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The Gordion Furniture Project Or How I Spend My Summer Vacations

by Valerie Dorge

In mid-July of 1990, I arrived in Ankara, Turkey, to join the Gordion Furniture Project at the Museum of Anatolian Civilizations (Anadolu Medeniyetleri Müzesi). Two weeks later, I was thrilled to stand at the spot where this furniture was exposed to light for the first time in 2,700 years. I vividly recalled what I had read of this event, which took place 33 years earlier ...

On June 21, 1957, a group of men huddled anxiously in dim light at the end of a tunnel. The tunnel had been dug into the largest of the 80 or so tumuli on the plains of the Sakarya River at Gordion in Central Anatolia, Turkey. The men believed that this 53-metre-high tumulus contained the tomb of King Midas, known to us through legend as "Midas of the Golden Touch." He was ruler of the mighty kingdom of Phrygia, which in late eighth century B.C. was at its height of power. Gordion was the capital of this ancient kingdom.

In 1955 and 1956 test borings were made on the slopes of this large tumulus, designated Tumulus MM (Midas Mound), in an attempt to locate the tomb chamber. A smaller tumulus (Tumulus P) was also excavated in 1956. The roof of its wooden tomb chamber was found collapsed under the weight of the mound and many of the wooden and bronze objects inside were damaged. However, in the case of Tumulus MM, excavators, led by Professor Rodney Young of The University Museum, University of Pennsylvania, were optimistic that the tomb chamber might be found intact.

Excavation of the horizontal tunnel began on May 19, 1957 continuing from a trench dug from the outer rim of Tumulus MM (Figure 1). On June 12, workmen reached a stone wall. They cut a hole in the wall and rubble poured out. This was a major disappointment—perhaps the roof had collapsed. Observers were posted around-the-clock to watch for anything of interest in the rubble, which continued to pour out for three days.

When the rubble was sufficiently cleared to allow further inspection, a wall of roughly cut logs could be seen behind the stone wall. It was this log wall that the group anxiously faced at the end of the tunnel on June 21. This event was the culmination of years of research and planning. Discovery of the log wall had raised hopes that the stone wall was a

Figure 1. Tumulus MM during excavation in 1957.

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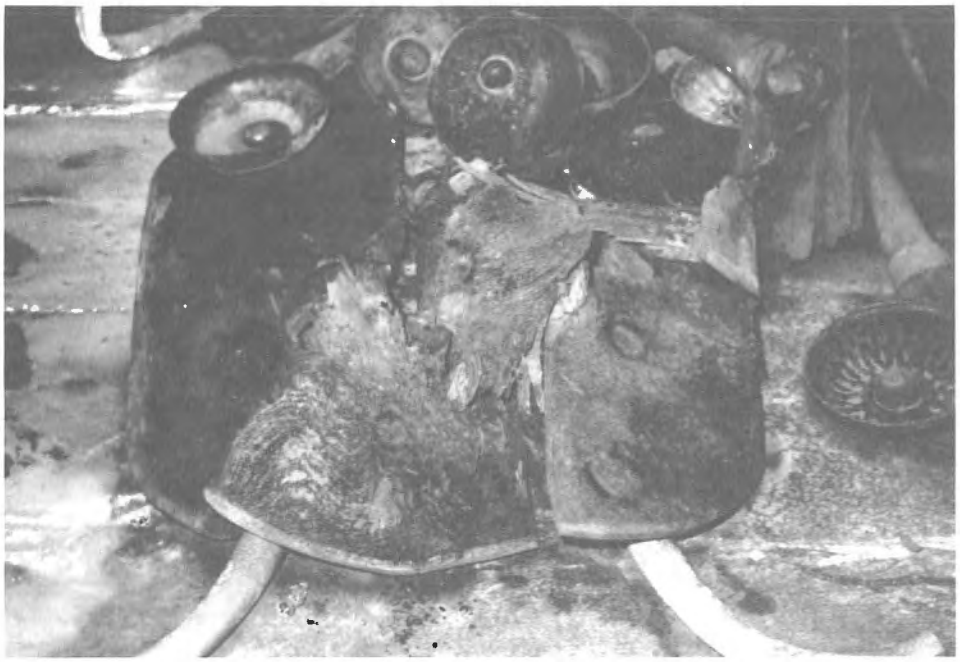

Figure 2. Plain Table 1 as found on the floor of Tumulus MM. Two of its three legs can be seen protruding from under the table top.

retainer wall and that the log wall face must belong to the tomb chamber.

A group member went to the nearby village to get an auger to drill through the logs. The auger was too small and drilling was postponed until a larger one could be sent. The following day when the larger auger had still not arrived, the excavators proceeded with the small auger. They drilled three holes through one of the thinner logs only to find "... rubble in all three; discouraged. But still cannot believe the roof broken and the tomb full of rubble inside."[1]

The excavators cut a "window" in the log wall allowing more rubble to drain off. The flow eventually became a trickle and the excavators could see the wall of an inner wooden chamber. This wall was constructed of trimmed and fitted logs. The larger auger finally arrived on June 23. Drilling through the 0.32-metre-thick wall seemed to take an eternity, but finally the bit went through. It was withdrawn and "Inside we find space: the tomb is intact!"[1] The excavators were jubilant. They cut a larger opening in this wall and found themselves peering into a log-cabin-like structure.

Directly in front of them a skeleton rested on what they thought was a "bed"— since identified as a coffin.[2] Leather and textile fragments and pieces of a bronze belt were found on and near the skeleton. Scattered around the tomb were numerous bronze jugs, omphalos bowls and large cauldrons, a cloth bag containing bronze fibulae, and wooden furniture in various states of preservation. "Two large inlaid throne backs" leaned against the east wall; in the centre of the floor were "... at least four tables bearing loads of bronze omphalos bowls. These have all collapsed ..." (Figure 2), and in the southeast corner lay "... at least two tables, collapsed. One of the tables was most elaborate, ..."[1]

There was no gold in the tomb. Based on the absence of gold in the other tumuli, this was not surprising. However, the tomb obviously was a rich depository of many fine objects. The quality and quantity of these objects indicated that the tomb had probably contained an important person. Perhaps it really *was* King Midas. The skeleton was later identified as male, approximately 65 years of age.

It was evident to the excavators that water had seeped through the tomb walls at some point. A small amount of water was still in some of the bowls on the chamber floor. The outer edges of the floor were damp and the furniture in these areas appeared more degraded than that in the centre of the chamber.

All the bronze objects were removed from the chamber shortly after its opening. Examination of the furniture in the tomb showed that much of the wood was damp. In an attempt to dry the wood slowly, all the furniture was left in the tomb. However, within weeks, a green mould appeared on the surfaces of some pieces. A more drastic drying method was then implemented. The two "throne backs" (which Young later called "screens", now known as serving stands) and the inlaid table (described as "elaborate") were soaked in water and alcohol baths to drive the moisture from the wood. This treatment was followed by a wax/"benzine" (gasoline) bath in an attempt to "reconstitute" the wood. The other tables (called "plain tables") were brushed with an Alvar (polyvinyl acetal) resin in acetone to consolidate them before removal from the tomb. The contents of the tomb, including the wooden pieces, were eventually transported to the Museum of Anatolian Civilizations in Ankara, where they were stored.

In 1980, in preparation for publication of Young's excavation data,[3] the field drawings of the tumuli contents were studied and compared with Young's field notes. During this process, errors were discovered in the furniture drawings. This was the impetus behind the Gordion Furniture Project. It was established under the auspices of The University Museum, headed by Dr. Elizabeth Simpson, to conserve, study and redo the furniture drawings, and to publish these with the results of the research.

Robert Payton began conservation treatment of the inlaid table from Tumulus MM in 1982.[4] The frame and legs of the table were consolidated under vacuum in a 5% solution of Butvar B98 (polyvinyl butyral) in ethanol/toluene 50:50. The two serving stands, Screens A (Figure 3) and B were consolidated in 1983. Although only a few fragments of the inlaid table's walnut (*Juglans regia*) top were intact, the intricate boxwood (*Buxus sempervirens*) framework was in surprisingly good condition. The serving stands of boxwood with juniper (*Juniperus foetidissima*) inlay were also in good condition, however, sections of their walnut tops and feet were severely degraded.

Conservation allowed for the handling and close study of these three pieces. As a result, accurate reconstruction drawings were made. Using Plexiglas® for support, the three pieces were reconstructed for display. They are now a central exhibit in the Phrygian section of the Museum of Anatolian Civilizations in Ankara.

