

TCN  
TEXTILE  
CONSERVATION  
NEWSLETTER



Number 19

Fall 1990

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**TCN COVER**

**Detail of Curtain  
Painted and dyed cotton, Coromandel Coast,  
18th Century  
Photo, courtesy of Royal Ontario Museum  
Harry Wearne Collection, gift of  
Mrs. Harry Wearne. Acc.934.4.50**



## FROM THE EDITORS

Thank you for the many interesting submissions. We are looking forward to more. If you are working on a project in which you think TCN subscribers would be interested, send it to us and we will make sure it gets printed. Please send all submissions in typed form or if possible produced on IBM compatible Wordperfect 4.2, 5.0 or 5.1 on 5 1/4" or 3 1/2" disk. Submissions sent by electronic mail (Fax) are welcome but if there are any illustrations that accompany the article, they will not reproduce well. We would appreciate it if the illustrations could be sent by mail or courier if time is running out. For the best production of illustrations and black and white photographs, original photos or copy-ready artwork is required. In the past, some illustrations have had to be redrawn to make them clear enough for printing. We can return your disks but we cannot return the artwork.

In this issue, there are three submissions (two reprints) on health and safety; storage support systems for storing shoes and hats, and the reprinting of an article on the tapestry exhibition in Basel, Switzerland; and a treatment report on a Metis dog blanket.

The TCN Spring 1990 supplementary is also included with this issue. It is called Recent Trends in Costume and Textile Storage by Eva Burnham and Jacqueline Beaudoin-Ross. It is a summary of their investigation of visual or open storage and compact storage which was undertaken

for the expansion plans of the McCord Museum in Montreal which are presently underway.

The mailing address for the ATN Guide to Structural Sewing by Anne Morrell was inadvertently left off of page 28 of Spring 1990 Issue and is included in this issue on page 25.

Inflation has finally affected the subscription price of TCN. As of January 1991, the cost of subscribing to TCN will increase. The details are in the enclosed renewal notice. This is the last newsletter you will receive until you renew for 1991-1992. Unfortunately, because of the high cost of postage, we cannot send reminders.

Eva Burnham  
Ruth Mills

## LETTER TO THE EDITORS

Dear Editors

I hope I have been away from the involvement with the publication of TCN long enough to offer the following praise without accusation of patronage. The editors of TCN are doing a fantastic job - I hope everyone appreciates the time and energy put into this unique publication.

I particularly admire Eva Burnham's dedication over many years in gathering and compiling all the submissions, putting together all the news items and looking after its publication, not to mention all the subscriptions.

I know from experience the meticulous job required of Treasurer. I also know how busy Ruth Mills keeps with her many other activities.

So my congratulations to you both for your success in keeping Canada in the forefront of the international textile conservation scene, with the Textile Conservation Newsletter.

Julie Hughes  
Senior Conservator  
Canadian Museum of Civilization.



## "TAME AND WILD" (ZAHM UND WILD)

### Basel Tapestries of the 15th Century

During the 15th century, Basel with 9,000 inhabitants, rated as the second-largest city on the upper Rhine after Strasbourg with its population of some 18,000. During this period, the tapestry-making craft in both of these imperial cities blossomed with its own characteristic stylistic and technical hallmarks. The people who commissioned the tapestries were noblemen and members of the wealthy middle class. They strove to emulate the dukes of Burgundy by decorating their homes with colourful woven wall hangings. In the hope of guaranteeing protection for their souls, they donated expensive altar cloths or choir hangings to the churches and monasteries of their city.

In Basel, there are documents showing that woven tapestries were being produced here in the 14th century. The oldest surviving examples, however, date from around 1410 and developed from an apparently established tradition of craftsmanship. The Council of Basel was held from 1431 to 1448 and the guests from abroad were astonished by the beauty of the city on the banks of the Rhine, by the elegance of its citizens and by their custom of decorating private dwellings, public buildings and streets with colourful tapestries. The fact that the citizens of Basel had a marked predilection in the 15th century for woven tapestries was not only noticed with admiration by foreign visitors, it is today confirmed by a wealth of source material. For in the inventories of households, churches and monasteries there are surprisingly frequent references to tapestries. In addition, a relatively large number of Basel tapestries from the 15th century have been preserved right down to the present.

In Basel, tapestries were primarily used in private houses, with two thirds of extant tapestries showing secular subjects such as fabulous beasts, wildfolk, hunting scenes and pairs of lovers. A masterpiece of Basel tapestry weaving is the 506 cm picture strip showing wildfolk hunting which hangs today in the Basel Historical Museum. The coats of arms incorporated in the four corners and the lower central section of the picture show

that this work was commissioned and previously owned by Hans von Flachsland who on more than one occasion served the fortunes of the city. He was mayor for ten years, and it was thanks to his diplomatic negotiations that the university was inaugurated in 1460. On the occasion of his wedding to Barbara von Breitenlanden in 1468 he commissioned this hunting tapestry and documented the marriage by proudly incorporating both sets of family arms in the picture.

The wall hanging shows the traditional theme of the hunt and all the hunting lore. The hunters in this work are wildfolk who comport themselves like nobles. From their aristocratic models they have copied not only the hunting animals, but also the equipment and weapons, the behaviour, and also the habit of adorning themselves gracefully with wreaths of flowers.

Wildfolk number among the most popular subjects of the late Gothic woven tapestries from Basel. They are depicted as wild natural beings with human features, whose bodies are covered right up to the face, hands and feet with red, green, blue or brown strands of shaggy fur. They are peaceful creatures, who live freely in nature in harmony with plants and animals alike. Without losing their wild nature, they are capable of serving allegorically for mankind.

The left-hand section of the tapestry shows a young wild woman standing in a hut covered with oak leaves waving to her husband with a carved wooden ladle. The husband is off to hunt with his three hounds. They are already on the scent of a deer, which with antlers proudly held aloft and hanging tongue is trying to break through the game fence. But one of the hounds has already sunk its teeth into the deer's back. The right-hand side of the tapestry shows the hunt being prepared, observed and commented upon.

One couple is using ropes, tree trunks and branches to build another game fence. A be-wreathed huntsman in a garment of blue fur tenderly embraces his lady and tries to divert her attention from the hunt. But the blonde beauty holds her falcon ready on her left hand and tells her lover to be still. In the next scene, one of the wild men gives a young huntress a quail that has been brought down and promises her more prey to come. The action takes place

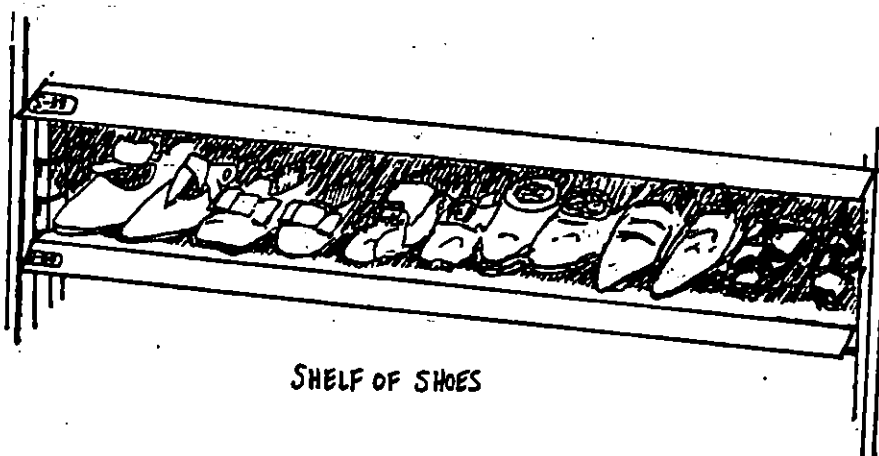
on a grassy bank covered with flowers on which stand to the left a maple and to the right an oak forming a framework to the hunt. Hans von Flachsland's wedding tapestry shows delightfully be-wreathed and peaceful wildfolk as hunters whose goal is not only to catch the game but above all to win the affection of the other sex. It is by no means a coincidence that Hans von Flachsland had the wildfolk hunting a deer, which elsewhere is a symbol of fidelity.

By commissioning this tapestry, he showed that he intended to be always faithful in his marriage and wished to lead an untroubled life with his wife.

A publication of 450 pages under the same title "ZAHM UND WILD", 15th century Tapestries of Basel and Strasbourg, written by authors Anna Rapp Buri and Monica Stucky-Schürer commemorates the large exhibition of 65 tapestries that was held in Basel last year. It is available in German for sfr. 98.00 from the Historisches Museum Basel, Steinenberg 4, 4051 Basel, Switzerland.

