CCI in 1977. CCI needed someone to study the conservation of waterlogged wood, and, having changed his direction in chemistry several times, this new challenge fired David's imagination.

David arrived at CCI with no idea of where to begin, but points out that when he went into the lab that was to become "home", it was clear that neither did CCI: the lab was magnificent in its bare glory. The only equipment available was a pile of photographic apparatus, a deep freeze, a freeze dryer, and a rotary viscometer. In the subsequent thirteen years, David still hasn't found a use for the viscometer, but his studies on waterlogged wood have brought him – and CCI – considerable recognition in the field. David maintains that it was the 1981 ICOM conference in Ottawa that put CCI in the international mainstream of conservation research, because that conference was our first significant exposure to the profession. David's research was mainly on waterlogged wood, and he became the ICOM Committee on Conservation cordinator for that subject. Nonetheless, David still maintained his interest in polymers, oxidation, and rubber, which put him in an excellent position to carry out research on the problems of conserving "modern materials".

David's colleagues describe him as a scientist with a great deal of curiosity: he keeps in tune with what is going on in many chemical disciplines, and tests possible applications of a process to conservation. It was this curiosity that brought Parylene_ to his attention. When David was confronted with 40-million-year-old conifer cones that turned to dust when touched, he began a series of experiments that have led to Parylene being successfully used on a variety of materials. David will also be using the Parylene process on more modern objects: to coat and preserve the spectral photographic plates produced by Dr. Gerhard Herzberg in his work leading to the Nobel prize in chemistry.

David loves challenges, and one of the many he has faced at CCI was to put together a team to study, non-destructively, heart-rot in totem poles. To his great credit, he succeeded, and the team finished their task with much satisfaction. David also loves practical jokes and, to his further credit, he has been on both ends of those. On one occasion, David was on his way to give a lecture in Hamilton, Ontario, and was complaining that the samples of waterlogged wood in his suitcase were far heavier than he had anticipated. Indeed, fifty pounds of lead does add significantly to the weight of any suitcase, wood samples or not! His role in hooking up an electric typewriter to a speed- controlling rheostat is not crystal clear, but there is rumoured to be a connection.

If there is one aspect of conservation that bothers David, it is that the relationship between museums, their collections, and conservation scientists is eroding. He senses that conservation science is developing too much in the direction of a field in its own right, and is becoming less relevant to the needs of the collections. When asked why he continues to work in conservation science, David's immediate response is that there is nothing he would rather do, that he can't think of a job where he could have so much fun and at the same time have such an impact. A number of people have noticed how excited David gets when a new object with new challenges arrives at CCI.

When David is not being a scientist, he describes himself as "a hockey parent". And

when he's not doing that, he loves to cross-country ski or, in the other season, to canoe. He and his wife, Rachel, are active members of the Navan community, where David still puts on his Scouts uniform to lead Beavers, Cubs, or Scouts, as the occasion demands. Navanites also attest to the fact that he wields a mean tennis raquet. David is active in the congregation of St. Mary's, where, among other things, he chairs the Cemetary Committee, an interesting parallel to putting scientific heresy in conservation to rest.•

VISITING FELLOW

Alan Watchman, a petrologist and geochemist from Canberra, Australia, visited CCI from mid-August 1990 to mid-January 1991. His background is in determining the geological factors affecting the deterioration of Australian rock art and in identifying archaeological materials. Alan is a Research Fellow at the Centre for Australian Regolith Studies at the Australian National University. His current research interests are in dating rock art and in identifying pigment compositions. At CCI, Alan is analyzing samples he collected from paintings sites in far north Queensland and from petroglyph locations in eastern South Australia. This work will culminate in the preparation of an article that examines the validity of using the cation-ratio method to date petroglyphs.

Alan chose to come to CCI because of our staff's expertise and knowledge of deterioration mechanisms and conservation methods in relation to Canadian rock art, and because of the well-equipped research laboratories that are available here.

In August, Alan attended the conference to celebrate the 50th anniversary of the discovery of Lascaux, held in France. While there, he presented papers on the weathering of Australian rock art and on Australian pigment studies. He visited Lascaux and the facsimile, and toured cave art sites in the Pyrenees Mountains. In October, Alan visited rock art sites in Washington, Idaho, Montana, and California, and presented lectures at Eastern Washington University and at the Getty Conservation Institute on recent advances in dating Australian rock paintings.•

Collagen Fibre Research

by Gregory S. Young

Native skin and semi-tanned leather artifacts constitute a large portion of the total physical record of Native culture in Canadian museums. Many of the artifacts are irreplaceable, and all are deserving of the best possible care. To help conservators provide this care, the Analytical Research Services division of CCI has been conducting research on the basic component of these artifacts – collagen fibres.