Treatment and documentation of other pieces of furniture from Gordion continued through the 1984 and 1985 summer work seasons and has continued each summer since 1988. In 1990, I needed little persuasion by Dr. Elizabeth Simpson to participate as Furniture Conservator for the Project. My first step before going to Turkey was to master the rudiments of the Turkish language. This turned out to be quite a challenge, but I soon learned that the task came with abundant rewards. A knowledge of the language has made shopping for supplies in Ankara much easier and has helped me communicate with Turkish colleagues at the Museum, who so generously, and with immense tolerance, allow Project members to invade their small lab each summer.

By the end of the 1991 work season, seven of the eight plain tables from Tumulus MM, and a bed, table and inlaid stool from Tumulus P had been cleaned and consolidated. In 1989, to achieve improved consolidation, the concentration of Butvar B98 was increased to 10% and the ratio of ethanol/toluene was changed to 60:40. Since treatment, most of the pieces can be handled safely. The plain table tops, however, remain quite fragile and only minimal handling is possible. A serving stand from Tumulus W was cleaned in preparation for future consolidation. Tumulus W had been excavated in 1959.

During the conservation treatment, I had the unique opportunity to study this collection of ancient furniture. I am filled with admiration for the Phrygian craftsmanship. With a love of playful design, the Phrygians used the colours and working properties of various woods to create unique structural elements, intricate openwork and inlaid decorative surfaces. Boxwood, a close-grained, light-coloured wood, is used for most of the structural elements, and juniper, a dark wood, is used for most of the inlays. This creates dark-on-light designs of striking contrasts. The intricate, decorative design of some of the inlaid furniture is very different from the simple, elegant form of the plain tables, each with its tray-shaped solid walnut top and three smoothly-curved boxwood legs.

While the style of the Gordion furniture is markedly different from that of any other historical period, some of the craft techniques have changed little in the intervening two-and-one-half millennia. In fact, some of the techniques used in making the Gordion furniture are still used in modern, hand-crafted furniture construction. For example, lines were scored on tenons to mark the position of a pin that secured each leg to a table top. And rows of one to four lines were scored on some of the inlay pieces, presumably to keep these pieces in sequence during their positioning within the design.

A major project in the coming seasons will be the consolidation of the largest extant section of the coffin from Tumulus MM. The coffin was made from a cedar log, cut longitudinally and hollowed out, with a ledge at both ends.[2] One of these ledges, in a very dry, splintered condition, is awaiting treatment. The logistics of consolidating this large piece of wood with the facilities and equipment available in Ankara and the difficulty of achieving sufficient consolidant penetration have yet to be resolved.

It is hoped that all of the Gordion furniture can be cleaned and consolidated in the coming seasons, enabling this unique collection of ancient furniture to be fully documented and studied, and reconstruction drawings completed for publication.

A more detailed account of the conservation processes[5] will be available shortly, and other publications on the conservation and research done by Project members are planned.

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Acknowledgements

I want to thank Dr. Elizabeth Simpson for generously sharing her knowledge of, and

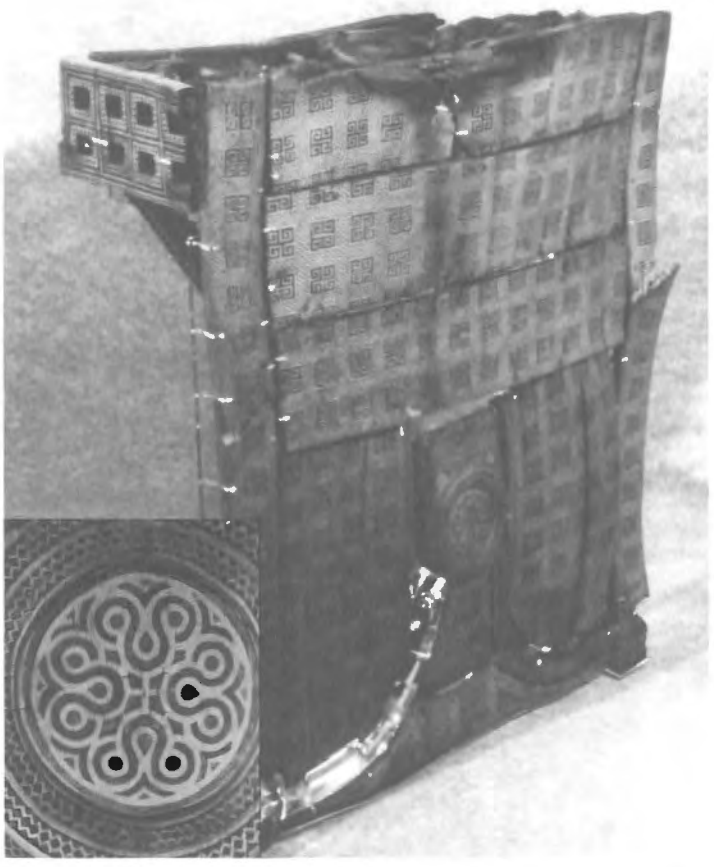

Figure 3. Screen A from Tumulus MM after conservation and reconstruction. Inset: Detail of rosette showing juniper inlay pieces of less than 4 mm in length.

enthusiasm for, the Gordion furniture. It has been her passion since 1978. It is Elizabeth's (almost) inexhaustible supply of patience that has helped the conservation team cope with the inevitable problems of shipping conservation supplies overseas and adjusting to local customs, temporary laboratory space, customs regulations and supplies terminology.

A number of conservators have participated in the Project, including Robert Payton, Lisa Goldberg, Andrew Todd, and Marian Kamanitz. Krysia Spirydowicz, Professor at the Art Conservation Programme, Queen's University, joined the Project in 1990 as Head Conservator. Funds from the Samuel H. Kress Foundation have allowed conservation interns to participate. Support has come from The University Museum, University of Pennsylvania; the Samuel H. Kress Foundation; the Getty Grant Program; the National Endowment for the Humanities; the Archaeological Institute of America; the American Research Institute in Turkey; and private sources. CCI has provided assistance in the form of my time for part of the 1991 season and upcoming 1992 season. Others involved in various special studies include Professor Robert Blanchette, Wood Pathologist, Department of Plant Pathology, University of Minnesota, and Antoine Wilmering, Furniture Conservator, The Metropolitan Museum of Art, New York.

Photographs, courtesy of the Gordion Excavations and the Gordion Furniture Project, The University Museum, University of Pennsylvania. •

Graffiti Plagues Rock Art Sites

by Ian N.M. Wainwright and Thomas G. Stone

A number of serious incidents of vandalism to rock art sites in the last year serve as an unwelcome reminder that rock paintings and petroglyphs are never out of danger from thoughtless individuals. Regrettably, there are some who do not share the respect and fascination that most Canadians have for these unique expressions of aboriginal culture. In their ignorance, vandals have despoiled countless sites in Canada and in other countries where prehistoric rock art is found.

It has been recognized for many years that vandalism poses a serious threat to the world's rock art heritage. Natural agents of deterioration, such as algae, lichens, frost, and accretion, result in the slow erosion of rock paintings (pictographs) and petroglyphs. Sometimes their effect can be mitigated by control of moisture, physical protection or other means. Vandalism, on the other hand, usually results in immediate, catastrophic and irreversible damage to rock art. This is particularly true in cases where graffiti has been incised, scratched or pecked into a rock surface. There have also been incidents of rock art being shot at, driven over, and physically removed by thieves. Although paint, crayon and charcoal graffiti can often be removed with careful treatment—even when they occur directly on rock art—this is not the case with scratched or incised graffiti.

Two incidents in Canadian parks illustrate the kinds of problems that are encountered when vandalism strikes rock art. The famous West Coast Trail, between Port Renfrew and Bamfield on Vancouver Island, passes by a number of petroglyph sites. For the most part, the sites, which

Tom Stone (left), Denice Wilkins and Ian Wainwright removing graffiti from rock near pictograph sites at Mazinaw Lake, Bon Echo Provincial Park.

are within Pacific Rim National Park, have been relatively free from abuse. One such site is located within a short walk of the narrows at the west end of Nitinat Lake. It consists of a low, undulating shelf of sandstone separated from the Pacific Ocean shore by a gravel beach. The site is open and exposed on the sea side, but protected on the land side by dense undergrowth except that two foot paths lead to it from the West Coast Trail, a short distance away. Most of the glyphs at the site are located above the high tide line, yet close enough to the shore to be subjected to ocean spray. They are historical or natural in their depictions: sailing ships, a figure on a horse, birds. There has been previous vandalism here: initials and dates from the 1930s, Mickey Mouse and Donald Duck from the 1950s, and some relatively recent initials and dates from the 1970s. In the summer of 1991, part of the site was vandalized with more initials and dates, a couple of stylized initials or logos, and two obnoxious, pornographic drawings.