This article is reprinted with the kind permission of the Publisher's office of Swissair, where it was published in Swissair Gazette, September 1990 issue. We would also like to thank the Historisches Museum in Basel for providing us with black and white photographs and granting permission to republish this article.

## SHOE STORAGE SOLUTIONS



SHELF OF SHOES

Shoes in the 15,000 piece Henry Art Gallery Textile Collection are given the same Treatment as all other objects in the collection. Each shoe is documented, photographed and properly stored to circumvent future needs for conservation. This article offers simple, practical, affordable collection management solutions which are easily conducted by supervised volunteers.

The Henry Art Gallery Textile Collection includes over 350 pairs of both Western dress and ethnic shoes. A review of shoe storage procedures was initiated by the 1982 transfer of several hundred shoes from the University of Washington School of Drama's historic costume collection, and an effective system to house and maintain the museum's footwear was created.

Previously the collection shoes had been stored in individual shoe bags on shelves with Mylar-encased paper tags sewn to the heel. No attempt had been made to remove surface soils, mend or stabilize the shoes. The shoes were packed with acid-free paper. The Drama Collection shoes had been stored in compartmentalized drawers.

### Evaluation Process

First, a survey was made of shoe storage procedures used in other institutions, and an analysis was made as to how these methods suited the needs of this collection. All decisions took into consideration financial limitations, existing supplies and equipment, and the manpower available to facilitate the process.

### Storage

Museum shoe collections are stored in boxes or on shelves. The variety of heights and shapes of footwear makes box storage inefficient, creates a closed microclimate, and does not respond to the individual needs of the shoes. Shoes wrapped in acid-free paper or stored in cloth bags cannot be viewed without handling, thus mishandling can occur.

The solution was to utilize existing adjustable enamelled metal library shelving units, one foot by three feet in size. These shelves maximize storage space with a minimum of space wastage, and allow easy viewing with a minimum amount of handling.

Each unit holds ten to twelve shelves and is lined with acid-free barrier paper, cut to extend over the front of the shelf. Each shelf is numbered as a separate storage unit with an "S-#" designation, and holds five to six pairs of shoes. Each pair sits side by side, not touching its neighbour. The front of each shelving unit is covered with a muslin curtain that keeps out light and dust, is easily washable, and allows the shoes to breathe. The entire shoe collection was sorted by date and heel height before being assigned its storage location (see illustration).

### Examination and Cleaning

First, a careful examination of the interior and exterior of each shoe was conducted to identify surface soils, instabilities, and possible insect infestation, particularly silverfish and carpet beetles. Shoes are constructed of varying materials, including leathers, fibres, glues, metals, woods, dyes, and chemicals. These materials are often unidentified, which adds to the potential instability of the object and increases the need for careful scrutiny.

Cotton swabs, cotton balls, tweezers, assorted brushes, and a hand vacuum were used to gently and thoroughly examine the interior of the shoe, specifically the toe cavity, interlinings, and insoles to remove lint and foreign residue. Care was taken not to remove anything integral to the shoe's history. Exterior surface soils were gently removed in order to preserve aesthetic integrity and to maintain general collection housekeeping standards.

No attempt was made to restore or conserve the shoes. Buttons, bows, and instabilities were secured and documented on a conservation action form. All ties, buttons and laces were properly closed and tied. There was no attempt to restore or replace missing parts.



## Interior Supports

Improper storage in trunks, boxes, and drawers prior to coming to the collection had resulted in many creases and folds to the shoe uppers. Initial introduction of the acid-free paper stuffing had not significantly altered wrinkles or creases, and the shoes lost the integrity of their shape. A disadvantage to packing with acid-free paper is the distortion that results from over-stuffing. A number of interior support materials were considered. Muslin and polyester pillows were not selected because the interior of the shoe cannot be examined without removing the pillow, and they obscure important evidence found in shoe interiors. Ethafoam was dismissed because it is rigid and inflexible. Various weights of acid-free barrier papers were considered. Acid-free blotter paper was selected because of its weight and archival qualities.

The task was to design a flexible and adjustable shoe form that could apply equally to high-topped boots, sandals, open-toed shoes, as well as to the unusually shaped shoe for the Chinese bound foot. Graduate students in the museum studies program worked with an engineering student to design and execute the initial forms. Their assignment was to construct the forms without using tape, glue, or staples. Use of any type of clip was disallowed because continued pressure produces impressions and surface abrasion potentially damaging to delicate materials. After some experimentation, the result was a three-part shoe form that adjusted easily to varying shapes. The three parts can be used individually or all together to support the shoe.

The toe form consists of one flat piece, slit and tapered to conform to the shape of the toe, and trimmed to echo the vamp. The heel and side support is one narrow piece of blotter paper that is shaped to conform with the width and length of the shoe. It is cut long enough to insert into the toe support, which creates a tension at the back of the heel and keeps the integrity of the shape of the shoe intact. This portion is eliminated for sandals (see illustration). The extended-upper form is used for boots, high-topped shoes, and sandals or shoes with ankle straps. A rectangle of blotter paper the same height as the upper extension is slotted to form a cylinder and inserted (see illustration).

## Labels

A label of 100% polyester single-faced satin ribbon is sewn into the heel or side section of each shoe. The ribbon is cut and taped in strips to a 5 X 8 inch card and the information is typed with an IBM Selectric typewriter with film ribbon. After typing, the taped portion is cut off and discarded. The label is hemmed at both edges and is sewn to the shoe with polyester/cotton thread.

Since forms placed in the shoe obscure the labels, the accession number, date, and storage location are written in pencil on the form which also acts as a precaution should the form ever be separated from its shoe. The month and year of the form placement can also be pencilled on the form for collection management purposes. Format for shoe label:

HAGTC: U. of W.  
82.1-52, ml Accession number  
1850-1855 Date of the shoe  
S - 23 Storage designation

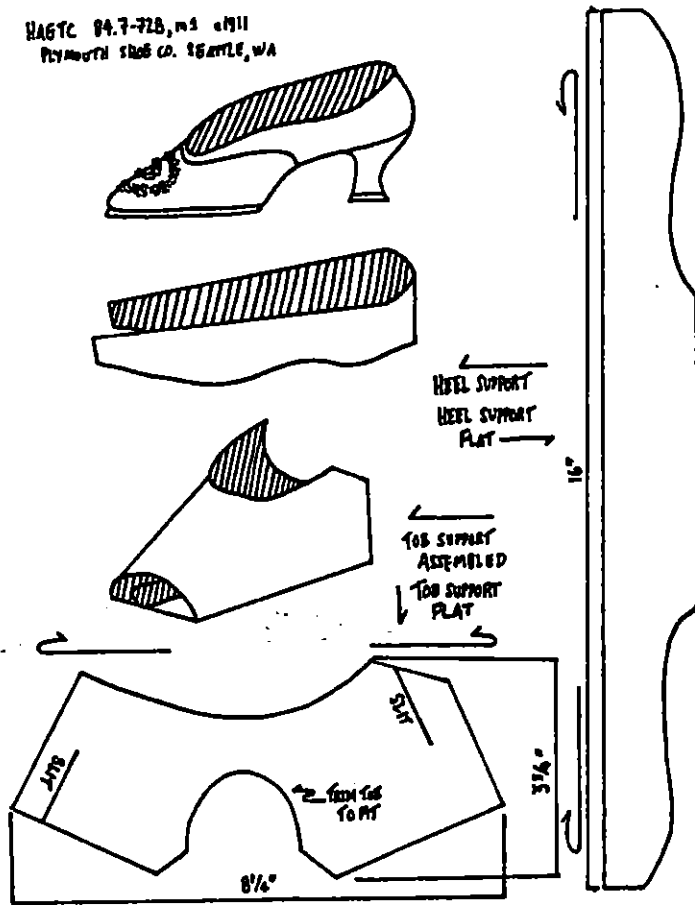
## Conclusion

It has been four years since the shoe form concept was instituted. A follow-up examination of the entire shoe collection was recently conducted. Old wrinkles and creases from folding and improper storage have been greatly relaxed and potential breakage and damage has been circumvented. Photographs of the previously acid-free paper stuffed shoes and those with acid-free blotter paper forms illustrate that we have managed to maintain the shoe's natural shape.