Until recently, little research has been undertaken in conservation regarding Native skin and leather treatments. Conservators have had to adapt techniques from other areas of conservation and from the leather manufacturing industry, often without knowledge of the short- and long-term effects of the materials used in the treatments.

Recently, conservators have been re-examining the methods and objectives of skin and leather conservation, and have found that many traditional treatments are inappropriate and potentially harmful. For example, some traditional conservation practices for cleaning and softening may remove important natural components from artifacts, and others may deposit potentially hazardous materials on them. Emphasis is now being placed on preventive care and minimal intervention in treatments.

Developing new treatments and preventive care requires analytical methods to study the deterioration of artifacts and to determine the effects of environment and of new, experimental treatments. Recent articles in the conservation literature report on research undertaken to detect the deteriorative breakup of collagen's long, chain-like molecules through measurements of molecular weight changes. Although these chemical methods of analysis can contribute substantially to the study of deterioration, labour-intensive techniques and often limited quantification hamper their use.

Physical methods of analysis can also provide information about molecular breakdown. Deterioration changes the physical properties of skins and leathers; individual collagen fibres lose tensile strength. One comparatively straightforward physical method of assessing the molecular breakdown underlying lost strength is to study collagen fibre thermal stability. Variations in this stability reflect changes to collagen molecular structure and to the organization of molecules.

When slowly heated in water, collagen fibres shrink in length upon reaching a critical temperature. This "shrinkage temperature" varies with the level of disruption in molecular structure, and so can be used as a simple measure of deterioration. It can also provide information about the effects of materials used in treatments and of storage and display conditions. The measurements can be performed by microscopy, which uses minute samples and therefore permits the testing of museum artifacts. A polarizing microscope with a hot stage is recommended. This makes particular optical effects visible, which provide good reproducibility in routine measurements (see Young, 1990).

In order to define the limits to the usefulness of the microscopical measurements, several analytical techniques are being evaluated for characterizing the shrinkage process more precisely. Differential scanning calorimetry (DSC) can determine the amount of structural change occurring in collagen fibres during shrinkage and the predisposition of fibres to undergo shrinkage. Other physical techniques, including microscopy, infrared microspectroscopy, and x-ray diffraction are under study to supply complementary information on deteriorative changes to the molecular organization of collagen's semi-crystalline structure.

Further Reading

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A Double-Sided Panel Attributed to Tom Thomson

by Ian N.M. Wainwright

Tom Thomson is undoubtedly one of the most widely appreciated painters of the Canadian landscape. His larger paintings on canvas, such as *The West Wind* (Art Gallery of Ontario) and *The Jack Pine* (National Gallery of Canada), are among the most familiar of any by a Canadian artist. In view of Thomson's pre-eminence, it is perhaps surprising that no detailed physical or chemical analysis had ever been done on his paintings. When an opportunity to undertake such a study arose in the autumn of 1989, CCI seized the occasion to learn more about the artist's materials and methods. Such information is invaluable, not only for cases where authenticity or attribution is in doubt — as was the case described here — but also with respect to conservation and treatment of an artist's work.

Our examination was of two paintings, *Spring Landscape with Snow* and *Northern Mist*, executed on either side of a small wooden panel. The panel was purchased in 1986 by David Mitchell, a Toronto art dealer, with his partner, Tom Beckett of Hamilton. The previous owners were Peggy and Barbara Scadding

Spring Landscape with Snow

of Vermont. The provenance compiled by Mitchell, based in part on discussions he had with the Scadding sisters, states that the painting had been in the Scadding family since the early 1920s, probably 1922, when it was purchased by their mother from her art teacher, William Cruickshank. When Mitchell tried to sell the painting, however, it soon became apparent that there was disagreement over its attribution. He sought the advice of the Art Gallery of Ontario (AGO), and it was the AGO that asked CCI to undertake an examination of the panel. Our aim was to try to resolve the controversy, at least from a technical and scientific point of view.

Beginning in 1912, Thomson painted extensively in Ontario's Algonquin Park, where he also worked as a guide and ranger until his death in a canoeing accident at Canoe Lake in 1917 under circumstances which, to this day, remain uncertain. From 1914 on, Thomson often preferred small birch panels for his oil sketches, which depict the rugged landscape of the park as it changed with the seasons and the weather. The sketches were the groundwork for the large canvases executed in the Studio Building in Toronto, which he shared with other artists, some of whom were later to form The Group of Seven. The birch panels were custom made — about 8½" x 10½" (21.6 cm x 26.7 cm) — and they fit neatly into a sketchbox designed to hold several of them as well as paint, oil, and brushes. It was the ideal kit for an artist who sought inspiration in places that could only be reached by paddle and portage.Following Thomson's death, the artist J.E.H. MacDonald designed an estate stamp that was impressed into the sketches left in the Studio Building. The stamp bears the letters "TT" and the year "1917" encircled by a miniature palette. There are two estate stamps, one made of metal and the other of rubber, which are now in the collection of the National Gallery of Canada (NGC), where they were sent by A.Y. Jackson in 1947. Sketches that Thomson painted in the spring of 1917 passed directly to his family, and do not bear the estate stamp impression. The panel we examined was stamped on both sides. Prior to CCI's involvement, the estate stamp impressions had been examined by Ulf von Bremen of the Centre of Forensic Sciences in Toronto and compared with a photograph of an estate stamp on a painting in the McMichael Canadian Collection in Kleinburg, Ontario. Von Bremen's conclusion was that the impressions on the panel could not be differentiated from the Kleinburg example.