Tom Stone, co-author of this article, was able to visit the site in the company of Ian Sumpter, an archaeologist with the Canadian Parks Service, to devise a plan of action to deal with this most recent occurrence. The rock has been defaced in two ways: by light scratching through a thin layer of algae covering the rock and by heavier incising using a sharp tool. Fortunately, most of the graffiti is of the former kind. In order to infill and thereby disguise the graffiti, a number of methods were improvised.

A combination of stippling with an ordinary graphite pencil and the application of locally available algae-containing mud seemed to offer the best and simplest approach for toning in the defaced areas. Samples of rock covered with algae were examined by Paul Hamilton of the Phycology Section, Botany Division, Canadian Museum of Nature. He noted that all of the algae species observed were of a kind that reproduce vegetatively rather than sexually and he estimated that it would take four to five years for them to re-colonize the areas of the rock that had been scraped. While it is possible that regrowth could occur more quickly, this is difficult to predict given the variables of moisture, temperature and exposure to light. It will not be possible to rely on nature to "restore" the glyphs in the short term.

Visitors to rock art sites who see graffiti done by others are more likely to add graffiti themselves. A priority in any rock art site management program must therefore be to remove or disguise graffiti as soon as possible after it occurs. Incidents of graffiti are increasing at a slow but steady rate at a major rock painting complex at Mazinaw Lake, Bon Echo Provincial Park, near Cloyne, Ontario. Vandalism of this kind is difficult to prevent because the rock paintings are readily accessible by boat. The paintings were executed, using red ochre pigment, along the shoreline at the base of a spectacular cliff.

CCI staff conducted an inventory of graffiti at Mazinaw Lake in 1980. At that time we observed three cases of engraved graffiti and seven cases of painted or spray painted graffiti. One graffito was completely removed and a second partially removed.

In October 1991 a second survey was undertaken by the authors, with John Taylor and Jeremy Powell of CCI, and Denice Wilkins and Gary Sharman of the Ontario Ministry of Natural Resources. Our goal was to determine the nature and extent of graffiti within the pictograph complex and to experiment with its removal.

We made our way up the shore of Mazinaw Lake by motorboat, landing occasionally to scramble over rocks and boulders to inspect black and fluorescent-orange graffiti. As we proceeded, we cross-checked our observations against an earlier survey conducted by Lyndsay Mollins Koene in August, 1991. Our combined observations revealed that there were now many more cases of graffiti. Some appear to have occurred in one incident near a shoreline "cave", which is a popular place to land small boats and canoes. Graffiti has roughly tripled in the past 11 years. More significant—and alarming—is that incidents of scratched or pecked graffiti have increased markedly.

We tried several methods of removing the spray painted graffiti. A commercial paint stripper, Super PolyStrippa®, worked best. From earlier research we knew that this kind of product can be used without affecting the original rock painting underneath the graffiti. (Appropriate health, safety and environmental precautions must be taken when handling this product; the active ingredient is the solvent methylene chloride). Solvent treatment was followed with a water rinse using a plastic squeeze bottle. Locally available soil was then rubbed into the areas treated. The soil was applied by hand and with a stiff plastic bristle brush.

A typical graffiti requires about two hours to remove and disguise. This underlines the fact that vandalism is also costly in time and human resources. In those cases where graffiti has been applied directly on pictographs, treatment must be undertaken by a qualified conservator. Careful consideration must be given to appropriate photographic documentation and infilling materials to avoid confusion with the original red ochre pigment used for the pictographs.

Further experimentation is required to determine the most effective way of obliterating or disguising engraved and lightly scratched graffiti. It may be possible to disguise them effectively by stippling with dry pigment. A star-nosed chisel could be tried to obliterate the graffiti without leaving pronounced cutting lines in the rock. All agreed that as much of the graffiti as possible should be removed or obscured before the next visitor season to prevent the spread of further vandalism.

Perhaps the key to protecting rock art sites, such as those in Pacific Rim National Park and Bon Echo Provincial Park, is to continue to promote public awareness of their historical and spiritual importance and fragility. Limiting access may also be an option at many sites. Regrettably, even with these measures, one cannot completely rule out vandalism, especially when park visitations are increasing every year.•

Further Reading

Gale, Fay. "Monitoring Visitor Behaviour at Rock Art Sites." *Rock Art Research* vol. 2, no. 2 (1985): 112-175.

Morwood, M.J. and Kaiser-Glass, Y. " The Use of Graffiti in the Monitoring of Community Attitudes Towards Aboriginal Rock Art." *Rock Art Research* vol. 8, no. 2 (1991): 94-98.

CCI Releases Video

A 10-minute colour video about conservation and the mandate and activities of the Canadian Conservation Institute is now available for public use. Upon request, CCI will loan the video free of charge to museums, galleries, libraries, training institutions, historical societies and other interested groups.

The video is available in French and English, in NTSC (VHS and BETA), PAL and SECAM formats. To obtain a copy, please contact:

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The Bronzing of Parliament Hill

by Lyndsie Selwyn

More than 50 bronze statues grace the grounds near the Parliament Buildings in Ottawa. The oldest statue, Sir George Étienne Cartier, was unveiled in 1885 and the most recent one, Lester B. Pearson, in 1990. These statues are works of art that commemorate important figures in Canadian history. They are high-profile sculptures that captivate the throngs of tourists who visit Parliament Hill each year. Public Works Canada (PWC), a department of the federal government, is responsible for the care of these statues.

Over the years, the statues have become discoloured, turning an overall green with disfiguring black areas and uneven streaking. These changes are largely due to the interaction of the statues' metal composition (and the original artificial patina) with an outdoor environment of acid precipitation and particulate matter (e.g., dust, gas pollutants, soot and salt). Since bronzes are made primarily with copper (alloyed with small amounts of tin, zinc or lead), the main corrosion products that form after prolonged outdoor exposure are copper compounds.

It is not only corrosion that causes deterioration of the statues, but also human interference. This includes everything from spray painted graffiti, to excessive handling (Figure 1), to climbing on the statues for photo opportunities, to detaching or breaking statue accessories. Even perching birds and nesting squirrels or hornets contribute to the problem.

In 1987, PWC identified a need to have these statues treated by a conservator to enhance their appearance and retard their deterioration. CCI was contacted and Charles Costain, Judy Logan and I became involved in the project. Treating outdoor bronzes requires the technical knowledge of bronze casting, art conservation skills, and experience in cleaning large metal works of art. Though few conservators work in this area, we were able to recommend specialists with the necessary skills.

We arranged for four professional conservators, two Canadians (Andrew Todd and Craig Johnson) and two Americans (Andrew Lins and Linda Merk) to visit

Figure 1. The lion, associated figure of Queen Victoria bronze monument, shows evidence of excessive handling along the tail.

Ottawa for three days and work jointly as consultants in examining and assessing the conditions of the statues. The four conservators spent two days examining the bronzes and the final day discussing treatment options. After their visit, they each wrote a report containing an overall condition survey of the statues and general treatment proposals.

Attending the final-day discussions on treatment were members of a newly formed Curatorial Committee, which consisted of staff from PWC, the National Gallery of Canada, the House of Commons and CCI. The Curatorial Committee was to act as a conservation advisory committee, advising and making decisions about the treatment and final appearance of the statues as work progressed. The Committee was also to search historical records of the bronzes for information pertaining to each statue's original appearance; its material composition; how it was sculpted and cast; the patination chemicals and techniques used; and how the statue was installed.

Following submission of the guest conservators' reports, PWC initiated a major conservation project to have the statues treated. Qualified Canadian conservators interested in the task were asked to examine the statues and submit a separate treatment proposal for each one. In Canada, professional conservators are usually affiliated with conservation associations such as the Canadian Association of Professional Conservators (CAPC) and the International Association for Conservation – Canadian Group (IIC-CG).

The conservators' proposals comprised a condition report, a detailed treatment proposal and a breakdown of costs. Their proposals addressed specific conditions. If the statues were to be treated on-site during the summer months, the conservators gave an estimate for all the necessary equipment, including cranes, trucks, and scaffolding. Also included was an estimate for hiring and supervising one or more conservation students. These students were hired primarily to gain experience in the treatment of bronze statues, but also to field the many questions expected from tourists and the media.

If statues were to be removed and treated elsewhere, the conservators provided a cost estimate for the removal, transportation and return of the statues; for the work space and equipment rental; and for the insurance to replace or repair the statues while off-site in the care of the conservator.

