

TEXTILE
CONSERVATION
NEWSLETTER
—
CANADA

A handwritten signature in black ink, appearing to be 'Q. J. R.', located at the top of the right-hand panel.

TCN-C

FEBRUARY 1983

NOTES FROM THE EDITORS

It has been decided to group the headings "Current Projects" and "Conservation Techniques" together under one heading, due to the type of information now being received. This layout also provides a clearer and more concise reference to the work accomplished at the respective institutions/museums. If you have any other ideas on format changes, special topics to be discussed etc., please let us know.

The next issue is scheduled for the end of September 1983 and we would therefore appreciate receiving your information by August 31, 1983. Many thanks again for sending in your information in the 2 column typed format.

You are to be encouraged for your contributions, as the last issue received many positive responses and requests from our colleagues to be added to the mailing list are continuous.

S. Little
S.G. Niinimaa

CURRENT PROJECTS / CONSERVATION TECHNIQUES

1./ B.C. Provincial Museum - Colleen Wilson

1.1 Laboratory Facilities

After a year and a half, the Textile Conservation Lab is still taking shape. Lately the carpentry shop has found time to build two frames and trestles and I daily await the arrival of some storage cabinets. One of the major problems has been an inherited washing tank (fig.1) (of course not designed by a textile conservator). Its deeply sloped bottom makes drainage a snap, but is very hard on fragile textiles. Following the inspiration of the platform bottoms

of the washing tanks at Harpers Ferry (as designed by Fonda Thomsen) a plexiglas "table" has been built to provide a level surface. This has proved most satisfactory and a feeble paisley shawl (fortunately already cut in two pieces) has been washed successfully.

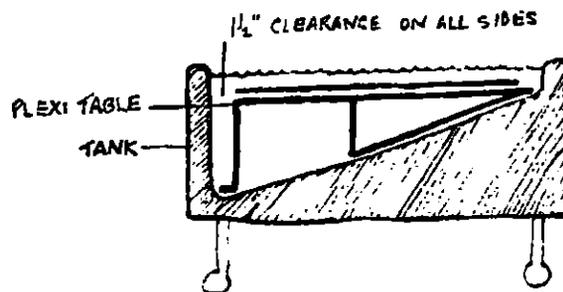


fig 1.

1.2 Exhibition Preparations - "Gold Rush"

In the upgrading of the permanent exhibit "Gold Rush", the involvement of women in this period of history is to be made more apparent. This means that in addition to the 4' x 12' "First Flag to be Flown in the Kootenaias", I shall be working on a woman's complete outfit from the 1860s (including the huge and dilapidated paisley shawl). The dress and accessories are only temporary inclusions, however, to allow time for the preparation of a wonderful green and purple plaid silk dress of 1856 (complete with miles of passementerie). The latter is in very poor condition having been worn by a series of increasingly mammoth figures until its donation to the museum in the 1970s. So, my Current and Future project (for many months to come) looks like 19th Century Costume. However, should a change be desirable, there is also to be a temporary and travelling display on the B.C. Police, which will include both uniforms and flags.

2./ Canadian Conservation Institut

2.1 Archaeology Division

2.1.1 Red Bay 1982-Textile Discovery -

Judith A. Logan

Since the summer of 1978, the Canadian Conservation Institute (CCI) has been providing conservation assistance to the Memorial University of Newfoundland in their excavation of a 16th century Basque whaling station on Saddle Island at the entrance to the harbour at Red Bay, Labrador. Dr. James A. Tuck, Director of the excavation, has described the site as being "Canada's earliest industrial complex", since it represents, with artifacts and architectural remains, a centre for whale-oil recovery and refining which was of major economic importance in 16th century Europe. The artifact assemblages found on Saddle Island range in time from early Paleoeskimo lithics to 19th century ceramics and leather, but the majority of the material dates to the 16th century and includes metal (iron, copper alloys, lead, silver), glass, ceramics, wood, leather and textiles.

During the 1982 field season, an exceptionally exciting mass of textile was uncovered that presents unique problems in excavation, conservation and interpretation.

In the first week of August, human remains were discovered on the southernmost end of Saddle Island, in an area overlooking the 16th century entrance to the harbour of Red Bay. The human remains could be placed in two distinct categories:

1. Buried remains, located in pits.
2. A mass of unburied individuals, perhaps 10 in number.

The buried remains uncovered to date are not associated with textiles, while the unburied individuals are inextricably matted with masses of textile which might be the remains of clothing. The unburied individuals were discovered in an area of approximately 3 x 4 meters and are located only a few centimeters below the top of the present-day peat growth. In fact, the peat has grown into the top layer

of textile, making non-destructive excavation almost impossible.

The excavation problem became obvious after the top layer of peat was removed. Judy Logan, the CCI's 1982 field conservator at Red Bay, spent a number of hours, both in the field and in the lab trying various techniques to clear as much of the soil and root matrix as possible from the textile mass in order to delineate edges, determine the extent of the deposit and allow photography and mapping to be effective. After attempting excavation with wooden sticks and soft brushes, a blotting technique which involved spraying water on the surface and mopping up the muddy water with towelling, and finally full-scale flooding and siphoning off the excess water, it was decided to attempt to flood areas of the textile / bone mass, then siphon off the soil and water. This had to be done in controlled areas and was carried out in conjunction with normal excavation techniques. The possibility of doing large block-lifts was also considered as well as the probability that the remains could not be fully recorded and excavated before the end of the season.

The excavation of the textile was only part of the problem; the human remains were in very poor condition and it was obvious that they would require consolidation on excavation. To further complicate matters, we were not 100% certain that the remains were 16th century, why they were left unburied, how the individuals had died, or that the associated textile was indeed clothing.

During the second week of August, we were fortunate to have the assistance of Dr. F. Jerome Melbye, a physical anthropologist from the University of Toronto. In addition to delineating several individuals in the mass of bone / textile, he was able to ascertain from the identifiable remains that they were male, varying in age, and European.

In order to protect the feature while excavation progressed, a plywood box was constructed around the main mass of bone and textile. The sides of the box, approximately

30cm high, were shaped along the bottom edges to conform to the layer of beach gravel. The top edges of the sides were leveled. Grid marks were then measured in at 1 meter intervals on the top of the sides in order to facilitate mapping.

Two movable platforms spanning the box were constructed in order to eliminate the necessity of people walking or kneeling on the mass of bone / textile. The excavation platforms enabled workers to view the area being excavated from various angles. Excavating from the platforms was also considerably more comfortable than maintaining contorted positions on top of the actual feature.

As a final refinement, a tent was erected over the feature, allowing work to proceed unimpeded by rain, wind or blackflies.

After several unsuccessful trials, a system was devised of damming off small (approximately 0.5m x 0.5m) areas of textile for flooding and siphoning. Sand bags were used as the walls of the dam, since they are soft, easy to move and conform to the undulating surface of bone and textile. A 45 gal. drum, located on the present beach approximately 10m away and 1.5m below the level of the unburied remains was used as a water reservoir. It was filled with bog water which was then pumped by a Little Giant pump through Tygon tubing to the section being flooded. Two siphons made from Tygon tubing ran back to the drum. The water from the siphons was screened through 2 mm nylon mesh at the mouth of the drum.

Excavation in the flooded areas involved feeling the surface of the peat / textile with fingers, loosening the soil and siphoning the muddy water. As the soil was removed and the water cleared, it became possible to see the weave of the textile. This was referred to as the "touchy-feely" technique by some members of the crew.

Although this method proved very useful, and relatively rapid for some parts of the mass, it was not the best technique for all areas. The exposed bone, for instance, became extre-

mely soft when waterlogged. Therefore, the flooding technique was used in conjunction with careful "dry" excavation.