There are several ways that science can help solve problems of this kind. One approach depends on the ability to make appropriate comparisons with actual paintings of certain or, at least, of well-defined attribution, or with chemical and physical data on paintings that has been published by other researchers. The success of this approach depends on selecting the appropriate criteria for comparison: pigments or media, structure and materials of the ground and support. Sometimes, authenticity questions can also be resolved quickly from a knowledge of the history of materials technology. For example, many of the pigments and vehicles that are commonplace today are chemical compounds of very recent invention. Acrylic resins did not come into use until the 1950s. Titanium white pigments are also a twentieth-century development, and the modern rutile form of titanium white was not marketed until the 1940s. If titanium white in acrylic was used for a painting, the artist was not Tom Thomson!

Our approach to the analysis of the double-sided panel was three-fold. We first searched for evidence of any materials that would not have been available to an artist before 1917 and for any other spurious features that might be revealed by x-radiography and other non-destructive techniques. Next, we were fortunate to have been able to borrow three Thomson sketches, one of them double-sided, from the NGC. These reference panels were chosen from among their collection of 8½" x 10½" wooden panels on the basis of the paint colours present, our ability to remove microscopical samples from them, and the presence of the Thomson estate stamp. Date of execution, subject matter, and origin were not used as criteria in our selection. We also borrowed both the metal and rubber estate stamps for a direct comparison of the impressions in all the paintings using both photomacrography and a laser scanner.The Analytical Research Services division makes use of photographic, x-radiographic, and x-ray spectrometric techniques, which do not require the removal of samples. When we do remove samples, our methods permit us to extract a great deal of information concerning the organic and inorganic constitutents of paint even though sample size is exceedingly small. We have also learned to start with simple observations. Jeremy Powell looked for similarities and discrepancies between the panels by infrared reflectography and

Northern Mist

electron emission radiography. Greg Young confirmed that the panel was, indeed, made of birch by looking for diagnostic features revealed along the bevelled edges. Dimensions of the panel were compared with those of 73 similar sketches at the NGC. X-ray spectrometry by Marie-Claude Corbeil showed that lead, zinc, cadmium, chromium, and mercury compounds were used as paint pigments or extenders to varying degrees in the paintings with the exception that one of the reference panels contained no lead. No chemical elements were found that would have indicated the presence of materials not available to artists prior to July 1917. The ratio of the concentration of lead to zinc, in the paintings which contained both, was highly uniform and nearly identical for all the paintings. This observation led us to think that the paint in the NGC panels and the Mitchell panel were similar. It was not, however, until Jane Sirois and
Elizabeth Moffatt began looking at paint samples in detail, using x-ray diffraction and Fourier transform infrared spectroscopy, that we realized how similar the paintings actually were.

The first interesting observation was that the main constituent of all the paintings, except one, was a mixture of lead sulfate ($PbSO_4$) and zinc white (ZnO), probably a mixture prepared or blended by a paint manufacturer rather than mixed by the artist. We had not anticipated finding lead sulfate. Lead white (basic lead carbonate; $2PbCO_3.Pb(OH)_2$) is much more common. 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. Zinc white alone was found in the case of one of the NGC panels. This observation deserves further study since it suggests that Thomson's paint palette varied slightly at different times, a fact that could prove useful in grouping paintings chronologically.

Virtually identical infrared spectra were obtained from samples removed from *Spring Landscape with Snow* and *Northern Mist* and those from NGC panels. When the paint was analyzed by Fourier transform infrared spectroscopy, the result was an infrared spectrum with several distinctive and diagnostic features. First, the paints were mixtures of an ester-containing material, probably linseed oil, with lead sulfate and zinc white pigments or extenders as the principal inorganic components. Second, the vehicle — the linseed oil — reacted with zinc white in the same way in all cases, resulting in the formation of carboxylic acid salts (soaps). A comparison between the metal estate stamp and the estate stamp impressions in all of the panels was undertaken using a laser scanner (a high precision optical coordinate measuring machine). This part of the study was conducted by Marc Rioux, Luc Cournoyer, and Guy Godin of the Autonomous Systems Laboratory, Institute for Information Technology, National Research Council of Canada. (For more on the laser scanner see "NRC's Laser Scanner for Recording and Replication" in the September 1990 issue of the *CCI Newsletter*, pp. 6-8.)