Each proposal was evaluated by PWC, CCI and the Curatorial Committee. This

evaluation was based on cost, technical rating and completeness of the proposal. A designated project manager from PWC made the final decision in awarding each contract. Once it was awarded, treatment began.

A preliminary step before treatment was to obtain corrosion samples, and I was involved in collecting these from the first statues to be treated. Using a dental pick (Figure 2), samples were gently scraped into a plastic sample vial, labelled and stored for later analysis. Although not critical for the treatment of the statues, information contained in the analyses of corrosion products from outdoor statues is of international interest. For example, interest in corrosion products increased during the restoration of the Statue of Liberty in New York City. CCI is also interested in the study of corrosion on outdoor bronzes and so has contracted with a scientist (David Downham initially, then Marilyn Laver) to carry out further collection and analyses of these corrosion products. This work is now in progress.

During treatment, the Curatorial Committee met several times to observe the progress and decide on the final appearance of each bronze. After treatment was completed, the conservator compiled a report, which consisted of treatment documentation, photographs of the conservation process and recommendations for ongoing maintenance.

Since the first contract was awarded in 1987, more work has been contracted out to professional conservators, so that a few statues are treated each year. The first statues treated, Truth and Justice, sculpted by W.S. Allward, were completed in 1989. These stand in front of the Supreme Court of Canada. Eight other statues received treatment in 1990, and the Queen Victoria bronze monument, including associated allegorical figure (Figure 3) and lion, sculpted by Louis-Philippe Hébert, were treated in 1991.

Figure 2. Taking samples of corrosion products from bronze for study and analysis.

The project is continuing. Subject to funding, the remaining statues will be treated over the next few years. With the continued co-operation of PWC, CCI and the Curatorial Committee, conservators can count on expert input and joint decision making on the conservation treatment and final appearance of the Parliament Hill bronzes.•

Figure 3. Allegorical figure of Queen Victoria bronze monument before treatment.

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.

Based on the theme "Museums: Rethinking the Boundaries?" conference participants will explore and redefine the role of museums in contemporary society. This will provide an excellent opportunity for members of the conservation community to get together with colleagues to examine how the role of conservation may change as museums evolve.

There will be behind-the-scenes visits to museums and conservation laboratories in Quebec City, Montreal, and Ottawa, plus many special events and post-conference tours in Canada and the United States. Explore new concepts and ways of working in museums, and examine the traditions that form the foundation of our heritage at ICOM 1992.•

Who's Who at CCI — Nancy Green

by Martha Perry

Many of our *CCI Newsletter* readers already know Nancy Green from her involvement as tour co-ordinator for the Mobile Laboratory Programme, from her participation at various provincial museum association meetings and now as Training Officer of Extension Services. Those who have worked closely with Nancy know of her invaluable attention to detail and her dedication to the delivery of CCI's services. Those who have not yet met Nancy will recognize her immediately by her enthusiasm and her buoyant personality.

Nancy was born in International Falls, Minnesota but grew up in Fort Frances, Ontario. After completing secondary school, she travelled to Winnipeg, Manitoba and attended business college. Having completed that, Nancy began her career as a medical secretary and then accepted a legal secretary position. Each position's emphasis on detail and accuracy prepared her well for the challenges ahead. Over the years Nancy held various positions as an executive secretary in Ottawa and in 1980 she began working for the National Museums of Canada. By 1981, she was working at CCI. It seems she found her niche in the heritage field.

In 1979 the Canadian Conservation Institute initiated the Mobile Laboratory Programme of which Nancy became an integral part. The program consisted of six big blue trucks—mobile laboratories that CCI conservators and interns staffed and toured to many museums and galleries around the country. The labs were on the road from May to September for a period of eight years. Still today, they are what people recall first when CCI is mentioned.

Nancy Green, Training Officer, Extension Services

From its inception, the Mobile Laboratory Programme required organization on a massive scale. Each year CCI received more requests for visits than could be made and priorities had to be set in consultation with the museum community and the provinces. It wasn't long before Nancy's and her colleague's offices were taken over by records of complex itineraries and wall-sized maps that pinpointed staff routes and destinations. It was Nancy's job to make sure the right staff member got to the right place in the most efficient manner—not always an easy task! It's quite likely Nancy could have published her own travel guide to Canada during that period, if only she'd had the time.

When the Mobile Laboratory Programme was discontinued in 1986, Nancy took on new challenges. Currently, as Training Officer for CCI, one of her jobs is to support CCI's seminars and workshops. To do this, Nancy works closely with provincial committees and museum associations to establish the needs of the community. She applies her well honed skills, ensuring that people get to where they should be and when, with all the right props. Certainly from the point of view of CCI staff, her work makes the success of this service possible.

In addition, Nancy is responsible for the co-ordination of CCI's Internship and Fellowship programs. In both cases, not only does she efficiently run the programs, but she makes sure that newcomers to CCI are well taken care of and welcomed. Her involvement with each person continues until the internship or fellowship is complete; she is always available to ease their way.

Nancy Green has, for a long time, been an essential part of the Canadian Conservation Institute. Her tireless efforts and commitment have contributed greatly to the services provided by CCI. Her steadfast optimism and sense of purpose have allowed her to focus on, and direct others toward, the goals of the Institute. For those who don't already know Nancy, undoubtedly you soon will.•

Conference Highlights on Packing and Transporting Paintings

by Charles Costain

The International Conference on the Packing and Transportation of Paintings was held in London on September 9 to 11, 1991. The conference was co-hosted by the Canadian Conservation Institute (CCI), the Conservation Analytical Laboratory (CAL) of the Smithsonian Institution, the National Gallery of Art in Washington (NGA), and the Tate Gallery in London. Four hundred delegates representing over 20 countries attended the three-day conference.

Papers presented at the conference covered two related aspects of packing and shipping paintings: the process of assessing the risks involved in lending a painting and the technical aspect of how best to protect the painting in transit. There were a number of important factors that emerged related to the fragility of the paintings, the transportation environment, and the design of the packing case.

Fragility

The sensitivity of paintings to fluctuations in relative humidity (RH) has been investigated over the past 10 years and is generally recognized as a cause of damage for paintings. Research presented at the conference showed that low temperatures cause increased stiffness of oil paint and glue layers, which can result in extensive cracking. Acrylics also become very brittle at lower temperatures.

Paintings are also vulnerable to damage from shock and vibration. Although every painting is different, research with model paintings indicates that a typical painting in sound condition should be able to withstand a shock of 50 G without damage. This value is substantiated by practical experience; well designed packing cases, such as those used by the Tate Gallery and the NGA, provide protection to about 40 G. It was shown that damage to paintings that occurs as a result of shock is largely due to the deformation of the stretcher on impact; the use of backing boards makes the stretcher more rigid, allowing model paintings to withstand impacts of up to 200 G without damage.

The levels of stress generated by vibration during transit are low compared with the strength of the materials used in the painting. However, secondary effects of vibration such as the slapping of canvas against the cross bar or stretcher bar can cause cracking and damage to the paint layers. The risk of this type of damage from vibration can be minimized by the addition of a backing board on the painting, or by the use of a stretcher lining.

Transportation Environment

There are two distinct situations that must be considered when a parcel is shipped; a handling phase when it is at a transfer point (awaiting pickup or being loaded onto the carrier) and the transportation phase, when it is actually in the moving carrier.

It is very important to control the temperature around the packing case throughout the journey, both at transfer points and in the carrier. Insulation in the case can reduce the rate of temperature change that the painting will be exposed to, but it cannot prevent temperature change. Humidity control around the packing case is less critical, as the humidity within the packing case can be controlled relatively easily.

The greatest danger of shock to a package occurs at transfer points, where it is handled, and at times dropped or knocked over. Once loaded into a carrier and secured, there is a much lesser risk of any comparable shock occurring.

All packages are subject to vibration during transportation in a carrier. The vibrations incurred in transportation by road are more severe in comparison with transportation by air, rail or sea. Trucks with air-ride suspension have lower shock and vibration levels than trucks with conventional suspension systems. Truck maintenance is also very important in minimizing vibration.

Package Design

The function of the package is to protect the contents from hazards during transportation. If the transportation environment is well controlled (e.g., when a climate-controlled museum vehicle is used locally, or a fine art courier is used on longer trips), less protection is needed from the packing case.

As noted earlier, the use of insulation is not an efficient method of controlling temperature changes. The more insulation, the larger and bulkier the packing case. However, insulation is necessary if there is a possibility of the packing case being exposed to temperature extremes during transit.