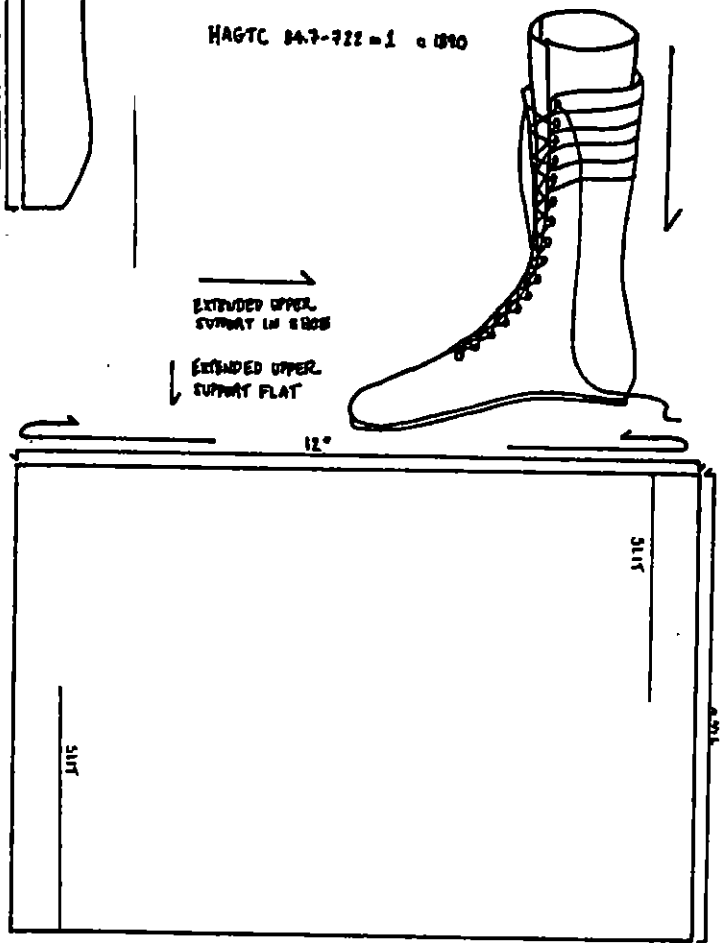
Judy Darlene Sourakli  
Curator of Collections  
Henry Art Gallery  
University of Washington  
Seattle, Washington

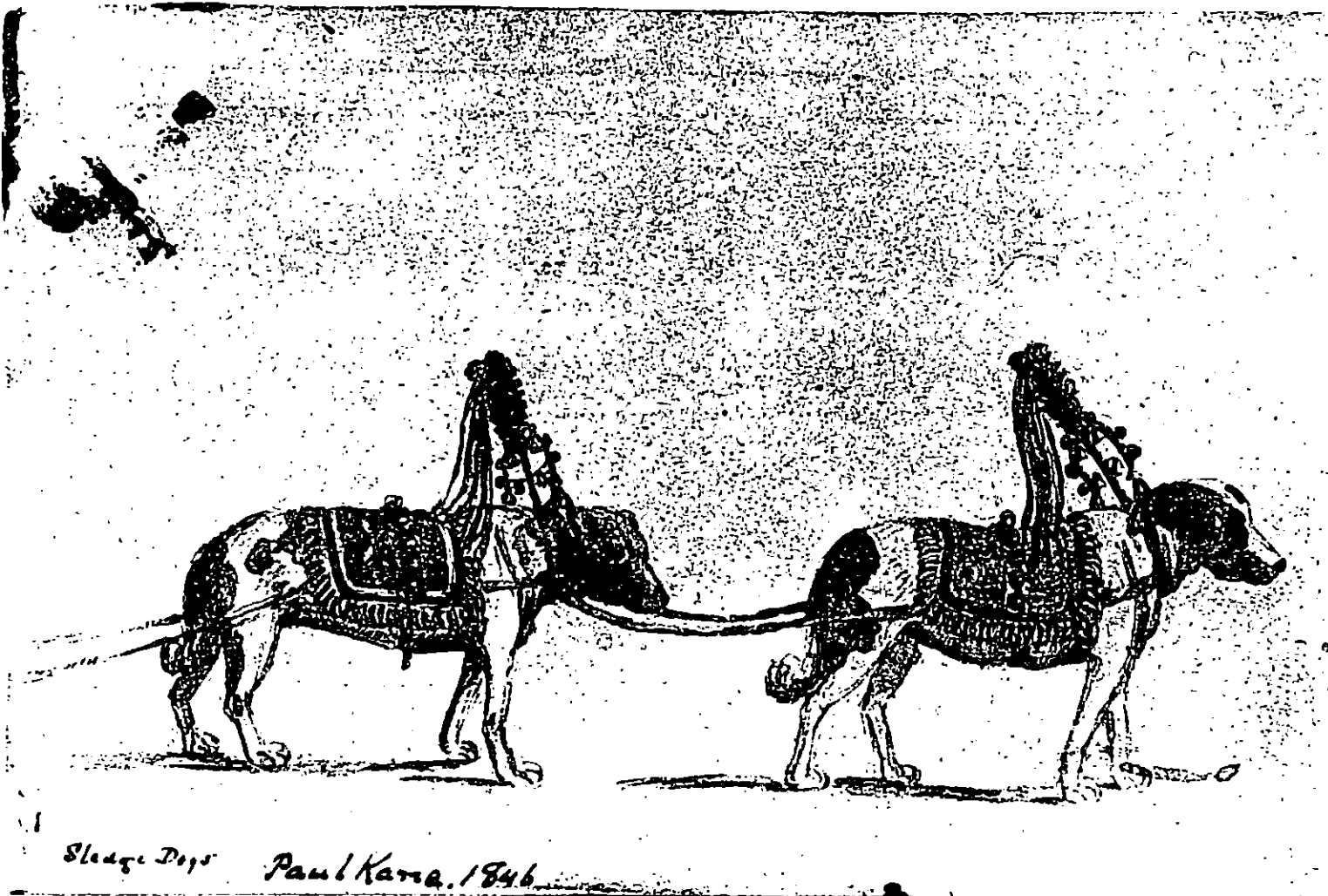
Jeffrey A. Butterworth  
Illustrator, Free-Lance Costume and Textile Researcher

HAGTC 84-7-72B, m1 c1911  
PLYMOUTH SHOE CO. SEATTLE, WA



HAGTC 84-7-722 m1 c1990





Paul Kane (1810-1871)  
Sledge Dogs Decorated for the Wedding Party, 1846  
 watercolor on paper  
 COURTESY STARK MUSEUM OF ART, ORANGE, TEXAS

## CONSERVATION OF A MÉTIS DOG BLANKET

A beautiful Métis dog blanket or "tuppy", intended for the "Métis" module, has presented a number of interesting conservation concerns. This piece, (see sketch #1.), measuring 46 cm by 55 cm, is a mixed media object consisting of a cotton backing, cotton velvet upper fabric heavily embroidered with glass beads and three leather strips with metal bells. There is a cotton fringe around the entire piece and around the centre section of bells. The fabric substrate of this central area was also covered with a piece of silk, of which only remnants now remain. The fringe was very worn and dirty. The beadwork was in good condition and so was the velvet although there was one fairly large hole just to one side of the bells. Initially this piece, on loan from Lower Fort Gary, was scheduled only for minimal work but a decision to keep the piece on extended loan justified a more complete approach.

It was decided to clean and straighten the fringe first. Small sections of the fringe were isolated onto a piece of Mylar topped with four layers of chromatography paper. They were then wetted with several drops of distilled water and blotted with another four layers of chromatography paper. Each piece was re-wetted with distilled water and then several drops of dilute solution of distilled water and Canpac WA paste, (< 1%) were added and the section re-blotted. This procedure was repeated until there was no further evidence of the dirt being removed. Each section was rinsed with distilled water four times using the same blotting technique and then pinned into position using entomological pins on a piece of heavy blotting paper. Moisture was kept from moving up into the velvet by holding a piece of heavy blotting paper at the upper edge of the fringe. The same cleaning method was used for the fringe around the bells.

The remnants of blue-green silk under the bells were realigned and held in position by an overlay of light brown silk crêpe. Several colours of crêpe were tried but the visible silk remnants had discoloured to a brownish-green and this shade was deemed most unobtrusive. We considered covering the entire surface under the bells in order to make an even appearance but this proved to be very difficult as the leather strips were unevenly attached

with heavy stitching to the velvet, making the fitting of a single piece of crêpe very awkward. In the end it was decided to cover only those areas which had the remnants. The selvedge edge of the strips of crêpe was used to secure it to the stronger braid border of the top of the fringe by stitching, using silk crêpe filaments drawn from a piece of the same dyed fabric. A running stitch across the top of the crêpe was secured through the small loops on the braid. At the ends, the crêpe was turned under and secured to the braid in the same manner. The remaining raw edge of the crêpe was also turned under and secured directly to the velvet with a running stitch. In some areas this edge was secured underneath the leather strip with the help of needle drivers ("holders") and small tweezers. Areas where there were small remnants under the leather were similarly covered by carefully easing the silk crêpe underneath and around the stitches holding the leather.