Three-dimensional and intensity data were recorded by the laser scanner from the metal stamp and impressions. Using sophisticated computer graphics, simulated images of the stamp and of the various impressions were carefully oriented and displayed together on a computer monitor. The superimposed data were carefully examined to determine if there were any discrepancies. The images gave a near perfect match. We found no evidence that would have indicated to us that the NGC metal estate stamp was not the one used on all of the paintings studied.

Did Tom Thomson paint the double-sided panel? Unfortunately, it is never possible from the results of strictly physical and chemical analyses to conclude with absolute certainty that a painting is by a given artist. Only a knowledgeable curator, art historian, or connoisseur can provide an informed opinion of this kind. Conversely, of course, if spurious and anachronistic materials are found in a painting, it is appropriate for the scientist to conclude that it is a fake. Indeed, many forgeries are extremely inept from the point of view of the materials used.

In this case, however, no inconsistencies were found between the materials used for *Spring Landscape with Snow* and *Northern Mist* and the Thomson reference panels from the National Gallery of Canada. Virtually identical infrared spectra of paint samples were obtained from the panels studied. The estate stamp impressions were made — to a high degree of certainty — by the original stamp. It is unlikely that a painting executed much later after Thomson's death would share all of the same features that we have observed.

Further Reading

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Town, Harold and David P. Silcox. *Tom Thomson: The Silence and the Storm*. Toronto: McClelland and Stewart, 1977.

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Shared Responsibility : Proceedings of a Seminar for Curators and Conservators

Shared Responsibility: Proceedings of a Seminar for Curators and Conservators is now available. This seminar was held at the National Gallery of Canada, Ottawa, on 26, 27, and 28 October 1989, and was co-hosted by the National Gallery of Canada and the Canadian Conservation Institute, Department of Communications. The organizing committee consisted of Marion Barclay (Chair), Senior Conservator of Paintings and Contemporary Art, and Charles C. Hill, Curator of Canadian Art, both of the National Gallery of Canada; John Taylor, Chief, Analytical Research Division, Canadian Conservation Institute; and Karen Graham, Senior Conservator, Canadian War Museum.

This collection of 23 essays was edited by Barbara A. Ramsay-Jolicoeur, Senior Conservator of Fine Art, National Gallery of Canada, and Ian N.M. Wainwright, Senior Conservation Scientist, Canadian Conservation Institute, and is a publication of the National Gallery of Canada.

Shared Responsibility is published as a single tumble volume (8 ½ x 11"; 392 pages) in English and French, and includes 23 papers and many black-and-white illustrations, graphs, and tables.

As the following Table of Contents from the publication shows, *Shared Responsibility* is a very interesting compilation from many contributors — artists, curators, conservators, scientists, administrators, and other specialists — and will be an important addition to the conservation and curatorial literature.

Copies are available from:

National Gallery Bookstore
National Gallery of Canada
380 Sussex Drive
P.O. Box 427, Station "A"
Ottawa, Ontario
K1N 9N4
Canada

attention: Daniel Pritchard

The cost of the *Shared Responsibility* is $30.75 (including GST, shipping and handling) for orders placed from within Canada, and $30.00 (CDN) (including shipping and handling) for all orders from outside of Canada.

Please makes cheques or money orders payable to "The Receiver General for Canada." VISA and MASTERCARD payments will also be accepted.

Table of Contents

Bob Barclay was invited to give a lecture on the conservation and restoration of brass wind instruments for a symposium at the Schola Cantorum Basiliensis in Basel, Switzerland. After the Symposium, Bob conducted a survey of European museums to assess the function and preservation of musical instruments in their collections. The ethical and practical ramifications arising from this survey will be the basis of a large study on the subject.

April 1990

David Hanington gave a presentation on "Conservation and Security" to the Ontario Association of Archivists, North Bay, Ontario.

Joe Dorning attended the Museums Association of Saskatchewan Annual Conference, held in Maple Creek, Saskatchewan.

Sherry Guild and Claire Titus visited the Billings Estate Museum, Ottawa, Ontario, to assess the condition and conservation needs of wallpaper in several rooms. Structural repairs to the building are being coordinated with conservation priorities.

Twenty-five people attended the CCI Parylene Project review meeting. Participants represented CCI, the National Archives of Canada, the Canadian Museum of Nature, the National Museum of Science and Technology, the Getty Conservation Insititute, the Royal Ontario Museum, Information Conservation Inc., Union

Carbide Corp./Nova Tran, the Canadian Parks Service, the RCMP Forensic Lab, and the Canadian Museum of Civilization. (For more information on Parylene, see "Parylene at CCI" in the CCI Newsletter, February 1989, p. 16.)