In order to provide as stable an environment for the painting or panel as possible, the moisture content of the painting should be kept constant. This is most easily achieved by wrapping the painting in a moisture barrier, such as polyethylene sheeting, and sealing this with tape. Care must be taken to prevent the plastic sheeting from coming in contact with the surface of the art work. Studies have shown that this method is effective in keeping the moisture content of the work constant even if temperature variations occur. The chances of condensation taking place within the moisture barrier during transit are negligible.

The choice of suitable cushioning foams should reduce the impact on the painting to less than 40 G if the packing case is dropped from a height of 75 cm. The performance of various cushioning foams can be predicted by referring to dynamic cushioning curves (available from the manufacturer) or by using the *Circular Slide Rule for Package Design* or the computer program *CCI-PADCAD*, both available and developed at CCI, and referred to in *CCI Newsletter* No. 8, published last October.

Publications

For readers interested in more information on the transportation of paintings, two publications were produced for the conference in London. *Art in Transit: Studies in the Transport of Paintings* contains much of the research information that was presented at the conference, and *Art in Transit: Handbook for the Packing and Transporting of Paintings* is a practical reference handbook. These publications can be ordered from the Publications Mail Order Department of the National Gallery of Art in Washington (Telephone (301) 355-5900).•

20th Anniversary - CCI
20e anniversaire - ICC
1972 - 1992

This year marks CCI's 20th Anniversary. As we look back over the years we see a long list of achievements—some accomplished in the early years of "trial by fire" when we struggled through the growing pains, and others accomplished in the ensuing years as we witnessed a young Institute grow into a leading authority in conservation. Yes, we have much to be proud of. And we know our achievements have come only through enthusiasm, hard work, commitment and determination on the part of all staff at CCI. So now it's time to pat ourselves on the back, have a little fun and look at how we've evolved. Join us as we celebrate this important year in CCI's history—watch for our special 20th Anniversary edition of *CCI Newsletter* coming your way soon!

Symposium '91: Saving the 20th Century

by David Grattan

In September CCI held an international conference devoted to the conservation problems of modern materials. Plastic sculpture from the 1920s, fashion garments from the 1960s, and aircraft from World War II exemplify the objects discussed. Approximately 300 delegates representing 14 countries attended sessions on plastics, rubber, synthetic textiles, modern paintings, and plywood and modern metals. They also participated in an open discussion and visited conservation laboratories and museums.

Our objectives in holding the meeting were not only to share information with other conservators and to stimulate research, but also to make museums more aware of the serious conservation problems they face, and to bring them up-to-date with the latest conservation techniques for modern materials.

An exhibit on degraded modern materials from the Canadian War Museum collection generates interest among participants at Symposium '91.

Now that the dust has settled, we are perhaps in a better position to take account of what took place and to gauge whether the conference achieved its objectives. The question, "Are we any further ahead?" arises.

The answer is that it certainly seems so, although the progress is sometimes not obvious. Speakers at the conference repeatedly described problems to which there are no immediate solutions, which initially left many delegates feeling quite overwhelmed. It is perhaps only now that we realize just how difficult the problems are that face us. This recognition of the true nature of our difficulties is surely a sign of real progress.

A second question comes to mind, "Have there been any more concrete developments?" It became clear during the Symposium that the last few years have actually seen much progress. Conservators have been cataloguing, observing and describing problem artifacts, resulting in the accumulation of much useful data. For example, cellulose nitrate is remarkably unpredictable in degradation, yet some patterns are beginning to emerge. This means we will soon be better able to say which objects are most at risk. Another important step forward is that the scientific information available to conservators has radically increased. Far more is *generally* known about the processes of decay and the nature of materials. Another very significant point is that conservators have developed a variety of practical techniques for dealing with decaying materials, and while these do not have the effect of stopping the decay, they will certainly mitigate its effects. For example, classification and separation of plastics by composition can prevent one material from contaminating another by acidic volatile emissions. In the absence of true conservation treatments that eliminate degradation, control of the environment is paramount. Addressing this issue, simple techniques for absorbing harmful volatile emissions and for producing oxygen-free atmospheres have been developed and reported. Thus new environmental standards are emerging.

But perhaps the most beneficial of all activities is that we are developing a network of people interested in the conservation of modern materials. In addition, new sources of information and organizations willing to help the profession have become known. Representing the Malaysian Rubber Producers' Research Association in the United Kingdom, John Loadman spoke at the conference on the history and conservation of rubber. This organization is an almost unparalleled resource for information on rubber. Experts in the degradation of polymers, Dr. David Wiles from Victoria, B.C. and Professor Jacques Lemaire from the Centre national d'évaluation de photoprotection, in France, shared much information with colleagues at the conference.

The Symposium thus was successful in bringing people together who had not previously met and who would not have done so otherwise. Certainly the ingredients of a successful conference were all present: the papers were informative, the receptions excellent and those who came made useful contributions. It was thus a most valuable gathering, and there is much anticipation of the published proceedings. These are now being edited and will be printed within the next few months.

We can only hope that the impetus given to the field of conservation through Symposium '91 will lead to productive and practical help for museums.•

Kudos to CCI Employees!

The following staff at CCI received Employee Recognition Awards based on nominations submitted to the Department of Communications Screening Committee.

Marie-Claude Corbeil, Ian Wainwright, Jeremy Powell and Jane Sirois received an award for their outstanding scientific examination of *The Leopards*.

Carl Schlichting, Janet Mason and Stan Frydryn received an award for the excellent team effort involved in the conservation of the 16th Century Tile Stove, currently on exhibit at the University of British Columbia Museum of Anthropology.

We commend these employees for the tremendous skill and effort that went into these projects, and we thank them for their contributions and the recognition that they bring to CCI.•

Deputy Minister Alain Gourd (centre) presented Employee Recognition Awards to CCI staff (left to right): Ian Wainwright, Jeremy Powell, Jane Sirois, Marie-Claude Corbeil, Janet Mason, Stan Frydryn and Carl Schlichting.

PREMA Zambia

by Bob Barclay

During last September and October I taught the first six weeks of a three-month course on collections conservation management at the Livingstone Museum in Zambia. The course was organized by the Prevention in Museums of Africa (PREMA) program of the International Centre for the Study of the Preservation and the Restoration of Cultural Property (ICCROM). PREMA offers an 11-month course in Rome for participants from countries in sub-Saharan Africa, and also organizes two three-month national courses each year in African countries.

The national course features lectures and demonstrations on preventive conservation, characterization of materials and their degradation, control of museum pests, artifact storage, and general basic conservation treatment. The aims of the course are to introduce participants to all facets of conservation, and to help them gain an understanding of the essential nature of conservation and where it fits in museum management. The course also emphasizes the role that a preventive approach can play in arresting artifact deterioration.

Conservation treatment as practised in North America is a luxury few museums in developing countries can afford. It is sufficient, for this decade at least, to begin with the basics and to provide a solid foundation of preventive practice. Only after such a foundation has been established can the more sophisticated restorative work begin.

To a large extent the practice of preventive conservation relies more upon information than sophisticated apparatus. The techniques recommended in the courses in Africa are those that can be performed easily by untrained personnel, using local materials. This allows course participants to learn practical techniques while teaching and supervising others, without the need for diverse and specialized knowledge.

In last year's course the 22 participants came from several parts of Zambia. Most were from the area of Livingstone (Maramba), which houses the National Museum, the Heritage Commission and the Railway Museum. Others came from Limulunga to the northeast, Ndola in the Copper Belt on the border of Zaire, and Mbala to the far north on the edge of Tanzania. Two participants from Mozambique were also invited.

Although several of the 22 participants were conservators or had some conservation training or background, most had curatorial or research responsibilities. This meant that the level of expertise varied considerably, making presentation of the course material quite a challenge. Fortunately, experience from CCI seminars and workshops in Canada prepared me well for this. In both environments I learned about the contrasting levels of capability and training among participants. This confirmed for me that flexibility is an essential teaching prerequisite.

Conservation and collections care in the museums of Zambia are an ongoing battle. Museum personnel must contend with wide extremes of humidity, from the parched conditions of the dry season to weeks of continuous rain. Such fluctuating environmental conditions cause damage to all organic materials, and even the most stable metals are prone to corrosion when the humidity hovers around 100 per cent. Insects are especially damaging. In addition to the harm that moths

and wood-boring beetles bring, there is devastating destruction by termites. Whole collections of wooden objects can be reduced to thin shells and powder.