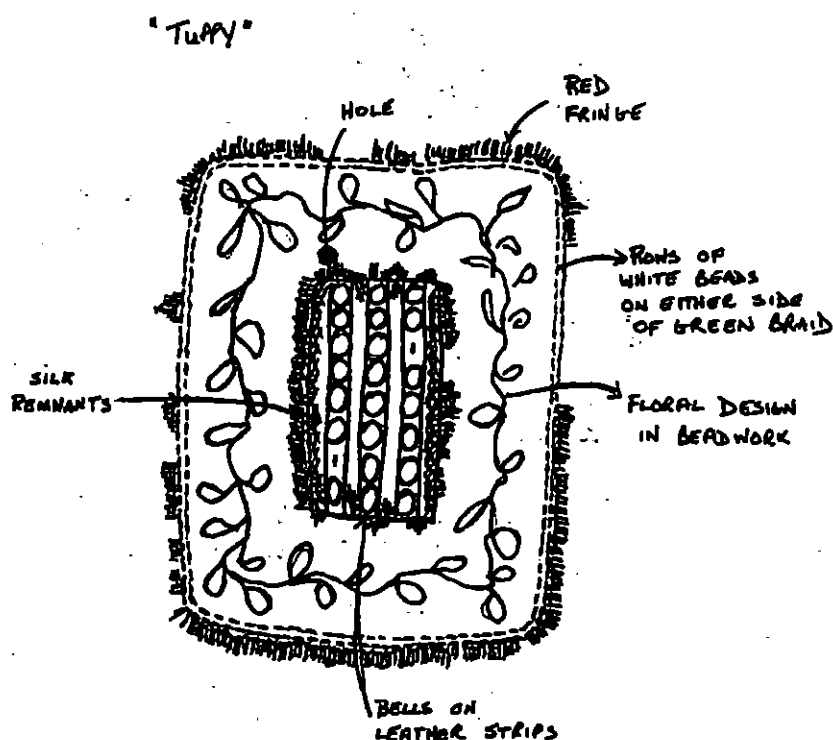
As previously mentioned, there is also a hole (approx. 1 inch in diameter) in the tuppy, which goes through both the upper velvet fabric, and the cotton lining. This will be reinforced, first from the reverse side, by inserting a piece of heavy gauge Mylar to serve as a barrier to the upper velvet. Then a piece of suitable cotton backing fabric will be inserted, and the original lining fabric will be secured to it by couching. Secondly, from the front side, the Mylar barrier will be removed from the hole, then a piece of velvet will be inserted, and the original velvet will be secured to it by stitching.

Many of the surviving strands of the fringe are unravelling or weakened and require some form of reinforcing. It is planned for those which are very weak that a new single core of silk thread will be secured at the top border of the fringe and then carefully drawn down between the plies of the fringe to its tip. At the tip, the new "core" will then be cut off. A crêpe filament will then also be secured at the top and a series of blanket stitches will be worked down to the tip, to bind the original fringe to its new "core". A few stitches at the tip will be worked through the fringe to secure the filament (See sketch #2). Those fringes which are not so weak will be strengthened by blanket stitching only.

The beadwork seems to require no treatment other than a careful dusting using a mini-vac. Two beads came free around the fringe and these were sewn back into place using Gütermann silk thread. A thread was secured with backstitching to the green braid substrate, and run through two secure beads on one side of the gap. This thread was then passed through the two detached beads, through two secure beads on the opposite side of the gap, and then stitched to the braid. This same thread was then used to stitch between each of the replaced beads, as was done originally.

Completion of this treatment, including that for the leather strips and bells, will be described in the next issue of TCN.

Leslie Redman  
Artifacts Laboratory  
Canadian Museum of Civilization  
Hull, Quebec



Sketch # 1

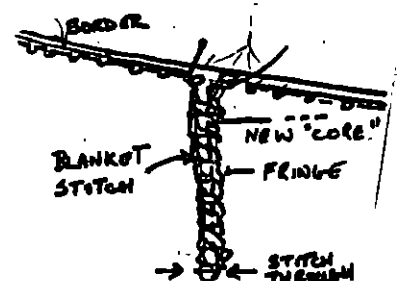


ILLUSTRATION FOR FRINGE REINFORCEMENT

Sketch # 2

## CANADIAN MUSEUM OF CIVILIZATION

### Infestations

In the last issue of TCN, we mentioned that we had begun work on an infestation of carpet beetles discovered during a routine check in one of our off-site textile storage areas. Shortly thereafter, again in connection with a survey, another infestation (of clothes moths) was discovered in a collection of textiles on other premises. All the textiles involved were vacuumed, bagged, frozen, cleaned where necessary, and repacked for storage. (In some situations, where the infestation was most critical, i.e. not just a suspicion of involvement, the textiles were bagged and frozen immediately, and the vacuuming was done subsequently.) This work, together with our regular workload of treatments of textiles for exhibit (see below) resulted in our having processed about 477 textiles since spring. This all serves to emphasize the importance of maintaining regular checks on storage (and exhibit) areas. Although the work involved may be substantial it will at least have been minimized if the problem is detected at an early stage. We also maintain a routine of freezing any textiles received for acquisition, which are in any way suspect with regard to insect problems. A full explanation of our "moth" check and infestation procedures will appear in the TCN spring 1991 issue.

### Postal Museum Textiles

The collection of the National Postal Museum now falls under the care of our Museum. This situation presented a convenient opportunity for Leslie Redman, from Queen's University, who was spending a four month internship (now completed) in our lab. Leslie is an aspiring private textile conservator, and expressed particular interest, before starting her internship, in being involved in the survey of a textile collection. In order to assess the needs of textiles in the Postal Museum collection, a survey project was outlined and discussed in consultation with the staff of the Postal Museum, and Leslie then proceeded to conduct the survey on her own. She produced an excellent report, the recommendations of which are being implemented currently. Treatments, storage improvements, etc., required for these textiles are now

scheduled into our workload, together with "Care of Collections" work for CMC textiles.

The Postal Museum textile collection is composed mainly of postal uniforms and mailbags. Twenty-seven of these mailbags have already been prepared for an exhibit at CMC, entitled "on Track". The mailbags all had leather straps, heavy metal locks, grommets, etc. which negated immersion cleaning, either wet or dry. The bags were all thoroughly vacuumed, and weak areas were backed and secured by stitching.

### Exhibitions/Treatments

The "On Track" show for which the mailbags were prepared is basically about the sorting of mail on board railway mail cars. Besides the artifacts involved, it will include an audio-visual presentation and a hands-on section. The story is seen through the memories of some sixty former railway mail clerks who were interviewed in 1987 as part of an oral history project. The exhibit will run from January 24 to August 18, 1991.

During recent weeks we have also assisted in the dismantling of three exhibits, "Masters of the Crafts", "Arctic Mirrors", and "A Coat of Many Colours", all of which have been mentioned in previous TCN issues. Detailed handling instructions, and photos, were provided for textiles included in the latter exhibit, which will be travelling extensively. Textiles for all the exhibits were vacuumed.

An exhibit of chairs, beds and stoves (title undecided) is being prepared for the Mezzanine of the History Hall (to replace "Treasures"). Of particular note are two Louis XIII armchairs, upholstered in tapestry, which are to be included (six months each on rotation). Both will have "first-aid" treatment to meet the November deadline. Following the close of the exhibit, both chairs will undergo full conservation, as is warranted by the rarity of like pieces in Canadian collections, and by their probable selection for future exhibits.

Julie Hughes  
Textile Conservation Laboratory  
Canadian Museum of Civilization  
Hull, Québec

# NEWS FROM THE ROYAL BRITISH COLUMBIA MUSEUM

## Upgrading of Hat Storage

The need to upgrade the hat storage in the History Collection was evident as some hats were crammed into acidic boxes, while others were crowded into shelves. The goal was to create storage that preserved the individual integrity of the hats, that was easily accessible, physically stable and easily transportable. Metal, enamelled, biology specimen cabinets, with adjustable drawers, were made available to History for this purpose.

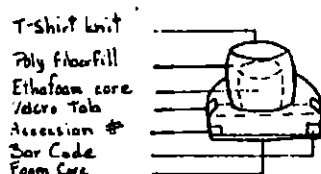
Initially, mounts were custom-made for each hat. Each mount consisted of an Ethafoam core, padding of polyester fibrefill, and a covering of poly/cotton stretch knit fabric. The mounts were stitched to Foam-Core bases which had right angle corners for easy handling as well as for entering accession numbers and future bar codes. Due to the large number of hats in the collection, and the limited contract funds, choices were made as to which hats were mounted. In the final analysis, 171 hat mounts were completed.