Nancy Binnie presented a paper on "The Effect of Vikane on the Stability of Cellulosic and Ligneous Materials – Measurement of Deterioration by Chemical and Physical Methods" to the 1990 Spring meeting of the Materials Research Society in San Francisco, California.

SEMINARS

"Making it Last: Preventive Conservation for Artists"
Debra Daly Hartin and Wanda McWilliams at the Rosemont Art Gallery
Regina, Saskatchewan.

"Artifact Mounting Workshop"
Bob Barclay, Carl Schlichting, and Carole Dignard at the Prince of Wales Northern Heritage Centre
Yellowknife, Northwest Territories.

May 1990

Marion Kite, textile conservator from the Victoria and Albert Museum, London, England, visited CCI where she presented a public lecture on "The Conservation of Hats" and consulted with conservators on conservation materials and techniques.

Eva Burnham attended the annual conference of the Costume Society of America, held at the Smithsonian Institution, Washington, D.C.

Papers were presented at the annual meeting of the IIC-CG, Quebec City, Quebec, by David Tremain, Colette Naud, Jean Tétreault, Marie-Claude Corbeil, and Malcom Bilz for Lyndsie Selwyn.

Gordon Fairbairn and Peter Newlands completed Phase I of a furniture collection survey for the province of New Brunswick at Kings Landing, New Brunswick.

David Hanington and David Tremain carried out collection survey/consultation visits to the Ecole nationale de théâtre du Canada and to the library/museum of the Congregation Shaar Hashomayim, Montreal, Quebec.

Eva Burnham and Colette Naud completed a collection survey at Le Musée des Augustines de l'Hôpital général de Québec, Quebec City, Quebec.

Joe Dorning attended the Community Museums Association of PEI meeting held in Montague, Prince Edward Island.

Cliff McCawley attended a meeting of the Directory Board of the ICOM Committee for Conservation held at ICCROM.

John Taylor presented a paper, "Applications of a 3-D Laser Scanner to the Recording and Replication of Works of Art", at the Museums and Information Conference in Winnipeg, Manitoba.

Tom Strang presented a paper on "Measuring pH of Preservative Fluids – Ethanol Water Mixtures" to the Society for the Preservation of Natural History Collections (SPNHC). He also led a workshop on pest control in museums for the Special Symposium on Exhibiting Natural History Materials held by SPNHC in Chicago, Illinois.

SEMINARS

"Field Conservation Techniques"
Judy Logan and Tara Grant at the Canadian Archaeological Association Conference
Whitehorse, Yukon

"Environment in Historic Buildings"
Stefan Michalski to members of the Museum Association of Newfoundland and Labrador
Deer Lake, Newfoundland

June 1990

David Tremain and Claire Titus surveyed some banknotes at the Bank of Canada, Ottawa, Ontario, that are to be mounted and displayed as a study collection.

Colette Naud attended the annual meeting of the Société des musées québecois, Montreal, Quebec.

Deborah Robichaud attended the Canadian Museums Association Annual Conference held in Edmonton, Alberta.

Robert Arnold attended the annual general meeting of the Canadian Association of Professional Conservators, National Gallery of Canada, Ottawa, Ontario.

Stefan Michalski was a guest lecturer for part of a three-week course on "The Consolidation of Painted Ethnographic Objects" at the Getty Conservation Institute, Los Angeles, California.

Carl Schlichting attended the Pre-Conference Workshop for the Agricultural Machinery Working Group of the Association of Living Historical Farms and Agricultural Museums (ALHFAM), Chicago, Illinois, on the subject of the conservation and restoration of agricultural implements.

SEMINARS

"Conserving Agricultural Implements"
Carl Schlichting in conjunction with the OMA Workshop held at the Ontario Agricultural Museum
Milton, Ontario.

July 1990

Stan Frydryn and Carl Schlichting installed a sixteenth-century ceramic tile stove in the new ceramics gallery at U.B.C.'s Museum of Anthropology in Vancouver, British Columbia. This ended a six-month project at CCI that included reassembling the stove, reproducing missing tiles, and developing a mounting system. An educational package illustrating the molding and casting techniques that were used in the conservation of the stove is being prepared for the museum.

Mary Peever visited Doon Pioneer Village, Kitchener, Ontario, to consult with staff on problems of housekeeping and maintenance in a living history site.

Valerie Dorge took a five-week leave to participate in the Gordion Furniture Project in Ankara, Turkey, at the invitation of Dr. Elizabeth Simpson, Director of the project. This is an on-going project to conserve, study, and produce publications on furniture in various states of preservation taken from tumuli at the site of Gordion, Turkey.