Outside the museum environment and for the spectacle-minded, "Zambia is the real Africa" as the posters proudly proclaim. Wildlife abounds, especially in the game park that borders Livingstone to the south. Giraffe, zebra, elephant, gnu and antelope are common, while in the Zambesi, sightings of browsing hippos and crocodiles are frequent. The many monkeys are a nuisance, particularly in the areas where tourists pause to eat and drink.

Only 15 minutes' drive from Livingstone are the Victoria Falls. Spanning over one-and-a-half kilometres from side to side, the falls provide a fabulous backdrop. The gorges below offer some of the most spectacular scenery in Africa—a rock climber's paradise of deep fissures and vertical cliffs. Several sites where early humans first shaped stone tools are open to the public.

Nevertheless, Livingstone is not all pleasant at the end of the dry season. Water supply is uneven at best, the land is dry and dusty, and even the magnificent Victoria Falls are reduced to a mere trickle. One dreams of rain. Aside from the business of running the course, the daily necessities of boiling water for drinking and wondering how clean one can get in two inches of brown water, tends to sap the energy.

However, Zambia was an interesting place to stage a course, especially at this time in the country's political history. The first multi-party elections were to take place at the end of October, ending the 27-year rule of Kenneth Kaunda's United National Independence Party (UNIP). This was to be only the second African country to pass from a single-party system to an elected democracy. The chief contender in the democratic race was Frederick Chiluba and his Movement for Multi-Party Democracy (MMD).

All Africa was watching carefully, and the Zambian people were in a state of high excitement, most witnessing an event entirely new to them. Everywhere I went there were slogans, hand signs, t-shirts and all the other western electoral metaphors. Yet here, used with such novelty and joy, these familiar symbols were a pleasure to see. Being in Zambia at this time was indeed a refreshment to my jaded Canadian vision of the political process.

Since the election things continue well in Zambia. The transition to power by Chiluba's MMD was smooth and painless—a true model for Africa to follow. As for future preventive conservation courses in African countries, there will be more. I only hope the participants and teachers involved will experience as much excitement as Zambia provided me.•

Taking time out, Bob Barclay (centre) poses with participants at the Livingstone Museum in Zambia.

A Year in British Columbia

by Thomas G. Stone

Late last August, I returned from a one-year professional development leave at the University of British Columbia Museum of Anthropology. I undertook this leave with two main purposes in mind. The first was to gain conservation experience in a museum setting and the second was to become more familiar with access and repatriation issues relating to aboriginal collections. These latter issues have involved the Museum of Anthropology very much over the years.

After working in administration for the past six years or so, I was absolutely delighted to be directly involved with artifacts and to have the opportunity to do some bench work again. It was especially gratifying to use newly developed materials and techniques that to date I had only read about.

At the Museum of Anthropology a great emphasis is placed on preventive conservation activities. I was involved in a project of this kind that dealt with the implementation of earthquake mitigation procedures for stored artifacts. Procedures and techniques, which have been documented in the literature and successfully used in the 1989 Loma Prieta earthquake in the San Francisco Bay area, were adapted to stabilize a wide range of artifacts in the Museum's Visible Storage area.

The Museum, being an integral part of the University of British Columbia, is actively involved in the University's teaching program. For me, this meant many teaching opportunities. I co-taught Anthropology 452, "The Conservation of Inorganic Materials" with the Museum's conservator Miriam Clavir, and participated in many other specialized lectures and presentations to the public, native youth groups

and special interest groups. Personally, this turned out to be one of the most enjoyable experiences while at the Museum.

I also had the good fortune to assist Miriam in formulating the IIC-Canadian Group conservation submission to the Assembly of First Nations/Canadian Museum Association Task Force on Museums and First Peoples. The submission examines conservation issues surrounding increased access to collections by First Peoples as well as the repatriation of artifacts.

However, the most exciting aspect of the year's leave was having the chance to work directly with curators, designers, collections managers and native groups. For conservators who work in museums and galleries this is all part of their day-to-day routine, but for me, it is a very exciting and stimulating change. Working with such an integrated group lent a dynamism and wholeness to the conservation approach, which I found very satisfying.

The Museum of Anthropology often hosts performances by native and non-native dance and theatre groups as part of its interpretive program. Having the opportunity to see these performances and to talk with such a mix of creative and talented people from the performing arts was a somewhat unexpected bonus. It added yet another dimension to the whole experience.

What more can I say? The year was professionally rewarding to an extent I had not anticipated. In short, it was great!•

Teaching Conservation To Non-Conservators: Recent Activities

by the IIC-CG Training Committee

The International Institute for Conservation–Canadian Group (IIC-CG) is Canada's principal professional organization for conservators. It has an active publishing program, and each year holds a general meeting and conference preceded by a professional development workshop.

In May of 1989, the pre-conference workshop focused on teaching conservation to non-conservators. This event brought together conservators of all types who are called upon to teach a broad range of conservation topics to a wide variety of learners. The workshop featured lively discussion on teaching methods, delivery mechanisms and particularly, curriculum design. Workshop participants found that they shared similar concerns related to teaching. These included a lack of agreement on basic curriculum; a lack of consensus on appropriate topics; difficulties in communicating with course initiators; unrealistic expectations of students; and a lack of knowledge about teaching techniques among professional conservators.

At the general meeting following the workshop, IIC-CG struck a standing committee to study training issues. The Training Committee's first assignment was to focus on conservation training for non-conservators, with a specific mandate "to establish, through consultation, guidelines for curricula for teaching conservation to non-conservators in Canada." Several goals were set: to survey current activities and perceived needs of the Canadian conservation community regarding the training of non-conservators; to define appropriate topics to be taught to non-conservators; to recommend course content for each topic defined; to suggest a sequence for presenting the topics defined; and to consult with course organizers, such as museum associations and educational institutions, about the proposed course content for each topic.

During 1990, the Training Committee sent out a questionnaire to all Canadian members of IIC-CG. Its purpose was to solicit information on teaching experiences and opinions on appropriate topics of instruction for non-conservators. The questions addressed specific concerns. Should conservation training for non-conservators be restricted to preventive care of collections, or is teaching conservation treatments appropriate? If teaching conservation treatments is appropriate, which types of treatments should be taught? How does one distinguish between preventive conservation and treatment conservation in such activities as "hinging a paper document to a support" or "dusting a basket"?

The questionnaire sought data on such other considerations as length of courses, prerequisites, testing methods, follow-up and assistance from the organizing body. To date, statistical data has been collated and study of the text-answers continues. A final report of all results is expected early in 1992.

Initially the questionnaire was sent out by the Committee to 302 members. The Committee received a 44 per cent response rate. Of the 135 respondents, 71, or just over half had taught non-conservators in the two years prior to the survey. These teachers had given a total of 211 courses. Most common were half-day courses or courses of two to three days' duration. Teaching responsibilities were equally shared by a single conservator or jointly by two or more conservators.

The instructors were usually responsible for determining course content independently or in consultation with organizers. Few courses (31%) had prerequisites, and about the same number were credit courses for university or professional development certificate programs. Where class size was limited, there was an average maximum enrollment of 11 students. However, when all courses were considered, 27 was the average number of students per class.

Course organizers most frequently included the respondents' own institutions, other institutions who brought in outside conservators, universities, and provincial heritage organizations. Course participants usually came from heritage or art institutions, with curators and collection managers constituting the majority. Other participants were university students and volunteer staff.

A lecture format augmented with slide presentations was the preferred method of instruction among conservators. Hands-on sessions, demonstrations and group discussions were also used. Courses rarely included student performance tests; 62 per cent of the courses did not contain an evaluation component. Of those courses that did, final exams, take-home papers and in-class evaluations were the most popular. Similarly, most courses (71%) had no grading system

known to the instructors. Most instructors made themselves available to their students for follow-up and advice in person, by telephone, or by mail.

Overall, the respondents were satisfied with their courses, despite the concerns they had expressed at the May workshop. Their chief concerns were that courses were too short for the amount of material covered; that student background information was unavailable to them; that ongoing follow-up and contact with students was lacking; and that classes were usually too big.

The questionnaire also asked conservators what topics they covered in their courses. In 88 per cent of the courses "factors of deterioration" and "care of collections" were popular topics, while in 73 per cent "assessing the condition of artifacts" was favoured. In the "factors of deterioration" section, the courses covered environmental factors (83%), storage methods (73%), handling (71%), and stable materials for use with artifacts (69%). Only 29 per cent of the courses taught students how to carry out conservation treatments.