To stabilize the hats in the cabinet drawers, Velcro strips were attached to the bottom of both the Foam Core bases and the drawers. The loop side of the Velcro was hot-glued to the underside of the Foam-Core, leaving tab extensions for easy handling. The hook side was first stitched to strips of unbleached cotton muslin, which in turn were hot-glued in rows to the metal drawers. This was done because the Bostik hot-melt glue did not secure the Velcro alone, to the metal surface. The glue, **VELCRO # 45 ADHESIVE**, designated for adhering Velcro to metal was deemed unsuitable because of the possible presence of sulphur.

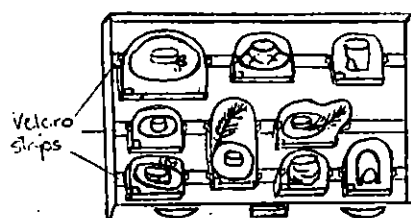
It was hoped that this storage method would be stable enough, with minimum additional packing, to allow moving and jostling of the cabinets, during the projected museum move. As a further precaution, the hats that did not fit snugly onto the mounts because of their flat or shallow crowns, were carefully restrained with cotton twill tape. This was followed with a word of caution to remove the ties upon cessation of the move.

In addition to the mount-making procedure, several hats were cleaned, an inventory of the hats was taken and location cards updated.

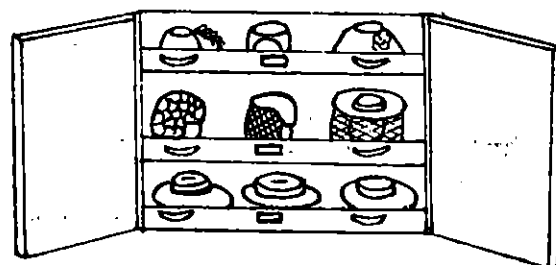
HAT MOUNT



CABINET DRAWER



STORAGE CABINET



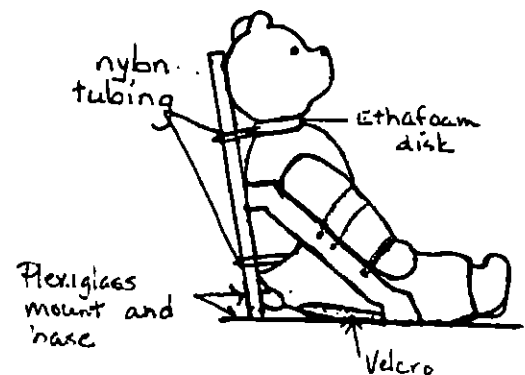
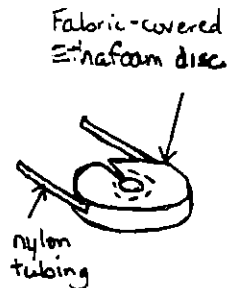
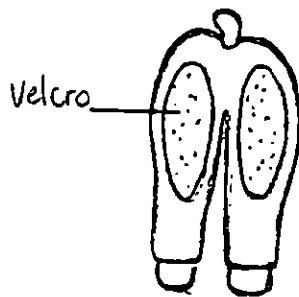
### Upgrading Teddy Bear Mount

The articulated Teddy bear that had been travelling with an exhibit through the province for the last 2 years, returned to the Conservation lab in sorry condition. He had separated from the mount for the second time. Previously he had been covered with nylon tulle net and attached to a plexiglass mount with nylon monofilament. The mount had been bolted onto a plexiglass base on which the bear sat.

This time, a more secure mounting method was incorporated into the existing mount and base. Velcro was used to secure the bear to the base. The loop side was sewn to the underside of the pants. The hook side was attached with heavy-gauge nylon monofilament, through drilled holes, to the plexiglass base. Nylon monofilament was passed around the waist, underneath the pants, and attached to the plexiglass mount with metal washers and bolts.

The friction between the bolts and tubing was sufficient to prevent dislodging. The paws and arms were attached to the mount with nylon monofilament.

The mechanism for movement was causing problems. It consisted of a metal rod passing through the body, attaching to the head and tail. When seated, pressure on the tail pushed the head up, revealing a 1/2 inch gap between head and neck. To minimize head motion and to conceal the gap, a broadcloth-covered Ethafoam disc was carefully inserted into the space. The sparse neck fur was drawn down over the disc, in an attempt to disguise it. Nylon tubing passed under the fabric, around the circumference of the disc and again bolted to the mount back. To maximize protection during travelling, the flexible, foam-lined packing crate was abandoned for a sturdy plywood crate. Bon Voyage Teddy!  
(Editor's note: TCN, Spring, 1987 pp 5-6)





## Garment Storage Units

The RBCM staff have been gearing up for a major Collections move because of asbestos removal from the building. At this time it is unknown if the Collections will be stored temporarily off-site or rotated floor by floor within this building; or if the final location will be the present building or a new structure. In this volatile setting, Conservation staff have been carrying out pilot projects to work the bugs out of a computer program and procedures for a projected move.

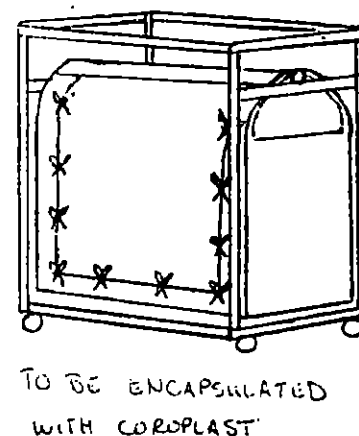
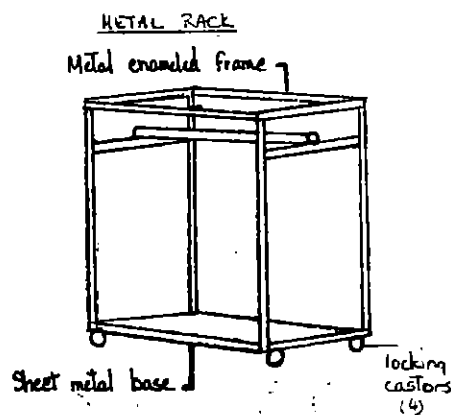
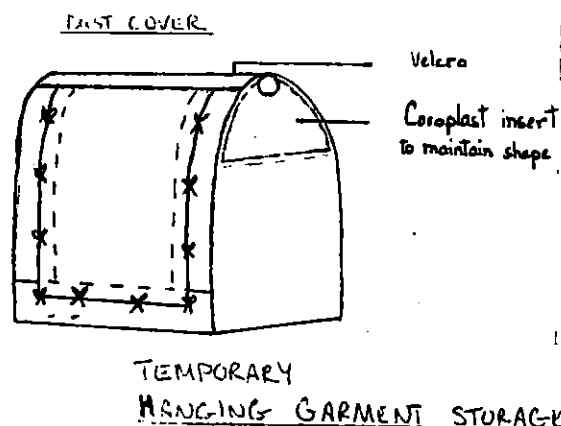
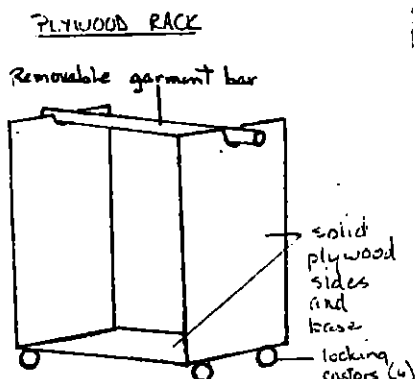
As part of the textile pilot project, temporary storage units for hanging garments were designed and fabricated. The units were to provide protection from abrasion, dust, water and insects, as well as be easily accessible. The filled units were to consist of garments enclosed in fabric dust covers, suspended on garment bars on movable racks, with Coroplast sheeting encapsulating the rack frame.

Two types of moving garment racks were constructed. One, built in-house, was of plywood. The other, manufactured off-site, was of enamelled metal.

A dust cover prototype was made of unbleached cotton ticking with Coroplast reinforcements. Velcro strips at the top allowed for easy attachment to the garment bar. A side opening facilitated access. Twill tape ties served as closures.

The project has progressed thus far. It is planned that Coroplast sheeting will be taped to the rack frame. At this point, discussion and review of the pilot project is ongoing and the units are subject to revision.