Helen Burgess of CCI and Cathy Baker of Buffalo State College led a one-week workshop on the use of enzymes in paper conservation, in Royal Oak, Maryland, as part of the Book & Paper Intensive organized by Tim Barrett, University of Michigan.

Jean Tétreault attended the 5th International Conference on Indoor Air Quality and Climate in Toronto, Ontario.

SEMINARS

"Basic Care of Books and Archival Materials"
Wanda McWilliams and Claire Titus at the Wellington County Museum and Archives Fergus, Ontario

August 1990

Robert Arnold visited the Joseph Brant Museum, Burlington, Ontario, to assess the conservation needs of two portraits. He also went to the Glenhyrst Art Gallery of Brant, Brantford, Ontario, to examine several paintings treated at CCI some twelve years ago.

Colette Naud visited the Museum of the Sisters of the Holy Cross, Montreal, Quebec, to examine sixteen paintings and to provide general recommendations regarding the conservation and care of the collections.

Tom Strang attended the Eighth International Biodeterioration and Biodegradation Symposium in Windsor, Ontario.

David Grattan and Cliff McCawley attended the 4th Waterlogged Organic Archaeological Materials (WOAM) Conference, held on August 20-24, at the German Maritime Museum, Bremerhaven, Germany. WOAM is a working group of the International Council of Museums (ICOM) Committee for Conservation. David Grattan presented two papers at the conference: one co-authored by Cliff Cook of Parks Canada, and the other jointly written with Malcolm Bilz, Charlotte Newton, and Judy Logan, all of CCI.

The ICOM Committee for Conservation held its 9th Triennial meeting in Dresden, Germany, on August 26-31.
Cliff McCawley was re-elected to and asked to chair the Directory Board. David Grattan was elected Assistant Coordinator of the Resins Working Group and of the Modern Materials Working Group. He was also one of the four technical editors of the preprints. Also attending were Stefan Michalski and Colette Naud. Helen Burgess, Nancy Binnie, and Greg Young authored papers for the meeting.

September 1990

Deborah Robichaud attended the Association Museums New Brunswick annual conference held in Moncton, New Brunswick.

Maureen Williams spent a week in Red Bay, Labrador, helping staff from Memorial University of Newfoundland to close the new Visitor Centre for the season and to pack up artifacts excavated from the sixteenth-century Basque whaling site and the eighteenth-century French trading post.

Stefan Michalski gave a talk on "Toward Specific Guidelines for the Museum Environment and Their Implications for Historic Buildings" at the APT/AIC International Conference, Montreal, Quebec.

David Tremain presented a paper at the Book and Paper Conservation Conference in Budapest, Hungary, on CCI's involvement in assisting accident investigations through the treatment of paper material recovered from air crash sites.

Joe Dorning attended the British Columbia Museums Association Annual Conference held in Courtney-Comox, British Columbia.

Carl Schlichting visited the Canadian Railway Museum, Saint- Constant, Quebec, to consult with museum staff and to do a collections survey.

Mary Peever participated in the Association of Preservation Technology, American Institute of Conservation (APT/AIC) Symposium on Museum Collections in Historic Buildings.

Charlotte Newton and Tara Grant visited Dr. James Savelle, McGill University, to examine a collection of over 2000 artifacts excavated from sites in the Arctic this past summer. A number of the artifacts from this collection, which belongs to the Prince of Wales Northern Heritage Centre, Yellowknife, N.W.T., were accepted for treatment at CCI.

Stan Frydryn visited conservators at the Centre de conservation du Québec to discuss the conservation of plaster sculpture in preparation for the treatment of a collection of sculptures belonging to the Mill of Kintail.

Chuck Gruchy, John Taylor, Stefan Michalski, and Colette Naud attended the IIC Congress in Brussels.

Dave Hanington, Maureen McDonald, and Tom Strang did a survey of mould- and water-damaged material in the library collection of Agriculture Canada. A report providing recommendations on how to deal with this material and how to improve the storage conditions of this collection was prepared and sent.

October 1990

As part of National Chemistry Week, sponsored by the Chemical Institute of Canada, approximately 50 secondary school students from different schools in the region visited the Conservation

Research Services laboratories at CCI. The visit was coordinated by David Grattan.

Gordon Fairbairn and Tara Grant conducted a five-day workshop on "Conservation of Furniture" for students in the Art Conservation Techniques Programme at Sir Sandford Fleming College, Peterborough, Ontario.

Carl Schlichting visited the Canadian Railway Museum in Saint- Constant, Quebec, to give advice on and help start a stabilization/corrosion-inhibiting project on an early diesel-electric locomotive. He also conducted a five-day workshop and survey for the Detroit Historical Museum.

Deborah Stewart gave a talk on conservation to the Ottawa Dollcraft Guild.