An extensive inquiry was made into conservators' definitions of preventive conservation versus treatment conservation, and their attitudes toward teaching treatments. All respondents with or without recent teaching experience were asked to classify certain actions as preventive conservation or treatment conservation, and to indicate when they couldn't decide between the two. Disappointingly, but to no-one's surprise, there was no strong consensus one way or the other, except in a few limited areas.

In the same section of the questionnaire respondents were asked to comment on the appropriateness of teaching non-conservators to do certain activities. "Dusting various objects" and "encapsulating paper documents" were the only activities considered appropriate. Clearly, conservators were reluctant to let unsupervised non-conservators perform the most simple tasks. Interestingly, those respondents who had actually taught courses generally had more faith in the abilities of non-conservators.

This questionnaire represents the first time that conservators have formally been polled on their feelings about teaching conservation to non-conservators. The Committee needs to know what conservators think should be taught, and also what the students want to learn. Instructors often perceive what needs to be taught and how, much differently than their students do. However, adult learners have the right to articulate what it is they need to learn in order to grow professionally.

For future planning of course curricula, the IIC-CG Training Committee will be soliciting the assistance of training sponsors, such as museum associations, in finding out what is needed. Training co-ordinators across Canada will be asked in the coming months for suggestions they have received through membership surveys and course evaluations. They will also be polled on their opinions on the present state of conservation training, and how their needs might be better met.

Non-conservators taking conservation courses during the coming months will also be surveyed on their perceptions of courses they have taken and on further conservation training needs. Interested teaching conservators who responded to the 1990 questionnaire will be asked to administer student surveys at the end of their courses. In this way the Committee hopes to gain a limited but accurate picture of student opinion.

The IIC-CG Training Committee welcomes participation in this process from anyone interested in conservation training for non-conservators. Please send relevant comments and questions to:

Ms. Sandra Lougheed,
Chairperson,
IIC-CG Training Committee,
281 Boston Avenue,
Toronto, Ontario
M4M 2V4,
Telephone: (416) 466-6133.•

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.

The 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

Judith Southward, Queen's University, Kingston, Ontario; June 10 to September 6, 1991 (Ethnology Section).

Joanna Arszynska, Nicolaus Copernicus University, Toruń, Poland; September 5 to October 15, 1991 (Fine Arts Section).

Todd Vassallo, Manitoba Museum of Man and Nature, Winnipeg, Manitoba; September 3 to November 29, 1991 (Ethnology Section).

Sylvie Labroche, University of Paris-I (Panthéon-Sorbonne), Paris, France; September 3, 1991 to February 28, 1992 (Archaeology Section).

Gaelen Gordon, Sir Sanford Fleming College, Peterborough, Ontario; September 3, 1991 to April 30, 1992 (Textiles Section).

Beverley Lambert, Sir Sanford Fleming College, Peterborough, Ontario; September 3, 1991 to April 30, 1992 (Ethnology Section).

Michael Hayes, Sir Sanford Fleming College, Peterborough, Ontario; September 23, 1991 to May 22, 1992 (Furniture and Wooden Objects Section).

Henriette Schokking, Private Conservator/Restorer, Rome, Italy; October 1, 1991 to March 20, 1992 (Ethnology Section).

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

Michael Beddoes, University of Victoria, British Columbia; April 1 to July 31, 1992 (Ethnology Section).

Fellowships to be announced in the next *CCI Newsletter*.•

Comings and Goings

Judy Logan, Chief of CCI's Archaeology and Textiles Sections, is away on French language training.

Colette Naud, Conservator in CCI's Fine Arts Section, has taken a one-year leave of absence to work as a conservator of paintings at the Centre de conservation du Québec in Quebec City.

Mary Peever, former Conservator in CCI's Ethnology Section, has assumed the position of Conservator at the National Museum of the Cayman Islands. The Museum's collections reflect the history of the Cayman Islands, ranging from underwater wrecks, to natural history, to fine arts. Mary will be setting up conservation facilities as well as hiring and training conservation technicians.

Martha Perry, former Administrative Assistant of Conservation Services, has taken a one-year leave of absence to pursue studies in writing and literature.

Brynne Ringer, former Registrar of archaeological objects at CCI, has assumed the position of Assistant Registrar, Archaeological Collection, Headquarters, Canadian Parks Service.

Tom Stone, Chief of CCI's Ethnology and Furniture Sections, returned in late August from a one-year professional development leave at the University of British Columbia Museum of Anthropology.•

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.

June 1991

Dr. Leslie Carlyle and Alan Bird examined a large painting by Alfred Pellan on display at Mirabel Airport and made follow-up recommendations on its condition and conservation needs to Transport Canada.

Judy Logan and Maureen Williams surveyed a collection of archaeological materials stored at the Officers' Barracks in Fredericton, New Brunswick.

Mary Peever presented "Sacred and Secret Objects: Cultural and Professional Perspectives" at the general session of the American Institute of Conservation (AIC) Conference in Albuquerque, New Mexico. She reported the similarities and marked differences in the treatment of cultural objects by ethnographic conservators along with other colleagues, Tom Mosbey, from Torres Strait, Australia, and John Moses of the Six Nations Iroquois Confederacy. Deborah Stewart also attended the general conference and the pre-conference session on disaster planning.

Carl Schlichting gave two presentations for the Association for Living Historical Farms and Agricultural Museums, in Alberta. He presented a session on decals at the Ukrainian Cultural Heritage Village in Edmonton and a session on paint sampling at Reynolds Museum in Wetaskiwin.

Deborah Stewart attended a four-day course on disaster mitigation held at the Campbell Center For Historic Preservation Studies, Mount Carroll, Illinois.

Claire Titus and David Hanington surveyed and made conservation recommendations on archival material belonging to the Diocese of Huron in London, Ontario.

David Tremain presented "La prévention des sinistres: savoir quoi faire en cas d'urgence" at the 20th Congress of the Association des archivistes du Québec Inc., in Bécancour, Quebec.

Ian Wainwright attended the III Simposio Internacional de Arte Rupestre, organized by the Sociedad de Investigación del Arte Rupestre de Bolivia in Santa Cruz, Bolivia. There he presented a paper entitled "Conservation and Recording of Rock Paintings and Petroglyphs in Canada."

Seminar

"Conservation of Inorganic Archaeological Materials"

Judy Logan and Maureen Williams for the Association Museums New Brunswick, Fredericton, New Brunswick.

July 1991

Valerie Dorge spent one month as Furniture Conservator for the Gordion Furniture Project in Ankara, Turkey.

Tara Grant spent close to one month (July 26 to August 22) as field conservator on excavation at Somerset Island, Northwest Territories.

David Grattan gave a seminar on "The Use of Parylene" for the National Museum of Scotland as part of the Scottish Society for Conservation and Restoration (SSCR) seminar series, Edinburgh, Scotland.

Carl Schlichting gave a workshop on "Care of Machinery" for the Norman Wells Historical Center, Northwest Territories and the Keno Mining Museum, Yukon.

August 1991

Malcolm Bilz was involved in testing treatment methods for wood samples from the Polish settlement of Biskupin (ca. 700 to 400 B.C.). Upon completion of the tests, the samples were returned with a report to the State Archaeological Museum in Warsaw, Poland.

Dr. Leslie Carlyle and Alan Bird visited the Aylmer Historical Society to examine several painted portraits and to advise on their conservation needs and future care.

Marie-Noël Challan-Belval gave a presentation on the conservation treatment of the

painting *Saint-Pierre-aux-Liens* by artist Joseph Légaré, at the Musée Acadien, Caraquet, New Brunswick.

Gordon Fairbairn and Laura Nagora gave a presentation on the Boulle Work Bracket Clock at the Royal Ontario Museum, Toronto, Ontario.

Judy Logan and Charlotte Newton examined a recently excavated archaeological collection from Point Leopold, Northwest Territories during an advisory visit to McGill University, Montreal, Quebec.

Mary Peever consulted on the housekeeping and maintenance of certain historic buildings in Hamilton, Ontario. She also visited the Art Gallery of York University to assess the severity of flaking pigment in the ethnographic collection.

Carl Schlichting and Lyndsie Selwyn gave a workshop on "Care of Machinery" at the Kilby General Store Museum, British Columbia.

September 1991

Bob Barclay taught the first six weeks of a course on "Collections Conservation Management" at the Livingstone Museum in Zambia, Africa for the Prevention in Museums of Africa (PREMA) program.

Helen Burgess presented "Investigation of the Effect of Alkali on Cellulose Fibres, Part I: Rag and Processed Wood-Pulp Paper" at the SSCR, Glasgow, Scotland. She also presented "Evaluation of Paper Products To Be Used in the Storage of Photographic Materials" and "The Conservation of Parylene-Coated Books and Papers" at the Association pour la recherche scientifique sur les arts graphiques, Paris, France.