Using a combination of wet and dry excavation, and with the assistance of Dr. Melbye, we were able to delineate a very definite folded edge of textile, approximately 1.5 m long, associated with the bones of a young adult. Since the overlying peat roots had not penetrated through the textile and into the underlying soil, we were able to slip our hands under the textile and lift a large, approximately 1.5 m x 0.5 m block which probably represents the remains of one person. A couple of smaller, detached pieces were lifted in conjunction with the main block.

Once the textile / bone mass had been loosened, it was transferred to a piece of plywood and taken back to the field lab where it was immediately x-rayed on its wooden support. A lot of the soil and gravel matrix had been lifted with the artifact and all that showed up on the x-rays were some long bones, the odd patch of recognizable weave and a lot of gravel.

Preliminary cleaning was carried out in the field lab by washing with water in a large polyethylene tank. During washing, the textile was supported on plywood, padded with bubble pack to conform to the convolutions of the textile. It should be noted that the support with the textile floated on the surface of the water in the washing tank. Muddy water from the textile settled to the bottom of the tank where it was siphoned away. Washing methods included using a gentle flow of running water over the surface of the textile and the use of a Water Pic in some areas. The Water Pic method was quite messy, but very effective in cleaning areas that were known to be peat and soil; it was too harsh for the textile itself.

Washing was carried out for several reasons:

1. to get as much information as possible while in the field for archaeological recording (mapping and cataloguing),
2. to reduce the size of the package for shipping, and
3. to minimize damage to the textile during

shipping, gravel being very abrasive.

At CCI, the textile mass has been put into frozen storage, awaiting treatment while cleaning is being carried out on the two smaller associated blocks.

At the close of the 1982 season, the unburied individuals left in-situ were sealed under a layer of microfoam and sod, and a wooden lid was nailed on the box isolating them. In future seasons, more of the textile mass will be recovered and a full-scale reconstruction of what it represents can be undertaken. To date, a buckle has been retrieved from one of the textile blocks, and another cleaned piece of textile has remains of hand-stitched seams. We are hoping to have the textile and bone C-14 dated (some of the bone in frozen storage was not consolidated for this reason). More information about this unique find will be forthcoming as conservation and excavation continue.

2.1.2 Treatment Of The Textiles From Red Bay Labrador - Martha Segal

The Basque textiles excavated at Red Bay are being treated by the Archaeology Division, Canadian Conservation Institute (CCI). During the last three field seasons, over 75 textiles varying in size from tiny fragments measuring 2 x 3 cm to larger pieces (20 x 50 cm) have been uncovered. Most of the textiles are composed of coarse animal fibres woven in either a twill or tabby weave. Although the present colours of the treated textiles tend to be tan, brown or green, it is difficult to assess whether they are the original colours.

These textiles owe their remarkable preservation to their burial environment - a peat bog which is damp to wet in the summer months and frozen most of the year. When the textiles are first found, they are generally surrounded by a network of peat and roots. Because of this network's close resemblance to the colour and texture of the textiles,

the interpretation of the textiles' configuration in the soil and their safe excavation are not always easy. To avoid damage, the textiles are lifted from the ground in a block of the surrounding soil fully supported with a rigid base. Once excavated, they are wrapped in sphagnum moss or a wet towel to maintain their original dampness and are then transported to the field laboratory where the excess soil is removed to facilitate cataloguing; transportation to CCI and further treatment. For transportation, the catalogued textile is rinsed and placed on a plastic support (Cor-x, Coroplast); sprayed with 5% ethanol; wrapped in Saran and packed in an airtight plastic container (i.e., freezer container). The textiles are stored in a refrigerator or freezer in the lab until treatment.

Although a variety of techniques are used to clean the textiles, the first step is usually immersion in a circulating or running water bath to remove the soil and to relax the textile. For small to medium sized textiles, a photographic print washer, which provides a continuous, but gentle flow of water has proven to be useful. In addition, the fine spray from an ultrasonic dental scaler is used to remove surface and compacted dirt. A major part of the cleaning process is the methodical removal of roots and dirt using fine tweezers, scissors and a wooden spatula. For this, it is necessary to use a binocular microscope in order to distinguish the roots from the fibres.

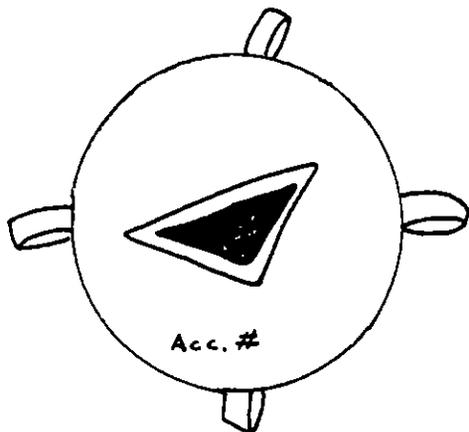
Because these textiles are too fragile to withstand the excessive rinsings necessary to remove a surfactant, 5% ethanol is used for washing rather than a detergent.

Once unfolded and cleaned, excess water is removed by gentle blotting. A 10-12.5% (V/V) solution of polyethylene glycol 400 (PEG 400) is applied to the damp textile with an eye dropper or as a spray. The addition of PEG 400 increases the textiles' flexibility and reduces their tendency to shed. For the more fragile and deteriorated textiles, it is sometimes necessary to combine a 1% solution of hydroxyethyl cellulose (Ethulose 400, Natrosol)

with the PEG 400. Although until recently the textiles have been air dried, in-laboratory testing has shown that freeze-drying is a viable alternative. The freeze-dried samples to which only PEG 400 was added, appear to be softer and their interfibril shrinkage is less than that of many of the air dried pieces. Freeze-drying is also being examined as a method to be used in the initial treatments of textiles in soil matrices.

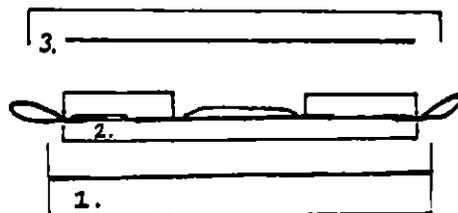
Documentation has become an integral and important part of the treatment. As the dirt is removed and the textile is unfolded, all features (weave type, stitching) and inclusions (bone, metal) are documented. Fibres and dyes are also identified. Mylar tracings using waterproof markers are valuable for recording the relative position of the various pieces as they are treated. Enlarged prints of 35 mm black and white negatives are also used. These are inexpensively produced using a library microfiche printer.

The final stage of treatment is the construction of study mounts which allow for the examination of both sides of the textiles and at the same time provide adequate support. A "free mount" (fig.2) which fully supports the textiles has been devised for small archaeological specimens. This system consists of a recessed mat conforming to the shape of the textile which sits snugly in a petri dish. To view the reverse side, the petri dish can be inverted.



Overview

fig 2.



Cross Section fig 3.

Petri Dish Mount for Small Textiles- fig 3.

1. Polyethylene foam (Nalgene) for cushioning, attached to base of petrie dish with double-sided tape.
2. 4-ply matboard is used for the mount; the top is cut to the shape of the textile and adhered to base with P.V.A. adhesive. Chromatography paper and cotton tabs are sandwiched between the top and bottom.
3. Chromatography paper covers the textile in the mount. The lid fits on top and is held in place with twill tape.

A "free mount" is insuitable for the larger more fragile textiles with ragged edges, loose fibres and associated fragments. The support commonly used for these more fragile textiles is a standard window mat to which a fine net material (Stabiltex) is attached with a polyvinyl acetate (PVA) emulsion. Two methods are available for mounting the textiles to the netting:

1. the textile can be sandwiched between two Stabiltex mats and held in place by stitching around it, or
2. the textile can be stitched to one side of a fine net mat to which is hinged another fine net mat for protection.

The completed mats are hinged to an outer

mat constructed from heavier board.

The advantages of this system are that the textile can be viewed from both sides and any associated pieces can be stitched to the top mat or other superimposed mats so that their original relative positions can be presented. Although this system provides an attractive and versatile study mount, the suitability of stitching is questionable. Stitching is not only time consuming, but it may also introduce stresses to these already fragile textiles. Because an adhesive lining treatment may be the answer, the suitability of using water soluble resins to line archaeological textiles is now being tested at CCI by Jan Vuori.