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Royal British Columbia Museum  
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# HEALTH AND SAFETY

## TEXTILE FUMIGATION WITH PHOSPHINE

Phosphine is sometimes recommended by commercial pest control companies for use on museum materials, including textile collections. Their recommendations are usually based on its comparatively low cost, its reputation for effective kill and the convenience of being able to fumigate collections in situ sealed under polyethylene sheeting. However with the increased agitation about health risks this type of tent fumigation is being discontinued especially in urban areas.

Hydrogen phosphide gas, also known as phosphine, is a highly toxic, flammable gas produced by the reaction of a metal phosphide with water vapour. It is supposed to be lethal to all insects providing that the concentration is maintained at a minimum of 200 ppm for a species specific exposure time in aerobic conditions; the presence of oxygen being essential for the absorption of phosphine by insects. (1) The gas is extremely mobile, resulting in excellent penetration through densely packed materials, such as heaped grain or piles of textiles, but it also disperses very rapidly so it requires careful sealing to maintain kill concentrations.

Phosphine was developed primarily as a grain and tobacco fumigant and there is still not a great deal of information in museum literature about its possible effects on artefacts. In addition commercial operators are often ill-informed about the limitations of their fumigants for use on cultural material, so museum staff under pressure to control an active insect infestation could be misled into a hasty choice.

As a conservator, (and health freak), I do not believe that phosphine offers any real advantages over safer alternatives such as freezing or carbon dioxide fumigation. Nevertheless the Royal Ontario Museum has been using it on a regular basis for approximately four years so the following information based on our experience with Phostoxin™ (see appendix 1), may be of some use in assessing it as a fumigant in the context of your own particular collection.

### Effectiveness Against Textile Pests

Phosphine is a fumigant insecticide with no residual kill, it is not effective against fungi, bacteria or pathogens.

Exactly how it kills insects is still a matter of controversy. Since Phosphine is known to have affinity with metals, one theory is that it reacts with metal containing enzymes in the presence of oxygen. Another suggestion is that it reduces the disulphide bonds in insect protein which raises the issue of possible effects on proteinaceous textile fibres.

Eggs, pupae and dormant insects are much more resistant than adults and larvae because insects have to be actively breathing for the biocide to be effective. Museum staff sometimes refrigerate infested material or bag it with mothballs as an interim measure, and both can cause the adults to enter a dormant state which may allow them to survive subsequent fumigation.

Studies on the effects of phosphine on agricultural pests has indicated that different species show different reactions and absorption rates (1, 2). Increased concentration of phosphine does not necessarily increase the mortality count, instead it can induce a narcotic state in the insect from which it may later recover, i.e. dosage control and exposure time should be adjusted according to species tolerance. Because most of the research has been directed against agricultural problems, the critical concentration and exposure time for many textile pests has not been conclusively established.

As with most fumigants there tends to be a very small percentage of natural survivors, (but a significant one in view of their breeding potential), and research has indicated that resistant strains can develop (2, 4). This is rumoured to have occurred already in Africa (9).

At temperatures below 25°C the gas does not generate as quickly from the tablets so longer exposure times are necessary to reach kill concentration. Below 10°C, (or below 40% RH), it is difficult to obtain adequate concentration at all, (3, 11), so it is not generally suitable for in situ fumigation of museums or historic houses which have been closed for the winter with minimal heating.

Many plastics, including polyethylene, impede the diffusion of phosphine, (4, 5, 6), bags and plastic wrap or packing should be opened to avoid protecting the insects or trapping enough phosphine to constitute a health hazard for the staff.

These parameters for phosphine fumigation indicate that it has to be carefully controlled and monitored to ensure that it is effective. At the Royal Ontario Museum several non-accessioned pieces continued to emit adult case-making clothes moths, *O.*, in apparently robust health after two phosphine fumigations spaced one month apart. However it is not absolutely certain that they were not reinfested between fumigations.

### Health Risks

Hydrogen phosphide is extremely poisonous to mammals as well as to insects, and the earlier "advantages" of less stringent health requirements, (e.g. shorter periods of post fumigation airing when used on non-edible products), have been abandoned. It is still not registered for museum use in some areas so it is as well to check under what conditions it can be used in your locality and to ensure that the obligatory post-fumigation monitoring is being carried out with equipment that is actually capable of measuring levels of phosphine as low as 0.1 ppm.

The ability of thin plastic films to trap or absorb phosphine necessitating prolonged aeration after fumigation has been noted in the context of military and agricultural containers (4, 5). This would suggest that sponge plastics, such as those used for some mannequins or in modern padded clothing and upholstery, pose a much greater risk. Hazard information relating to Phosphine is listed in appendix 2.

### Possible Damage to Textile Collections

One of the strongest reasons against the use of phosphine on museum collections is that there has been very little investigation into its chemical interaction with materials other than agricultural produce. This is exactly the same reason usually given for using it, i.e. that there is very little documented evidence against it! However lack of knowledge cannot logically be equated with safety either for museum personnel or the artefacts.

One area where phosphine is acknowledged to be corrosive is on metals, especially precious metals. Research by the Degesch company indicated it is more harmful than our own samples (8), which were only visually examined, would have led us to expect. They found alteration in gold and zinc whereas only our silver, copper and low carat gold specimens appeared to be affected. The corrosion of iron alloys appears to be unpredictable.

As a general rule metals which were already tarnished or corroded suffered much greater damage during fumigation than those whose surfaces had been abraded clean with a glass brush, i.e. there was no protective effect from patination. This aggravated attack on tarnished surfaces is particularly harmful to metal threads. Several samples of embroidery in gold and silver thread were fumigated and even when they did not appear to the naked eye to have tarnished much more than the controls, examination under the microscope showed heavy pitting which severely weakened the threads. Areas on the same threads which had been scraped clean before fumigation also tarnished but much less severely, the threads remained strong.

Phosphine is particularly aggressive towards copper and copper compounds, and this is aggravated by the ammonia in the Phostoxin™ formulation. In one instance the brass shanks of some brass buttons corroded right through.

If the fumigation takes place in humid conditions, the corroding copper bleeds into the surrounding fabric as a black stain which is very difficult to remove. If the corrosive salts are not washed out they rot the textile. Our samples of new unbleached cotton and linen became crumbly and friable within 10 weeks.

Copper corrosion can be completely controlled by properly applied benzotriazole or a lacquer containing benzotriazole. Other protective barriers, (waxes, oils, varnishes), were not effective. Unfortunately because of the nature of many costumes it is not easy to apply benzotriazole to metal attachments such as minute brass beads.

This problem with metals and metallic salts is of great concern because they are often hidden or inaccessible, (covered buttons, stiffeners etc). Their presence may also be unsuspected, for example in dyes and mordants. In a group of wool samples dyed with vegetable dyes using different mordants, all those with copper based mordants showed increased colour saturation, if the humidity in the fumigation chamber rose above 60% they became brown with a very harsh handle. Iron and aluminium mordants did not seem to be altered.

Many dyes of unknown composition on a variety of materials discoloured in various ways but in most cases reverted to their original colour within a few weeks. With repeated fumigations however the change sometimes became permanent. Dyes on humidity indicator strips were affected this way. The discolouration was only obvious if compared with controls but the readings on the fumigated strips were no longer accurate.

It is reported that the characteristic garlic odour of phosphine, which is caused by an (unspecified) impurity, can be filtered out by passing it through flour, or some other absorbent substance (7), without noticeably altering the properties of the flour! This has disconcerting implications for textiles sized with starch. The only known starched samples I have exposed were 3 artificial flowers of undyed cotton which had been detached from their stems, washed and stiffened with wheat paste. After one fumigation they became slightly brown when compared with the control specimens. With subsequent exposures they became progressively darker and the starch lost its stiffness. This is too small a test sample to be conclusive, obviously more experimental work still needs to be done on fumigated sizes. Silica gel, (the non-indicating type), was also badly discoloured by fumigation, but slowly reverted to its original white colour over the course of several weeks.

According to the research carried out for the Degesch company, bales of cotton and wool can be fumigated safely. Our samples of cotton and linen appeared to be fine. There was yellowing and handling changes in some of our undyed wool, sheepskin and white feathers. Undyed silks surprisingly showed no apparent ill effects: weighted silks have not been tested yet.

In all types of damage the harm was aggravated dramatically if the fumigation occurred at elevated humidities but the RH cannot be lowered sufficiently for damage to be negligible since phosphine does not generate fast enough below 40% RH. The 'safest' RH parameters would seem to be 45-50% but many fumigation chambers are not able to offer adequate RH control.

### Conclusion

In consideration of the many problems involved in fumigating cultural artefacts with phosphine it is advisable to examine any collection of mixed materials (and the species infesting them) very carefully before deciding to use it. In general I would not recommend it.