Carole Dignard, Eva Burnham, and Peter Vogel did collection survey visits to the Musée de l'Oratoire Saint-Joseph, La Maison de Mère d'Youville, and the Mother House of the Sisters of Charity of Montreal, Montreal, Quebec. Stan Frydryn also participated in the latter survey. Follow-up reports providing recommendations for the future care and conservation of these collections were provided.

Three lectures from CCI were presented at a symposium on the Use of Enzymes in Conservation, sponsored by Technology and Conservation and held at the Massachusetts Institute of Technology, Boston, Massachusetts. Helen Burgess presented two lectures on "An Overview of the Use of Enzymes in Conservation" and "The Degradation of Cellulose by Commercial Amylases and Proteases" (co-authored by Season Tse). Sherry Guild spoke on "The Removal of Adhesive from Audubon Birds of America Plates, using an Enzyme Poultice."

Stefan Michalski taught part of the museum climate section for Prevention in Museums in Africa (PREMA) at ICCROM, Rome, Italy.

David Grattan gave a talk on Parylene to Art Conservation Programme students at Queen's University, Kingston, Ontario. (For more information on Parylene, see "Parylene at CCI" in CCI Newsletter, February 1989, p. 16.)

Valerie Dorge and Peter Newlands conducted the second phase of a furniture survey in New Brunswick.

Joe Dorning attended the AMM Conference in Winnipeg, Manitoba.

Deborah Robichaud attended the MANL conference in Grand Falls, Newfoundland, the OMA Conference in St. Catharines, Ontario, and the AMA Conference in Drumheller, Alberta.

SEMINARS

"Mount Making for Museum Artifacts"
Carl Schlichting and Carole Dignard for the Burnaby Village Museum
Burnaby, B.C.

"Housekeeping in Historic Buildings"
Mary Peever and Deborah Stewart for Gaelic College, Baddeck, Nova Scotia, and Nova Scotia Highland Village, Iona, Nova Scotia.

"Emergency and Disaster Planning in Museums"
Deborah Stewart, David Tremain, and Carolyn Leckie at the Old Log Church Museum
Whitehorse, Yukon Territory

"Display Case Design"
Stefan Michalski and Jean Tétreault for the Montreal Museum of Fine Arts
Montreal, Quebec.

"Cleaning and Repair of Ceramics and Glass"
Judy Logan and Stan Frydryn at the Western Development Museum Saskatoon, Saskatchewan.

November 1990

David Grattan participated in a discussion on Parylene_ at the meeting of the Canadian Council of Archives. He also reviewed the ICOM Working Group on Waterlogged Organic Archaeological Materials Conference, held August 20-24 in Bremerhaven, Germany, in a talk given to the Ottawa Regional Group of the IIC.

Gordon Fairbairn gave a five-day workshop on "Conservation of Furniture" at Queen's University, Kingston, Ontario, to second-year students of the Art Conservation programme. Eva Burnham joined him for one day to lecture on the care of upholstery.

Eva Burnham attended the Harper's Ferry Textile Conservation Conference.

Carl Bigras presented a lecture on "Photographing Museum Objects", and Jean Tétreault spoke on conservation materials to students in the Techniques de muséologie programme at the Collège Montmorency in Laval, Quebec.

Helen Burgess gave a lecture on interpretation of scientific testing methods for the determination of paper permanence at the meeting of the Preservation Committee, Canadian Library Federation, in Ottawa, Ontario.

Stefan Michalski gave two lectures at the Courtauld Institute, London, England: an extended version of his IIC paper "A Physical Model of the Cleaning of Oil Paint", and "The State of Current Knowledge of Mechanical Properties of Paintings". He also spoke at the seminar on "Flattening of Paper" given by the Conservation Analytical Laboratory of the Smithsonian Institution, Washington, D.C.

Nancy Binnie gave three talks, titled "Science and the Conservation of Works of Art", at the Campbellford District High School, Campbellford, Ontario. These presentations were part of an afternoon of lectures on "Your Science Future".

Bob Barclay and Carolyn Leckie delivered a report on "Conservation Requirements for Project Moving and Rebuilding" at the Redpath Museum, Montreal, Quebec. This report was the culmination of three survey visits that had been made to the museum over the course of the summer.

Malcolm Bilz gave a presentation on "Conservation and Conservation Science" at the Perth Museum in Perth, Ontario, addressed to both Canadian and Costa Rican students participating in the Canada World Youth cultural exchange programme.

SEMINARS

"Framework for Preventive Conservation"
Tom Strang and Stefan Michalski at the Mennonite Heritage Village Steinbach, Manitoba.

"Aménagement des réserves d'un musée"
Carole Dignard, Colette Naud, Esther Méthé, and Jean Tétreault at CCI for the Société des musées québécois.