Dr. Leslie Carlyle presented a paper on "19th Century Artists' Anticipation of Change in Their Materials" at a joint meeting of the Irish Professional Conservators and Restorers Association, and the Irish Art Historians, in Dublin, Ireland.

CCI was one of several hosts at The International Conference on the Packing and Transportation of Paintings held in London, England. The Conservation Analytical Laboratory (CAL) of the Smithsonian Institution, the National Gallery of Art in Washington (NGA) and the Tate Gallery in London also co-hosted the event. Réjean Baribeau from CCI's Analytical Research Division presented a paper entitled "Applications of a 3-D Laser Scanner for the Documentation of Works of Art in Transit." Several CCI staff from the Environment and Deterioration Research Division also presented papers. Charles Costain presented "Problems of Packing and Shipping: The Rationale for Scientific Studies." Paul Marcon presented: "Vibration and Shock: Theory, Damage Type"; "Vibration and Shock Encountered in Transit Situations"; and "Use of a Slide Rule for Determining Correct Foam Loading." Stefan Michalski presented: "Mechanical Response of Old Paint Samples to Humidity and Temperature"; and "Paintings: Their Response to Relative Humidity, Temperature, Shock and Vibration." Following the general conference, Charles Costain and Paul Marcon participated as lecturers in the two-day workshop held at The Tate Gallery.

Approximately 40 papers relating to the degradation and conservation of modern materials were presented at the CCI Symposium '91, held in Ottawa. David Grattan gave a paper on "Degradation Rates for Some Historic Polymers and the Potential of Various Conservation Measures for Minimizing Oxidative Degradation" and Scott Williams presented a paper on "The Implications of Composition on the Survival of Plastic Artifacts."

Carolyn Leckie visited the New Brunswick Museum and the Nova Scotia Museum to assess the awareness of preventive conservation practices and to identify needs for conserving natural science collections. She made subsequent visits for the same purpose to: the Provincial Museum of Alberta and the University of Alberta Special Collections Museum (October); and the Royal Ontario Museum and the Manitoba Museum of Man and Nature (December).

Lyndsie Selwyn attended a course sponsored by the U.S. National Parks Service on "The Preservation of Outdoor Monuments." The course covered the preservation of metals and stone and was held at two sites, Washington, D.C. and Gettysburg, Pennsylvania.

Jane Sirois visited the McMichael Canadian Art Collection at Kleinburg, Ontario to obtain samples from David Milne paintings for analysis as part of the Canadian Artists' Material Project.

David Tremain participated in a round-table discussion in Montreal on the conservation problems of the *Album Viger*, a bound volume of works of art on paper.

Seminar

"Polymeric Materials" (In French)

Jean Tétreault for the Association Museums New Brunswick, Moncton, New Brunswick.

October 1991

Debra Daly Hartin and Claire Titus visited the Art in Public Places Programme of the City of Ottawa to advise staff on the condition reporting, handling, preventive conservation and care of works of art.

David Hanington visited the offices of Elections Canada in Ottawa to advise on the conservation needs of two books on electoral maps (ca. 1895 to 1926).

David Hanington and Claire Titus surveyed and made conservation recommendations for the collections of the Maritime Conference Archives, United Church of Canada, Halifax, Nova Scotia.

Helen McKay presented a talk on artists' materials to the group of artists, Outaouais Creators, Aylmer, Quebec.

Peter Newlands presented "Workshop Tools and Techniques for Conservators" to Masters of Art Conservation (MAC) students at Queen's University, Kingston, Ontario.

Carl Schlichting and industrial conservation intern Todd Vassallo carried out a three-day in-situ treatment of a World War I Fokker DVII aircraft at the Brome County Historical Museum, Knowlton, Lac Brome, Quebec.

Carl Schlichting gave a workshop on "Care of Machinery" at the Pembina Thresherman's Museum, Winkler, Manitoba. He also presented the paper "Museum Mounting a Tile Stove" at the University of British Columbia Museum of Anthropology "Turning Point" Symposium, Vancouver, British Columbia.

Jane Sirois attended a course on applied polarized light microscopy at the McCrone Research Institute in Chicago, Illinois.

Deborah Stewart visited Dundurn Castle in Hamilton, Ontario to advise the City of Hamilton Museums on disaster planning.

John Taylor and Réjean Baribeau attended the International Conference on Hypermedia and Interactivity in Museums held in Pittsburgh, Pennsylvania and presented the paper "Colour and Range Sensing for Hypermedia and Interactivity in Museums."

John Taylor, Ian Wainwright, Jeremy Powell and Tom Stone visited Bon Echo Provincial Park at Cloyne, Ontario to perform graffiti removal experiments on recent graffiti near the rock paintings of Mazinaw Lake.

CCI's Works on Paper Section hosted a Suction Table workshop for Canadian paper conservators. Instructors were Marilyn Kemp Weidner from Philadelphia and Stefan Michalski of CCI.

Seminars

"Care of Books and Archival Material"

Claire Titus and David Hanington for the Federation of Nova Scotia Heritage, Truro, Nova Scotia.

"Plastics and Polymeric Materials"

Jean Tétreault for Yukon Historical and Museums Association, Whitehorse, Yukon.

November 1991

Bob Barclay visited the Sharon Temple Museum in Sharon, Ontario to examine and consult on the conservation of the Richard Coates barrel organ. Bob also visited the David M. Stewart Museum in Montreal to work on a 17th century celestial globe, by Willem Janszoon Blaeu of Holland.

Dr. Leslie Carlyle presented the paper "Aspects of the Changing Relationship Between Artists and Their Oil Painting Materials Throughout the 19th Century" as revealed through her Ph.D. research, to members of the University Art Association of Canada at their annual meeting, Queen's University, Kingston, Ontario. She also gave a presentation on her Ph.D. thesis research into 19th century artists' materials and demonstrated the corresponding database to students in the MAC program at Queen's University.

Marie-Claude Corbeil attended the first meeting of the Advisory Committee for the Quebec Ursulines Chapel Conservation Project at the Old Monastery, Quebec City, Quebec.

Valerie Dorge gave a Furniture Conservation workshop to second-year artifacts students in the MAC program, Queen's University, Kingston, Ontario.

David Hanington visited the Geological Survey of Canada in Ottawa to advise staff on the conservation and display needs of several rare books.

Deborah Robichaud attended the conference "Education and Training in Conservation at the International Level—Past Experience and Future Needs" in Ferrara, Italy. There she presented the paper "The Challenge of Providing Museological and Conservation Training in Canada in Two Official Languages."

Deborah Stewart accompanied ethnology interns Beverley Lambert and Henriette Schokking on a visit to the Cumberland Township Museum in Cumberland, Ontario, as part of a training exercise.

Tom Stone co-taught the three-day course "Artifacts" for the Ontario Museum Association, Markham, Ontario.

Seminars

"Artifact Mounting"

Carole Dignard and Bob Barclay for the Musée de la civilisation du Québec, Quebec City, Quebec.

David Grattan reviewed and discussed the papers presented at Symposium '91 during a one-day workshop, which he presented to the British Columbia Museums Association, Victoria, British Columbia.

"Permanence of Artists' Materials and Techniques"

Helen McKay, Wanda McWilliams and Alan Bird for conservators, artists and curators, Saskatoon, Saskatchewan.

"Preventive Conservation"

Paul Marcon and Jean Tétreault for Alberta Museums Association, Edmonton, Alberta.

December 1991

Lyndsie Selwyn gave a lecture to the IIC-CG Ottawa Regional Group on the conservation of outdoor bronze statues, Ottawa, Ontario.

In co-operation with the Queen's University MAC program and Judith Southward (ethnology intern), leather samples tanned by various methods were exposed to light in CPR's laboratory as part of an accelerated ageing experiment.

Tom Strang gave a seminar on "Pest Control Methods" for the San Francisco Bay Area Conservation Group and staff of the Oakland Museum. He also conducted a pest survey of the warehouse and collection at the Oakland Museum, Oakland, California.

Ian Wainwright travelled to The Netherlands and London to consult with colleagues at the Central Research Laboratory for Objects of Art and Science (Amsterdam), the Stichting Restauratelier Limburg (Maastricht), and The National Gallery (London) on the scientific examination of Rembrandt paintings. The fact-finding trip was planned to coincide with Rembrandt exhibitions at the Rijksmuseum and Rembrandthuis (Amsterdam), the Mauritshuis (The Hague) and the Stedelijk Museum "de Lakenhal" (Leiden).•

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