### Appendix 1

The Brand name Phostoxin™ (Degesch America Inc.), refers to greyish pellets or tablets consisting of 55% aluminium phosphide combined with 41% ammonium carbamate impregnated with a small amount of paraffin. Aluminium phosphide reacts with water vapour in the air, (or very violently with liquid water), to produce hydrogen phosphide, (phosphine gas). The paraffin in the pellet retards the hydrolysis reaction by delaying the access of the water vapour and thus increasing the handling safety for operators. The first stage in the decomposition of the pellet is the breakdown of the ammonium carbamate releasing ammonia and carbon dioxide. This serves as a warning odour and also dilutes the phosphine with a non-combustible gas reducing the risk of explosion or combustion. The residue remaining after fumigation is composed of relatively inert, non-toxic aluminium oxide and other aluminium salts, which can supposedly be disposed of fairly safely in most waste systems, provided that any remaining phosphide residues are inactivated before disposal.

## Appendix 2

**Safety Data:** Phosphine Gas

(This information was compiled from the current Material Safety Data Sheets and other sources, (3,10,11) and was intended for internal use in our museum).

**Synonyms:** Phosphine, hydrogen phosphide, phosphorus hydride, Fosfowodor™, Phostoxin™

**Uses:** Fumigant insecticide primarily used for grain and storage pests.

**Properties:** Colourless, very mobile gas. Diffuses readily even at low temperatures.

Strong garlic-like odour also described as resembling rotting fish., (Pure phosphine is supposed to be odourless, the smell is caused by an impurity, the odour threshold is approximately 0.02 ppm unless the phosphine has been purified).

S.G. = 1.24 (i.e. slightly heavier than air)  
Very slightly soluble in water. Not soluble in fats or oils.

**Toxicity:** Severe lung irritant, acute systemic poison. TLV: 0.3 ppm. (Threshold limit value, time weighted average based on an 8 hr. day, 40 hr. week). These levels are currently under review.

STEL: 1 ppm. (Short term exposure limit, 15 mins.). Currently under review.

Immediately dangerous level: 200 ppm.

Routes of entry: Inhalation. Skin absorption.

Acute effects: (May be delayed several hours). Restlessness, anxiety, headache, dizziness, tremors, nausea, diaphragmatic

pain and chest oppression, possible pulmonary edema, coma, convulsions, death. (NOTE: 3 staff members in the R.O.M. experienced what appears to be temporary peripheral facial nerve damage - a feeling of numbness and stiffness across the face and lips - after prolonged handling of recently fumigated material. These symptoms are not recorded as being typical of Phosphine poisoning and have not occurred with every fumigation, possibly indicating the presence of some contaminant.

Chronic effects: Not Known

Organs affected: Central nervous system, respiratory system.

Reproductive effects: Recent publication (1989) suggests genotoxic effects. Currently under review.

Carcinogenic effects: None found (Nat. Cancer Inst. Report 1984).

**Flammability:** Flammable gas, dangerous hazard from spontaneous chemical reaction. Burns with a luminous flame. Heat decomposition emits very toxic oxides of phosphorus.

Auto ignition temperature: 100C.

**Explosion Hazard:**

Lower explosion limit in air 1.79% by vol. in air. Should not be used under forced pressure or vacuum pressure. Violent reaction with halogens, powerful oxidizers or water.

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## PRECAUTIONS FOR TEXTILE CONSERVATORS

1. Plan the lab with health and safety in mind. Floors and surfaces should be made of materials which are easily sponged clean and which will not stain. General ventilation rates or air currents should not be so strong that dusts could be raised.
2. Install ventilation systems appropriate for the work done. For example, provide local exhaust such as chemistry fume hoods, flexible duct exhausts, or slot hoods for all processes which release toxic air borne substances such as solvent use, and handling powdered materials or dusty fabrics. Vent dryers, hot baths and similar equipment.
3. If a vacuum table is used:
  - a) be sure the pump which draws the vacuum will not be damaged or be a fire or explosion hazard if solvent vapours are drawn through it; and
  - b) vent the pump's exhausted air to the outside if it contains toxic vapours or gases.
4. Obtain Material Safety Data Sheets (MSDSs, information sheets available from all manufactures, distributors and importers) on all chemicals. If dyes and pigments are not identified by their Colour Index names and numbers or by their Chemical Abstracts Service numbers, ask your supplier for this information. Avoid suppliers who will not provide MSDSs or identify ingredients.
5. Use MSDSs and product labels to identify the hazards of any toxic solvents, acids, or other chemicals in dyes, paints, inks, mordants, or other materials. If solvents are used, follow all precautions for solvents, and pay special attention to fire safety.
6. Choose water-based products over solvent-containing ones whenever possible. Obtain MSDSs on these products as well. Some water-based products contain significant amounts of very toxic water-miscible solvents.

7. Avoid using powdered materials when possible. For example, buy premixed dyes and liquid chemicals when possible.
8. If toxic powdered materials must be used, handle them where local exhaust ventilation is available or use a glove box (a plexiglass enclosure with holes for your arms which will contain the dust while you handle powders).
9. Keep containers of powders, solvents, etc., closed except when you are using them.
10. Identify hazards in new projects before starting work on them. Obtain any treatment records, history, and any other documentation which may exist. If dust or other contaminants are observed, analyze this material for hazards such as pesticides, toxic metals, biological hazards (molds, mildews, etc.), and any other hazard which the history indicates may be present.
11. Avoid procedures which raise dusts or mists. Shaking out dusty textiles, using aerosol cans or airbrush products, and similar techniques should be discontinued or performed in a local exhaust environment such as a spray booth.
12. Avoid skin contact with chemicals or materials whose hazards are not known by wearing gloves. If skin contact does occur, wash skin with mild cleaners and follow with a good emollient cream. Allow dye or chemical stains which will not wash off to wear off. Never use solvents or bleaches to remove them. (Bleaches are especially hazardous because they may break complex colorant molecules in the skin into more toxic components).
13. Wear protective clothing, including a full-length smock or lab coat. Leave these garments in the lab to avoid bringing dusts home. Wash clothing frequently and separately from other clothes.
14. Protect eyes by wearing chemical splash goggles if you use caustic or corrosive chemicals. Install an eye wash fountain near where these materials are used (and emergency shower if large amounts are used).
15. Clean up spills immediately. Follow Material Safety Data Sheet advice and have handy proper materials to handle spills and disposal. Wet-mop and sponge floors and surfaces. Do not sweep.
16. Avoid ingestion of materials by eating, smoking, or drinking outside the lab. Never point brushes with your lips, use your teeth to cut thread, etc. Never use a utensil for food once it has been used for chemicals or dyes. A pot which seems clean can be porous enough to hold hazardous amounts of residual chemicals. Wash your hands before eating, smoking, applying make-up, or other personal hygiene tasks.
17. Dispose of chemicals in accordance with health, safety, and environmental protection laws.
18. Always be prepared to provide your doctor with precise information about the chemicals you use and your work habits. Arrange for regular blood tests for lead if you are exposed to lead from sources such as lead-containing paints or pigments, and deteriorating lead-weighted silks.

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Monona Rossol  
M.S., M.F.A.  
Industrial Hygienist  
and founder of the  
Centre for Occupational Hazards.

Ms. Rossol would be pleased to hear from you,  
she can be contacted at:

Arts, Crafts, and Theatre Safety (ACTS)  
181 Thompson Street, No. 23  
New York, NY 10012

Other publications on this subject are:

The Artist's Complete Health and Safety Guide  
by Monona Rossol, 1990  
published by Allworth Press  
New York, US \$16.95  
Distributor: North Light Books  
1507 Dana Avenue  
Cincinnati, Ohio 45207

**Safety in Museum and Galleries**

by F. Howie

editor, 1987

published by Butterworths

80 Montvale Avenue

Stoneham, Maine, 02180

U.S. \$36.00

**The WHMIS Handbook**

Corpus Information Services

1450 Don Mills Road

Don Mills

Ontario M3B 2X7

Cdn. \$139.00 plus tax

A Catalogue on Health and Safety publications is also available from Corpus Information Services.

## DICHLORVOS CARCINOGENICITY UPDATE

The National Toxicology Program (NTP) has recently published a report (NTP Technical Report No. 342), describing the toxicology and carcinogenicity of dichlorvos as evidenced by research in rats and mice. Dichlorvos is one of several pesticides that is commonly used in museums to protect specimens and collections. It is an organo-phosphate available in liquid preparations as well as in pest-control products, such as pest-strips, that are often used in display cases. Common names include DDVP and Vapona.