As the work on the Red Bay textiles progresses, techniques are continually being modified to solve old and new problems. The laboratory's technical file on archaeological textiles is also growing to provide a valuable resource.

2.2. Textiles Division

2.2.1 Man's 18th c Chintz Morning Coat

During the late summer, the CCI Textiles Division was involved in the conservation of a 18th c chintz morning coat from the collection of the Royal Ontario Museum. The coat is a rare and particularly important piece. The chintz was made in India using a Japanese design exported to Europe and made into a man's morning coat. The conservation of this coat confronted us with several problems. The dye used in the dark outlines of the flowers was "irongall" and disintegration of the textile fibres was evident throughout the coat wherever the dark brown had been used.

The other problem was that the coat was lined with a green silk which also required conservation. The R.O.M. had expressed the wish that the conservation of the coat be carried out without opening any original sewing. However, examination revealed that the sewing thread used to attach the lining

was in fact of recent date, and therefore the lining and coat were separated.

The coat and lining were treated individually without opening the original sewing. The coat had to be completed in a very short time as it was to be included in a major textile exhibition at the Textile Museum in Washington D.C. entitled "Master Dyers to the World, Techniques and Trade in Early Indian Textiles." October 8, 1982 - January 2, 1983.

Following its run at The Textile Museum, "Master Dyers to the World" will travel to the Field Museum of Natural History, Chicago in the winter of 1983, and The Asia Society Gallery, New York, in the spring and summer. A 216 - page catalogue written by Dr. Mattie-belle Gittinger, curator of "Master Dyers to the World", accompanies the exhibition. It is fully illustrated with 32 colour plates and 160 black and white photographs.

2.2.2 American Officer's Coat 1786

A red American officer's coat dated 1786 was received in poor condition. The lining in particular had been badly damaged by insect attack, and the scarlet wool, blue facings, cuffs and collar had numerous tiny holes.

The lining was not removed for separate treatment in order to preserve the original stitching. The buttons were removed before dry-cleaning because of the risk of dissolving the adhesive securing their ivory backings. The epaulettes were also detached. The coat was dry-cleaned commercially under supervision. It was decided to back the holes in the lining individually because the lining was sagging so badly that backing it with whole panels would have caused problems with distortion. The undesirable added weight of whole backing panels was another factor in the decision. The fine wool lining was very discoloured with age and dirt stain were present in uneven streaks, mainly in the warp direction. This made the choice of backing material somewhat complicated. The solution was found by dyeing a woollen

fabric to the basic aged yellow-brown shade, and then overlaying it with brown silk crêpe-line (basted together) to cut small patches. This combination created the "streaked" effect without losing sight of the overall beige. For backing of losses in the scarlet and blue of the coat, the fabric chosen was "Passepoil" (from F. Hefti & Co. A.G., CH-8776 Haetzingen, Switzerland). This fabric was an excellent match because it was of exactly the same weight and colour as the blue and red wool of the coat; it had the added advantage that it did not fray. Backing patches for the coat and its lining were attached behind the areas of loss with a couching stitch using hair silk dyed to a matching colour. The buttons were cleaned under a microscope using a swab, with a weak solution of Orvus WA neutral detergent and distilled water, and then rinsed with distilled water. Polishing was not performed as this would have rendered the buttons too shiny to be appropriate for the rest of the coat. The epaulettes were given minimal treatment due to time restrictions. Their understraps were simply backed with Passepoil. Finally the buttons and epaulettes were reattached to the uniform.

2.2.3 Bisham Abbey Tapestry

A major project in the Textile Division is the conservation of the Bisham Abbey Tapestry from the Winnipeg Art Gallery. It is one of a set of five early 16th Century Brussels tapestries, depicting the story of Tobit and Tobias, and it was probably designed by Bernard Van Orley.

This tapestry "Tobias and Sarah Bidding Farewell to her Parents" is the righthand portion of a larger tapestry which was cut to fit into a smaller bedchamber. In 1904 the tapestry was extensively repaired by Ms. Chart, Surbiton, England. It is probable that the tapestry was repaired with a linen backing at this time. In addition, there was an exterior burlap lining, which was disintegrating and powdering to the touch. After the burlap was removed, the extensively repaired linen backing was found beneath. This

layer had obviously caused warping and buckling of the tapestry and it appears that the linen had been cut and slit to try and alleviate this tension. In order to wash the tapestry it was necessary to remove the ripped linen support. The linen was clipped back to the rewoven areas.

A two-part treatment proposal was made due to the lengthy nature of the project. Only after washing the tapestry could the full extent of the damage be ascertained and then a suitable treatment planned.

The tapestry was photographed in B&W before treatment using an 8" x 10" back view camera. UV and IR examination of the obverse gave no indication of the location of earlier repairs. The only clear visible evidence of earlier treatment was found to be the stitching on the reverse. It was decided to record the stitching repairs and transfer them to the obverse image using a transparent photographic overlay. First, a B&W print was produced (84 x 143 cm). A matching negative depicting only an enhanced image of the stitching was used in reverse as an overlay to aid the conservator in documenting suspect areas. In addition during examination of the front weak areas were recorded by hand on transparent overlays and mapped out in various colours.

The entire documentation will eventually be published and displayed with the tapestry after conservation treatment is completed.

2.2.4 Textile Adhesives at CCI

For two years the CCI Textiles Division has undertaken preliminary studies and tests of adhesives for the lining of degraded silks mainly weighted or painted, which due to their fragile condition preclude the use of stitching.

This study was started by Jan Vuori, an intern from Queen's University. The adhesives tested were selected from those most commonly cited in the textile conservation literature. The aim of the preliminary study was to discover which adhesives were the most satisfactory

from a practical point of view, and included evaluation of backing fabrics, bond strength, tackiness, colour change, gloss, flexibility and visibility from the reverse. Different methods of application were tried in order to closely control the amount of adhesive on the fabric.

The first adhesives chosen for testing were those which allowed unlimited treatment time, such as hydroxypropyl cellulose, polyvinyl acetates, Beva and acrylic esters. From a purely practical, visual and tactile evaluation, the best working properties were found in Acryloid F 10 (poly (n-butyl methacrylate)), followed by Beva and Mowilith DMS. The Swiss National Museum in Zurich has used Acryloid F 10 for almost 20 years. Ela Keyserlingk visited that laboratory in 1982; their technical approach was especially interesting because long experience had produced very refined application methods.

We have test-treated two very fragmented, weighted silk flags in the laboratory with Acryloid F 10 with satisfactory initial results and plan to monitor the flags over a period of years.

Future work at CCI will involve testing to determine the effects of this adhesive on such physical properties of a textile as strength and dimensional response with RH. Using methods similar to those described by Mecklenburg for the investigation of materials used in paintings conservation, the tests will be carried out on the individual components and assembled units.

2.2.5 Textile Dyes at CCI

Julie Crayley attended a course in the use of Ciba-Geigy dyes for textile conservation purposes, in Basel, Switzerland, from January 10 to 21, 1983. It was offered by special arrangement with the Abegg-Stiftung Bern and was attended by seven other textile conservators.

Content included pretreatment of fabrics, use of auxiliary agents, and approach to colour

matching. Most beneficial of all was the actual practical training in setting up and conducting the dyeing operation.

Difficulties previously encountered in dyeing procedures in the Textile Lab at C.C.I., and conflicting advice received from professional dye chemists were resolved. Dyeing operations are now being set up according to Ciba-Geigy's recommendations.

Stay tuned for more news about a prospective dyeing workshop to be given at C.C.I. to spread the information around.