"Mount Making for Museum Artifacts"
Bob Barclay and Carole Dignard, for the Provincial Museum of Alberta
Edmonton, Alberta.

December 1990

SEMINARS

"Plastic and Polymeric Materials"
Jean Tétreault and Scott Williams for the Centre de conservaton du Québec and the Historic Resource Conservation Branch of the Canadian Parks Service
Quebec City, Quebec.•

Comings and Goings

Sherry Guild, Senior Assistant Conservator in CCI's Works on Paper Section, has been seconded on a part-time basis for one year to CCI's Conservation Processes Research Division to work on a mass deacidification project for the Metro Toronto Chairman's Committee for Preserving Documentary Heritage.

Debbie and Vince Cooke, Native people from the Makah Indian Reservation in Washington State and conservators with the Makah Cultural Center museum, worked with David Grattan seeking methods of re-treating archaeological specimens from the Ozette and Hoko River sites. Specimens included wood, basketry, and various fibrous materials. Vince and Debbie were at CCI from mid-January to mid-May.

David Miller joined CCI staff on April 2 as a Senior Assistant Conservation Scientist in the Analytical Research Services Division. David's responsibilities will be to develop organic analysis techniques for polymers, resins, proteins, solvents, dyes, carbohydrates, oils, and adhesives using chromatography, mass spectroscopy, and thermal analysis, and to undertake service requests and research analyses on these materials.

Eva Burnham, a Senior Conservator in the Textiles Section, is on a two-year leave of absence from CCI and is now working at the McCord Museum of Canadian History in Montreal, Quebec, setting up their new costume and textile conservation laboratory. Once the McCord moves into its renovated new quarters and re-opens in the Spring of 1992, Eva will run the daily operations of this laboratory.

Judy Logan has been officially named Chief of CCI's Archaeology and Textiles Sections.

Leslie Carlyle has returned from a three-year education leave (with allowance from CCI) and a one-year leave of absence during which time she completed her Ph.D. thesis on British 19th century oil painting materials, techniques, and pigments at the Courtauld Institute of Art, University of London, in London, England. As of May 1991, Leslie has resumed her duties as a conservator in the Fine Arts and Polychromes Section of CCI.•

International Conference on the Packing and Transportation of Paintings

A three-day conference on the packing and transportation of paintings was held in London, England, on September 9, 10, and 11, 1991.

The conference was co-hosted by the Canadian Conservation Institute of Communications Canada, the Conservation Analytical Laboratory of the Smithsonian Institution, the National Gallery of Art in Washington, and the Tate Gallery in London, England.

Objectives of the conference were to improve understanding of critical issues involved in packing and shipping works of art, and to rationalize and advance packing methods around the world. The conference presentations were aimed at museum and gallery personnel who make decisions about shipping and packing, as well as those who are involved in the actual process of packing or shipping. Simultaneous translation was provided in English, French, and German. For a complete report on the conference, see our next *Newsletter*.•

ICOM 1992 in Canada: Celebrate with Us!

In September 1992, ICOM members from around the world will meet in Quebec City to debate the major issues and ideas that challenge museums as they move toward the year 2000.

There will be behind-the-scenes visits to museums in Quebec City, Montreal, and Ottawa, plus many special events and post-conference tours in Canada and the United States. Join us in celebrating the 500th anniversary of Christopher Columbus's arrival in North America, the 350th anniversary of Montreal, and Canada's 125th birthday.

Explore new concepts and ways of working in museums, and examine the traditions that form the foundation of our heritage at ICOM 1992.

Recent Publications from CCI

The following new or revised publications are now available from CCI. Should you require additional information about CCI's publications, please do not hesitate to telephone or write to:

Chief, Extension Services
Canadian Conservation Institute
Communications Canada
1030 Innes Road
OTTAWA, Ontario
K1A 0C8 CANADA
Telephone: (613) 998-3721
FAX: (613) 998-4721.

Research Project Review - 1989

Technical Bulletin no. 12, "Controlling Museum Fungal Problems"

CCI Staff List (March 1991)

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CCI Notes no. 5/1, *Care of Ceramics and Glass*

CCI Notes no. 6/5, *Care of Quillwork*

CCI Notes no. 8/1, *Removing Mould from Leather*

CCI Notes no. 9/1, *Recognizing Active Corrosion*

CCI Notes no. 9/4, *Basic Care of Coins and Medals*

CCI Notes no. 9/5, *Tannic Acid Treatment*

CCI Notes no. 13/4, *Velcro Support System for Textiles*

CCI Notes no. 13/13, *Commercial Dry Cleaning of Museum Textiles*

CCI Notes Binders: New binders have been produced to hold and organize your collection of CCI Notes. These attractive binders make a striking addition to any library, and are available free of charge from the address given above.•

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