3./ Centre de Conservation du Québec -

Sharon Little

3.1 Laboratory Facilities

The renovation and installation of the remaining laboratory equipment of the textile conservation laboratory at the C.C.Q. are now complete. A dividing wall (floor to ceiling) now creates a completely independent textile laboratory. A counter top area (4.5m), contains towards one end 2 small sinks (36.0 X 41.0 X 17.0 cm), each of which have an independent hot and cold water supply and shared deionized water supply, from a Culligan D-series deionizer cartridge. In case of an emergency, a hand-operated water spray nozzle has been installed in the sink area. An "elephant trunk system" was also installed in the same area to assist in the evacuation of certain noxious chemical vapours. Nine retractable extension cords are located on the ceiling (evenly dispersed) and have proven to be extremely useful, while at the same time upgrade the safety level of circulation for individuals working in the laboratory. A large mobile stainless steel washing sink (3.0 X 1.75m), is stored in an area directly opposite to an entrance of the textile laboratory and is exchanged for 2 of 6 existing "solid arborite" tables, when required. Water is conducted to this large sink

by plastic tubing, which is connected to the water outlet of one of the small sinks. Water is extracted from the large sink by the use of another piece of plastic tubing, which is inserted into a floor drain.

3.2 Textile Dyeing Procedures -

Sandoz Canada Ltée

During the Textile Conservation Seminar at the C.C.Q. last summer, Dr. Liliane Masschelein of the Institut royal du Patrimoine artistique, Belgique, discussed the many aspects of synthetic textile dyes vis à vis textile conservation. As the synthetic dyes from the Swiss company "Sandoz" continue to be utilized for textile conservation purposes at the I.R.P.A., these dyes were also used during the practical dye sessions of the Textile Conservation Seminar.

Following the seminar, I had the opportunity of being able to work for a week (Nov.29-Dec.3, 1982) in the dye-colour laboratory of Sandoz Canada Ltée, Dorval (Montréal), Québec. This laboratory contains various types of equipment and machinery which dye fabric samples of textile fabrics that are sent in from various textile companies, purchasing Sandoz dyes. The fabric samples are colour matched with the objective of determining the appropriate dye recipe for the future industrial production of the specific samples.

The use of one particular machine allowed me to dye 36 fine hair-silk braids (each 2.5gms) in less than 3 days. This time period also included the preparation of the braids on a hand-operated swift, developed especially for the preparation of measured skeins for sample dyeing. The colour recipes selected for dyeing, referred directly to the basic colour samples of the Sandoz colour catalogues. As these colour samples are based on standard percentage dye formulae, the dyed silk braids shall act as a reference colour matching guide for the dyeing of future hair-silk braids.

The personnel were extremely helpful and informative. Well documented information on the theory of dyeing was also obtained. Future collaboration with Sandoz Canada Ltée is anticipated in the near future. For example, piece fabrics used for the support backing of textiles, may be dyed in their special drum machine which has controlled environmental conditions.

Another useful piece of information obtained, was that Sandoz Canada Ltée uses pre-scoured fabrics and fibres purchased from "Testfabrics Inc." (cited in T.C.N.-C., Feb.1982, pg.6). I have since been in contact with the Vice-President Mr. Luther Myers, regarding the possibilities of obtaining various types of pre-scoured fabrics, treated to meet conservation norms and he assures me that a wide variety of fabrics may be obtained. Testfabrics Inc. also have their own weaving mill and might just be able to weave you that special piece of fabric that you have been looking for but never could find! This company also exports to many international textile related companies and because of its intricate association with such companies may be able to purchase small quantities of specific fabrics, if you could send them samples. The C.C.Q. has therefore decided to use the pre-scoured fabrics and fibres from Testfabrics Inc., under all possible circumstances, for textile dye conservation purposes, rather than run the risk of obtaining a colour change of an other wise stable dye, whereby the colour may change due to the instability of chemicals ie. brighteners, which are often found in fabrics purchased from local fabric shops. Test fabrics unbleached cotton, containing no starch might also prove to be very useful for the storage of historic textiles. For further information contact:

Testfabrics Inc.
P.O. Drawer 0
200 Blackford Avenue
Middlesex, N.J.
U.S.A.
08846
Tel: (201) 469-6446
Atten: Mr. Luther Myers

3.3 Exhibition Preparations -

"Il était une fois une dentellière"

The textile conservation laboratory treated 33 textiles for this lace exhibition, now presently located at "la maison Chevalier", place royale, Québec. These textiles included lace table clothes; curtains with lace borders; lace collars; a beautiful cotton voile dress with lace inserts, once belonging to Zoé Lafontaine, wife of Sir Wilfrid Laurier; lace bonnets; christianing gowns etc. Two of the oldest and perhaps most delicate textiles were an alter band and table cover from the Musée des Augustines (Monastère de l'Hôtel-Dieu de Québec).

All of the textiles required a tremendous amount of conservation/restoration, as they were very soiled; yellowed and suffered from extensive fold lines; numerous weakened and/or torn areas and stains such as, rust, blood, food, water etc. One textile had greatly yellowed where a once protective plastic cover had deteriorated (yellowed), while remaining in contact with the textile. Most of the textiles were wet cleaned with solutions of Orvus W.A. detergent and water. One cotton evening bag was treated with a solution of ethyl alcohol (70%V/V) and deionized water due to its fabrication of composite materials. For aesthetic purposes, many of the textiles were bleached in solutions of hydrogen peroxide (2.0-5.0% V/V)*and deionized water. Many of the rust and blood stains were effectively removed with solutions of sodium dithionite (2.0-5.0% W/V)* and deionized water. A solution of sodium dithionite (2.0% W/V) and deionized water was also most effective in removing the "blue cast" apparent on most of the textiles, which had resulted from the accumulation of indigo dye, a product present in the blueing agents that have been traditionally used in the Province of Quebec as "brighteners" for white fabrics, in the final rinse bath.

* The higher concentrations of hydrogen per-

oxide and sodium dithionite were mainly applied to small localized areas.

3.4 A Flexible Strainer for Wet-Cleaning

An early 20th c textile attributed to Ann-Marie Matte and titled "Après la veillée chez Jolifoux à Montmorency"(55.0 X 45.0 cm) necessitated a wet-cleaning treatment, as it had been for many years framed without a protective covering and had consequently become extremely soiled. A relatively fine, tabby weave, linen fabric had been used for the ground fabric, while loosely spun multicoloured linen threads had been used for the embroidered composition. The resulting embroidery technique had achieved the effect of "peinture à l'aiguille". Small samples of the multicoloured threads (colours ranged from black to pale mauves) were tested individually in detergent/deionized water solutions and found to be extremely colourfast. Hence, with respect to the materials and techniques of fabrication of the textile and in the prevention of any unnecessary and/or uneven distortions of the embroidery during the wet-cleaning treatment, it was decided to block out the textile within a "flexible strainer".

Four plexiglas rods (2.5cm dia.) were selected to create a strainer measuring approximately 9.0cm greater in width and length than the textile to be treated. An end lap joint was fabricated and secured with a stainless steel nut and bolt to each of the 4 corners. This method of construction permitted the dismantling of the strainer for storage. Four pieces of grey plastic coated fiber-glass screening were cut in lengths which could be individually wrapped around each of the four plexiglas rods. The textile was then pinned with stainless steel pins (one row of pins along each side) to the four pieces of screening, so that each side of each piece of the screening over-lapped the textile by approximately 5.0cm. A slight slack was left in the textile to allow for a certain degree of expansion of the fibres, which would result

in an overall decrease in width and length of the textile. These pieces of grey screening formed the "flexible" part of the strainer as they would afford a certain amount of give and / or adjustments could be effectively made by relocating the pins, if the textile became too taut during the wet-cleaning treatment.

The proper and reverse sides of the textile were evenly sprayed with water, from a spray bottle, to ensure a relatively slow and even expansion of the fibres and to avoid the development of any rapid extreme tensions. Once an even tautness had occurred, through the saturation of the fibres, the textile was wet-cleaned (by total immersion in a shallow plastic tray) in 2 solutions of Orvus W.A. detergent and water and rinsed 3 times. Deionized water was utilized for the final rinse bath. During the wet-cleaning process, the textile remained flat and slightly taut and no adjustments were required at the pinned attachments of the textile to the grey screening. While the textile remained pinned to the flexible strainer, the excess rinse water was removed with the use of large sheets of chromatography paper and then pinned with stainless steel pins (approx. 7.5 cm in from the 4 perimeter edges) to a tentest board, which had been previously covered with 10.0mm plastic sheeting. The strainer was then removed by unpinning the sections of grey screening. As a dimensional change (decrease) of approximately 0.7cm had occurred along both the width and length of the textile, the textile was immediately blocked out to its original size and air dried with the use of warm air from a small blow dryer.

The treatment of the textile was completed by stitching, with a linen thread and curved surgical needle, the textile along its perimeter edges, to a 100% linen fabric which had been previously adhered (with a white glue P.V.A.) along the 4 reverse perimeter edges of an 8 ply acid-free matt board and inserting the unit into a custom made frame. A sheet of protective glass was prevented from touching the textile by the addition of an 8 ply acid-free matt frame, cut to fit the

width of the frames' rabbet, while remaining in position between the perimeter surface edges of the textile and the glass.

In conclusion, the wet-cleaning of this particular textile in a "flexible strainer" proved to be a very successful procedure. Minimal distortion occurred during treatment; manipulation of the textile was kept to a minimum, which was especially important in reducing the water abrasion of the loosely spun embroidery threads and the textile was quickly blocked out to facilitate rapid drying, in the prevention of any possible change in the colour fastness of the embroidery threads. The practical application and modifications / improvements of this type of strainer for wet-cleaning shall be further investigated, in the possibility of treating several similar textiles attributed to the same artist.

3.5 Aluminum Strainers for an Embroidered Medallion

An uncompleted embroidered medallion from the Musée des Ursulines, Québec, titled "Martyre de Sainte-Ursule et de ses Compagnes" circa 1700, required the construction of a frame which would allow almost total visibility of both its proper and reverse sides. The construction of the frame was still further complicated due to the condition of the medallion, as the ground fabric, a very coarse tabby weave, linen, had become quite distorted and would require a strainer which would be rigid enough to maintain a flat surface and equal fibre tension distribution of the medallion (once treated) while creating a relatively thin and compact unit which could be incorporated into a protective frame. Solid aluminum bars were therefore chosen for the construction of 2 dimensionally equal strainers.

Eight aluminum bars, measuring 2.5cm in width and 0.7cm in thickness were mitred and soldered at the corner areas. A coat of Inrcalac (15.0% V/V) in toluene, was applied to all surface areas of the 2 strainers, to prevent the possibility of any further oxidation of

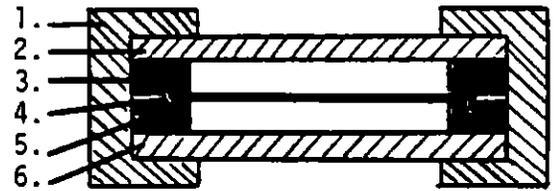
the metal. Each strainer was then covered with a 100% linen fabric, similar in colour to that of the ground fabric of the medallion, by wrapping the fabric around the strainer (4 pieces were used for each strainer) and securing them with white glue (P.V.A.). Once covered each strainer had one side covered with a single layer of "unglued" linen fabric, while its opposite side consisted of the 2 fabric ends 'glued' together.

The medallion, once treated, was positioned following its irregularities in size, onto one of the strainers (single layer, unglued, fabric side) in such a manner that its perimeter edges extended in from the inside perimeter edges of the strainer by approximately 0.7 - 1.5cm. Linen thread was used with the aid of a surgical needle to stitch the medallion in place. The single fabric side of the remaining strainer was then placed on the medallion, in such a way that the medallion was now sandwiched between the 2 aluminum strainers. The "sandwiched" medallion was then installed into a custom made wooden frame (polyurethane was applied along the rabbet edges of the frame) which could be disassembled into 4 sections to provide easy reassembly. The 0.7cm thickness of each strainer acted as an adequate spacer in preventing the 2 sheets of plexiglas (.35mm, UFl) from touching the surfaces of the medallion. The linen covering these strainers also provided an aesthetic cover for their inside perimeter edges.

The use of these 2 aluminum strainers have since provided adequate support to the medallion, while permitting its aesthetic incorporation into a protective frame, which allows almost total visibility of its' proper and reverse sides, for both exhibition and documentation purposes (re: fig.4)

Shortly after the return of the medallion to the Musée des Ursulines, Rev.G. Dagneault, directrice, had a wrought iron floor stand fabricated by a local craftsman. The framed medallion has now been installed on this stand, in such a manner that it may be rota-

ted 360° to permit observation of both its' sides.



Cross Section

fig.4

1. Wooden frame
2. Plexiglas
3. Aluminum strainer
4. Textile "Medallion"
5. Aluminum strainer
6. Plexiglas

3.6 Exhibition Case Design

The textiles attributed to Jeanne LeBer, circa 1700, which were treated at the C.C.Q., early last fall, have now been installed in their respective cases at the Musée de l'Église Notre-Dame de Montréal. Their cases were designed in consultation with the C.C.Q., by Mr. Clifford Williamson and his assistant Mr. Bruce McNeil. Both individuals have been previously involved with the exhibition design layouts etc., of other Montreal Museums such as, the Chateau Dufresne, the Chateau Ramezay and the Musée McCord. Their sensitivity to conservation problems certainly helped to create a very effective working relationship with extremely positive results. Photographs of the final results (re: fig.5 and fig. 6) have been included in the hope of depicting how textiles, while respecting conservation norms, may be both aesthetically exhibited and aesthetically enhanced. For further information on these cases contact:

Mr. Clifford Williamson
3644 ave. du Musée, app. 81
Montréal, Québec
H3G 2C9

Mr. Bruce McNeil
267 La Gauchetière ouest
Montréal, Québec
H2Z 1C7

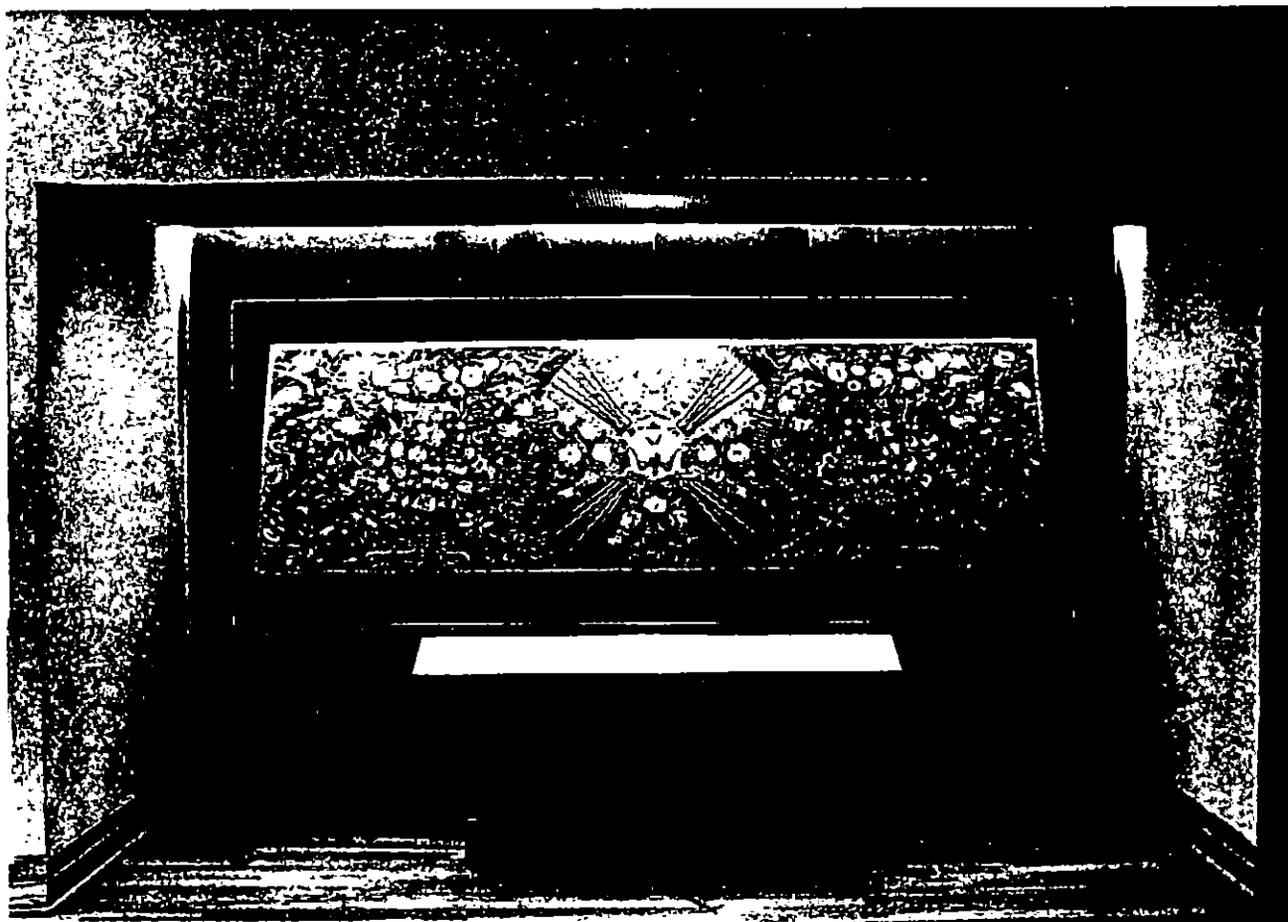


fig.5

Photo by B.McNeil

.../15

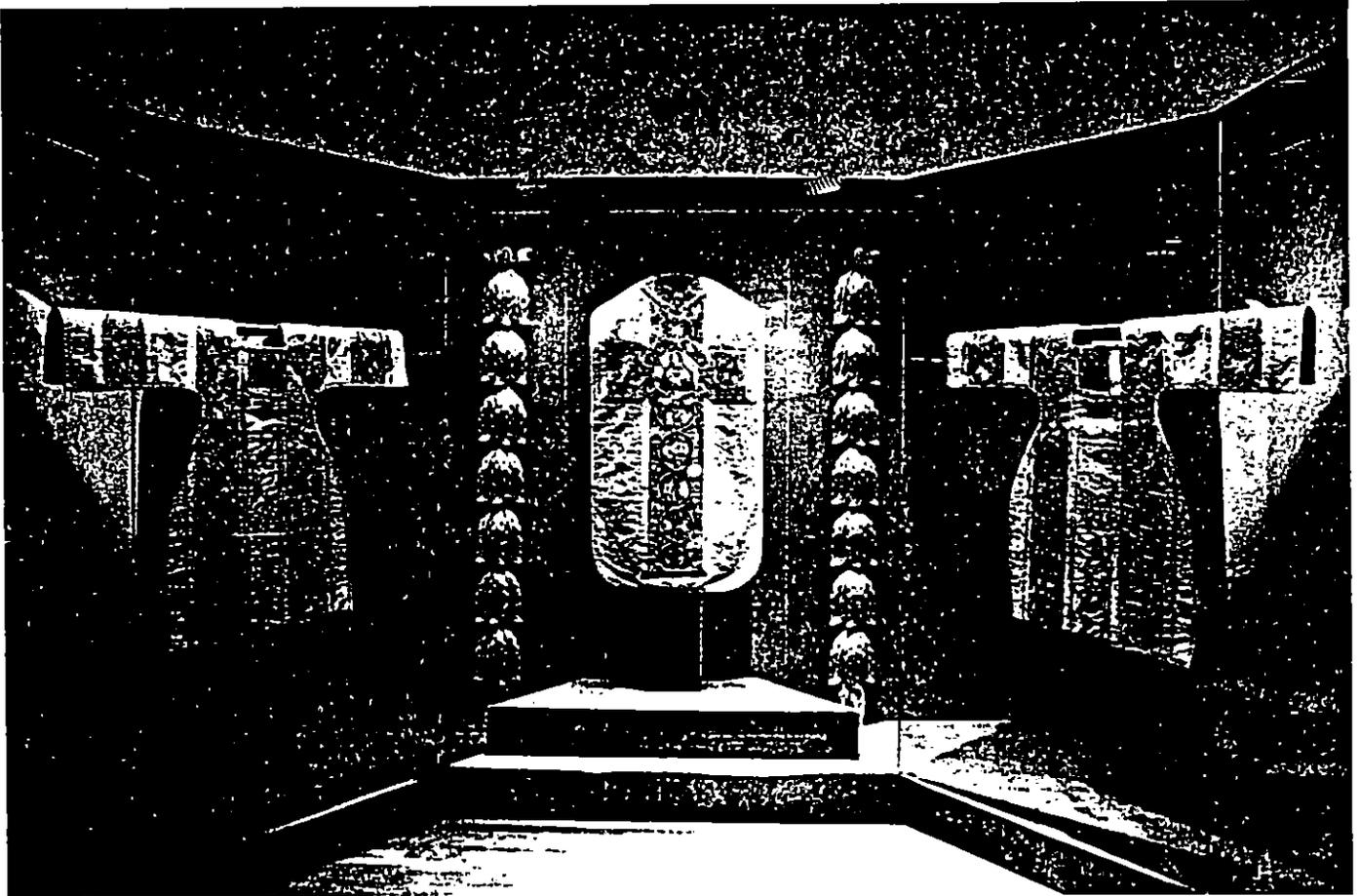


fig.6
Photo by B.McNeil

4. Glenbow Museum - Gail Niinimaa

4.1 Mounts for Accessible Storage

Mounts have been made for headdresses and fur hats for the "Accessible Storage" Project involving the Cree Indian Material (re: fig.7).

A plexi mount worked very well for a large trailing headdress (7feet long).

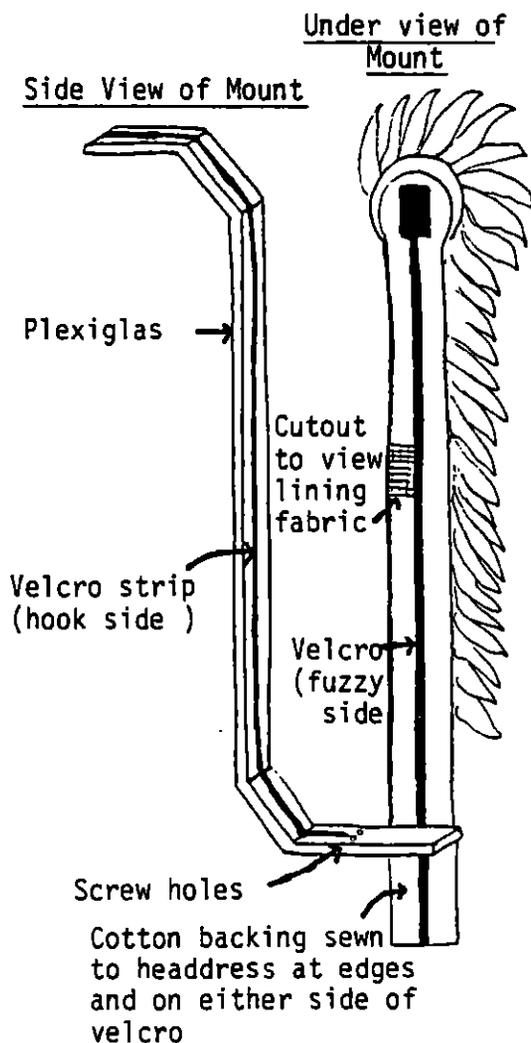


fig.7

(diagram by Sarah Joyce)

4.2 Sampler Show

The sampler show returned to Glenbow after travelling in Western Canada for a year. It returned in very good condition and has not been damaged as a result of travelling. The packing system used was a wooden crate with a polyethylene vapour barrier. Tentest was covered with cotton fabric to act as a buffer. The samplers travelled face up in a horizontal position in ethafoam cut-out sheets. This minimized any shock and vibration which the samplers may have been subject to during travel.

4.3 Exhibition Preparations - "The Dinner Party"

The Dinner Party by Judy Chicago has been at Glenbow from December 3, 1982 and will continue until February 27, 1983. The Conservation Department has been working closely with the installation. Textile Conservation work included vacuuming each of the three 50 foot long tablecloths, vacuuming the exquisitely embroidered runners and vacuuming and steaming the 6 tapestry woven banners marking the entrance to the exhibition. As well the "International Quilt Show" which tributes women from all over the world has required some minor conservation treatment and display preparation, (i.e. sewing on velcro, repairing seams which have come undone, removing wrinkles etc.)

4.4 Mounts for "Quillwork of The Plains"

The Exhibition Quillwork of The Plains is now travelling across Canada. Special conservation mounts were made to support the pipe bags (re: fig.8).

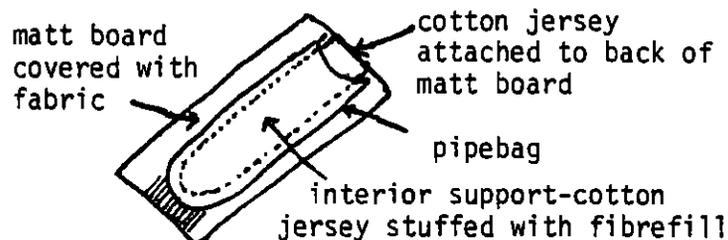


fig.8

.../17

The moccasins were stuffed out with polyester fibrefill which was placed inside a specially made cotton-knit sock (re:fig.9).

cotton-jersey sock
stuffed with
fibrefill



fig.9

Rigid leather artifacts such as roundels were placed on fabric covered acid free boards and attached along the edges with intravenous tubing inserted with cooper wire (re: fig.10).

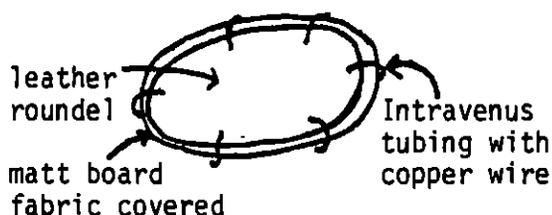


fig.10

5. Royal Ontario Museum- Izabella Krasuski

5.1 20th c. Ballet Costumes from "Ballet Russe"

We are in the process of completing a project on the conservation of a set of ballet costumes. They are of interest as the costumes are from the Ballet Russe, designed and made in France in the early 20th century, and that the names of wellknown dancers are written on the bodices of the costumes. The ballet dresses were subjected to water damage after a fire, consequently dyes ran, metal hoops and attachments corroded and the material was filthy. There were many tears, splits and holes due to their original heavy use. Their conservation was further complicated due to the many materials (i.e., silk, tulle, lace, chessecloth, horsehair ribbon, cellophane, flossed wire, bamboo and baleen) that were used in their construction and had to be treated accordingly.

5.2 18th c English Embroidered Silk Aprons

We are concurrently working on English embroidered silk aprons from the early 18th century. The embroidery is very valuable and fortunately in relatively good condition. The background silk however, is in poor condition with numerous splits and tears in both warp and weft directions.

5.3 A Coptic Tunic, 7th c.

Another conservation problem is a Coptic tunic from the 7th century A.D. which was one of the last acquisitions of the late textile curator, Veronika Gervers. The all-wool tunic came to the museum in a crumpled mass. In preparation for washing, it had to be misted with distilled water and gently flattened. Some areas were wetted more intensively to open them. The tunic is now washed and we are starting to dye the supporting background fabric.

5.4 Framing Methods

We are experimenting with new methods of framing fragile and brittle Islamic and Coptic textile fragments and we will report our results in a future newsletter.

SUPPLY SOURCES

CENTRE DE CONSERVATION DU QUEBEC

RE: Sharon Little

Fabrics - cottons, linens, silks etc.

Chiquenaude
3923, St-Denis
Montréal, Québec
Canada
H2W 2M4

Tel.: (514) 844-8705

Atten: Johanne Dubé; Pascale Germain

Unbleached cotton- (wholesale)

Unbleached cotton, #4130-59" wide, may no longer be obtained from:

GAUVREAU BEAUDRY LTEE

(ref: T.C.N.-C. Sept 1981, pg.3). Due to economic conditions, they are no longer stocking this fabric.

A new supplier of this same fabric (new order number #S140) has been located in Montreal and Toronto. A variety of cotton fabrics and cotton towelling are also available.

For further information contact:

George Courey Inc.
5550 Ferrier St.
Montréal, Québec
Canada
H4P 1M2

Tel: (514) 342-6315 Atten:Mme Dahust

Tel: 1-800-361-6338 Atten: M.C. Belleville

George Courey (Canada) Inc.
1750 Steeles Ave. West #15
Concorde, Ontario
Canada
L4K 2L7

Tel: (416) 669-1551

HEALTHAND SAFETYEthylene Oxide Fumigation: A New Warning

John E. Dawson, 6 page bulletin (includes both english and french versions) outlines exposure limits, monitoring, aeration procedure, and supplementary information.

For further information contact:

John E. Dawson
Conservation Scientist
Environment & Deterioration Research
Canadian Conservation Institute
1030 Innes Road
Ottawa, Ontario
Canada
K1A 0M8

Tel: (613) 998-3721

Workshop: Hazards of Fumigation Collections

June 14-15, 1983

A two-day workshop on the hazards of fumigating collections in museums will be held at the Centre for Occupational Hazards.

Publication: "Thymol and Ortho-Phenyl Phenol: Safe Handling Practices"

The Centre for Occupational Hazards has prepared this four-page data sheet on two fungicides commonly used in book and paper conservation. The data sheet was written by Deborah Nagin and Michael McCann.

For further information on the workshop and publication contact:

The Centre for Occupational Hazards
5 Beekman Street
New York, N.Y.
U.S.A.
10038

Re: IIC-CG vol.VIII, no.3, p.3 & 7.

PUBLICATIONS / REVIEWSThe Influence of Ottoman Turkish Textiles and Costume in Eastern Europe

History, Technology, and Art Monograph 4 by

Veronika Gervers, Royal Ontario Museum,
1982, \$10.00

Through a discussion of the popularity and widespread use of Turkish textiles in eastern Europe from the 14th to the early 20th century, the author provides an assessment of their cultural impact on the region and on local textile production. In the course of the inquiry, Dr. Gervers surveys the sources for such a study using, among other documents, trade records, inventories and private correspondence. A chronology of political history and a reference to the reigns of Turkish and Hungarian rulers for this period is included.

A brief glossary lists those foreign words and expressions that are not explained at their first occurrence. The textile terminology used is based largely on the English version of the textile vocabulary of the Centre International d'Etude des Textiles Anciens. The text contains 85 illustrations, with line drawings by the author and photographs from several museum collections.

For further information contact:

Publication Services,
Royal Ontario Museum,
100 Queen's Park,
Toronto,
Canada
M5S 2C6

Re: IIC-CG, vol.VIII, no.3, p.7.

Textile History, Butterworth
Scientific Ltd. - Journals Division,
\$15 annually.

Textile History is a bi-annual journal dealing with all aspects of the role of textiles and costumes in social history, and the techniques of their conservation. Forthcoming issues will include articles by Sheila Landi, Rosalind Hall, J. Goodman and many others. Back issues of the journal (Volumes 1-12) are available.

For further information contact:

Butterworth Scientific Ltd.-
Journals Division,
P.O. Box 63,
Westbury House,
Bury Street,
Guildford, Surrey
GV2 5BH

Re: IIC-CG, vol. VIII, no.2, p.10

The Textile Booklist

Reports on textile conservation and other aspects of textiles / costumes etc.

Head office: R.L. Shep
Box C-20
Lopez Island, Wa.
U.S.A.
98261

For numerous articles and books on textiles, i.e. tapestries, lace etc.

Contact: Musées Royaux d'Art et d'Histoire
Parc du Cinquantaire 10
1040 Bruxelles
Belgique

CONFERENCES / MEETINGS / SEMINARS

Conservation Management Seminar

IIC-CG- "pre-seminar" - May 18-21, 1983
Glenbow Museum - Calgary, Alberta

For further information contact:

Anne Lambert
Faculty of Home Economics
University of Alberta
Edmonton, Alberta
T6G 2M8

Lucien Larose
 Cultural Resources Management
 Programs
 The Banff Centre School
 of Management
 Box 1020
 Banff, Alberta
 TOL 0C0

IIC-CG - Annual Conference

May 22-24, 1983
 Banff Centre, Banff, Alberta

For further information contact:

Elizabeth Richards
 for The Organizing Committee
 IIC-CG Conference 1983
 Faculty of Home Economics
 University of Alberta
 Edmonton, Alberta
 T6G 2M8

Tel: (403) 432-2908

Museum of Fine Arts, Boston announces the:

Fifth International Seminar on Applications

of Science in Examination of Works of Art

September 7-9, 1983

For further information contact:

Research Laboratory
 Museum of Fine Arts
 465 Huntington Avenue
 Boston, MA
 U.S.A.
 02115

Cours offerts par le Conseil des arts textiles
du Québec, le Centre des arts visuels et le
Cégep de Saint-Hyacinthe.

1/ Finition et contrôle de la qualité
 le 20-21 et 22 mai, 1983 de 9h à 17h.

2/ Impression
 les 17-18 et 19 juin, 1983 de 9h à 17h.

3/ Finition et contrôle de la qualité
 les 23-24 et 25 septembre, 1983 de 9h à 17.

ENDROIT:

Cégep de Saint-Hyacinthe
 3000, rue Boullé
 Saint-Hyacinthe, Québec
 J2S 1H9
 Tél: (514) 773-6800

POUR INFORMATION ET/ OU INSCRIPTION*

Conseil des arts en textile
 420 est, rue Ontario
 Montréal, Québec
 H2L 1M6
 Tel: (514) 287-9428
 Responsable: Suzanne Paquette

Centre des arts visuels
 350, rue Victoria
 Montréal, Québec
 H3Z 2N4
 Tel: (514) 488-9558
 Responsable: Régine Mainberger

* Limite de 15 personnes par cours.

Cours offerts par le Centre des arts visuels de
Montréal.

Tissage d'été: avec PUCK KASMA, 30 mai-3 juin 1983
Drapeaux et bannières : avec REGINE MAINBERGER,
 6- 10 juin 1983
Techniques de réserve Batik: avec ANNICK THERRIEN
 6- 10 juin 1983

Renseignements:

Centre des arts visuels
350, avenue Victoria
Montréal, Québec
Canada
H3Z 2N4

Tel: (514) 488-9559

EXHIBITIONS

Galerie Port-Maurice, St-Léonard (Que.)

"Tapisserie haute lisse"
de Nicole Gagné

Du 20 mai au 5 juin 1983

Glenbow Museum, Calgary

A show to honour the 75th Anniversary of world scouting will open at Glenbow in June. This exhibition will coincide with the World Scouting Jamboree which will be happening near Seebe, Alberta, 70km west of Calgary, in July. The Exhibition will feature scouting uniforms, flags, badges and other scouting memorabilia.

Provincial Museum of Alberta, Edmonton

"Life and Dress in the 1930's"
until Aug 31, 1983

Looks at the influence of the arts on high fashion in Alberta and the effects of the Depression on fashion for the masses.

Musée McCord, Montréal

"Bonnetts, chapeaux et coiffes: 1770-1970"

Du 22 juin au 11 mars 1984

Les élégants bonnets, chapeaux et coiffes de femmes qui composent cette exposition proviennent entièrement de la collection de costumes du Musée et relatent deux siècles d'histoire de la coiffure.

Musée Régional Laure Conan, La Malbaie

"200 Ans de Villégiature dans Charlevoix"

"Summer Resort Life in Canada...2 centuries
at Murry Bay"

De juin 1983 à février 1984

This exhibition shall include a lovely linen dress and matching umbrella from the Lisa Binsse collection. This summer dress was worn (circa 1910) by Mrs. Elizabeth Binsse at her summer residence located at Pointe au Pic.

Musée Cantonal des Beaux-Arts de Lausanne

"11e Biennale de la tapisserie, Lausanne 1983"

Du 11 juin au 4 septembre 1983

PEOPLE

Louise Lalonger, completed a one year internship in textile conservation at the C.C.Q., November 1982. She returned on a 6 week contract January- February 1983 to assist with the conservation/restoration of several textiles for the exhibition "Il était une fois une dentellière".

Sharon Little, spent 3 weeks March 21- April 18, 1983 studying with Dr. Liliane Masschelein and her colleagues at the Institut royal du Patrimoine artistique, Belgique. Practical experience was gained in the identification of

dye-stuffs, using the method of thin-layer chromatography. A "hydrolized starch paste" was prepared and used in the treatment of a very fragile silk flag. Part of the time was also spent in assisting with the restoration of a 15th.c Brussels tapestry. In the near future a tapestry restoration loom shall be constructed for the C.C.Q. (the first of its kind in the Province of Quebec) based mainly on the loom plans from the I.R.P.A.

Doreen Rockliff is working on a Master thesis on "Flame Retardant Finishes for Fibre Arts: A Conservation Perspective". She would like to hear of any conservation problems/successes/disasters/research/fairy stories...whatever, relating to the use of flame retardant finishes on textiles. She will be looking at the problem generally and then conducting controlled lab research on the effects of specific finishes on cellulose. She has enclosed a questionnaire in this newsletter which she would like you to fill out and return to her.

Marsha Selick of Queen's University, M.A.C., has a research project for 1982-83 which involves "A study of selected water-soluble polymers as consolidants for degraded textiles". (cf. M. Levesque, 1978, J. Hollard, 1982).

Re: IIC-CG, vol. V111, no.3, p.2.

Kim Sykes, Curatorial Assistant/Textiles, Cultural History Department, is on a 6 month leave to attend the Fibre Arts program at the Banff Centre of Fine Arts. She will be returning to Glenbow in April 1983.

PROBLEMS/QUESTIONS

Glass Beads in Textiles

The Textile Division at CCI is now treating

an Indian beaded coat. Besides the usual challenges associated with composite textile objects, this costume presents a problem not usually associated with textiles. The costume is heavily beaded and four colours of beads in particular are exhibiting various stages of "glass disease", from incipient crizzling to spontaneous disintegration. We would be interested in hearing about other conservator's experiences with this problem.

Contact: H. Holt, CCI, 1030 Innes Rd., Ottawa, K1A 0M8

Supply Problems

Colleen Wilson is looking for a supply source of Vinnapas Emulsion EPI (a PVA adhesive). It is produced by Wacher-Chemie of Germany, but inquiries have not produced any results. Does anyone know of a North American distributor?

Contact: C. Wilson, B.C. Provincial Museum
675 Belleville Street, Victoria, B.C. V8V 1X4

DISCLAIMER

Articles in the Textile Conservation Newsletter-Canada are not intended as complete treatments of the subjects but rather notes published for the purpose of general interest.

Affiliation with the Textile conservation Newsletter-Canada does not imply professional endorsement.

* Typing, printing and postage costs have been assumed by the Ministère des Affaires Culturelles du Québec.