Previous animal studies had indicated an increased risk of cancer, leading to further studies. This research study included both short-term (13-week), and long-term (2-year) studies in male and female animals. While body weight and survival rates were the same in both test group and control group, there are reported differences in neoplastic effects. Results of these studies conclude that there was some evidence of carcinogenic activity as shown by increased incidence of adenomas of the exocrine pancreas and mononuclear cell leukaemia. There was equivocal evidence of carcinogenic activity of dichlorvos for a certain strain of female rats as shown by the increased incidence of adenomas of the endocrine pancreas and

mammary gland fibroadenomas. Reported was some evidence of carcinogenic activity in a certain strain of male mice as shown by an increase in the incidence of forestomach squamous cell papillomas. Lastly, there was clear evidence of carcinogenic activity of dichlorvos for a certain strain of female mice shown by an increase in the incidence of forestomach squamous cell papillomas. (See following article for definition of degrees of evidence.)

In this report, dichlorvos was found to be mutagenic in one bacterial strain and not another, mutagenic in a mouse lymphoma cell assay, and induced sister chromatid exchanges and chromosomal aberrations in Chinese hamster ovary cells.

These reports firmly establish the carcinogenicity and mutagenicity of dichlorvos. We recommend against conservators and museum workers using this chemical since there is no safe level of exposure to carcinogens. Also, dichlorvos should not be used in the control of pests in household pets, even though pest strips and pet pest control products contain 0.5% or less active dichlorvos.

Both the Occupational Safety and Health Administration and the American Conference of Governmental Industrial Hygienists have set exposure limits for dichlorvos at 1 mg/cubic meter averaged over an 8-hour work shift. These limits were set previous to the above studies.

Other health hazards from exposure to dichlorvos include adverse liver effects and nervous system intoxication, mutations (genetic changes), nervous system damage (cholinesterase inhibition), and personality changes of depression, anxiety and irritability.

## NTP CRITERIA

The National Toxicology program (NTP) coordinates staff, programs and resources from the public health agencies listed below for both basic and applied research on select chemicals, and also on biological assay development and validation. The agencies that make up NTP include: the National Cancer Institute (NCI); the National Institute of Environmental health Sciences (NIEHS); the National Institutes of health; the National Center for Toxicological Research (NCTR); the Food and Drug Administration



(FDA); the Centres for Disease Control (CDC); and the National Institute for Occupational Safety and Health (NIOSH).

Research is intended to evaluate the toxicological potential, including the carcinogenic potential of chemicals in laboratory animals, usually rats and mice. Chemicals researched are chosen because of their human exposure, level of production, and chemical structure. NTP states that selection doesn't indicate carcinogenic potential.

There are five categories of carcinogenicity used by the NTP that summarize the strength of the evidence in experiments:

- \* "Clear Evidence" and "Some Evidence" both describe positive results. "Clear Evidence" refers to a dose-related increase of malignant, malignant and benign, or benign (if previously shown by other research to progress into malignancy) neoplasms.
- \* "Some Evidence" reveals a related increase of malignant, benign, or combined neoplasms at a lower level of response than for "clear" evidence.
- \* "Equivocal Evidence" describes uncertain findings.
- \* "No Evidence" indicates negative findings.
- \* "Inadequate Study" reveals research that is too flawed to evaluate.

The above interpretive categories were first adopted in 1983.

NTP Technical reports are available at the National Technical Information Service. U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

By Angela Babin M.S.

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# CONFERENCE AND COURSE REPORTS

## Winter Institute 1990 Winterthur Museums and Gardens

Anyone suffering from mid-career doldrums, or the winter blues should consider taking advantage of the excellent programme offered by Winterthur Museums every winter commonly referred to as "Winter Institute". This four week training programme specializing in American decorative arts is offered each year in the months of January and February at Winterthur near Wilmington, Delaware. While the experience could hardly be considered a holiday (it is demanding and exhausting), it is definitely a shot in the arm for work-weary professionals.

The main purpose of the programme is to train new interpretive staff at Winterthur. Each year twelve to fifteen spaces are reserved for "outside" professionals. Competition is tight, but it pays off in providing a diversified group of participants. My class included people from California to Maine, museum curators, private collectors, appraisers and college professors. The blend made for some lively discussions.

The programme curriculum was broken into blocks of time each dealing with a topic of material culture research or the decorative arts. Sessions were a combination of lectures presented by experts in each field of study, hands-on workshops to examine pieces from the extensive collections at Winterthur and room studies in the museum to study the presentation of pieces within period rooms. The collection is very strong in 18th and early 19th century pieces that we rarely see here in Canada. Field

trips to area historic houses and museums in Philadelphia, Baltimore, Odessa and the Brandywine River area rounded out the weekends.

The museum collection is comprised of over 89,000 objects made or used in America between 1640 and 1860. There are 196 period room settings, a conservation facility and an incredible research library. This library is open 24 hours a day, and houses an impressive collection of rare books, trade catalogues and manuscripts dealing with all aspects of material culture and decorative arts. The staff and visiting lecturers at Winterthur are extremely professional and were happy to share their expertise during the Winter Institute.

Costumes and textiles were only a small part of the curriculum, and may have been represented in too general a way for true aficionados. Susan Swan, Curator of Textiles, presented sessions on textiles and needlework and Mary Hammond Sullivan dealt with oriental carpets. Winterthur was furnished in an era when 18th century silk gowns were cut up for upholstery fabric, and the collection is not extensive in costumes. Some very early examples of canvas work, Berlin work, crewel, samplers, quilting, marseilles, candlewicking, tambour etc. are available for study.

Anyone wishing further information on the Winter Institute should feel free to call me at (613)938-5746. I highly recommend the experience.

Pam Buell  
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Cornwall, Ontario  
Canada K6H 6S3

For application information please write to:

Winter Institute  
Winterthur Museum and Gardens  
Winterthur, Delaware  
19735, U.S.A.  
Tel: (302) 888-4846

## COSTUME SOCIETY OF AMERICA

The Costume Society of America held its 16th Annual Meeting and Symposium in Washington, D.C. from May 16-18, 1990. The symposium was sponsored by the National Museum of American History of the Smithsonian Institution, the Department of Human Ecology at the University of Maryland and Region II of the Costume Society.

The Symposium topic this year was "Appearance and Gender Identity", a topic that obviously attracted a lot of attention; approximately three hundred people attended the conference. Among these three hundred, however, persons of the "masculine persuasion" were remarkable by their absence. One of the notable male attendees was R.L. Shep; on the last day he wore a skirt.

The Symposium was planned to coincide with an exhibit at the National Museum of American History entitled, appropriately enough, "Men and Women". The exhibit included several hundred costume items and accessories, enough to satiate even the most object-hungry costume curator.

The papers presented at the symposium ran the gamut from the erudite to the entertaining. The range of topics was extremely broad. Included were topics such as "Who Wears the Stripes? Gender and Authority in Airline Crew Uniforms" presented by Donna Corbett of the National Air and Space Museum; "Comely, Virile and Useful: Gender in the Origins of the Three-Piece Suit", by David Kuchta and "Male-Female Duality in Inuit Clothing", by Betty Issenman.

No mention was made among the abstracts, however, of the most interesting and I might add, most controversial presentation of the Symposium. This highlight was a presentation by a performance artist, Erica Batsdorf. She presented not a paper, but a choreographed set piece, a

"ballet" of stereotypical masculine and feminine gestures, poses and postures. She presented the identical movements three times: first, provocatively dressed as a woman, in a business suit, as a young man. The audience was electrified! During her costume changes, which occurred on stage, she discussed with the audience, their reactions to each piece. As might be imagined, the responses were emotionally charged and no one who was present is likely to forget the 1990 Symposium!

Not necessarily in order of importance, the food was good, the company was stimulating and the presentations inspiring. What more could a person ask for? Only a chance to go again next year. (Next year the Symposium will be held in Boston. The topic is "Costume and Social History").

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## **CONFERENCES COURSES INTERNSHIPS SEMINARS AND LECTURES**

**Conference on the Colourfastness of Materials Exposed to Natural or to Manufactured Sources of Light. Co-sponsored by the American Association of Textile Chemists and Colourists and the Inter-Society Colour Council.**

**Williamsburg, VA.  
February 26, 1991.**

Contact: Jacqui Welker  
PPG Industries  
3800 West 143rd Street  
Cleveland, OH 44111.

**The International Institute for Conservation  
Canadian Group 17th Annual Conference  
University of British Columbia  
Vancouver B.C.  
May 24-26, 1991**

John Stewart  
Programme Chair  
IIC-CG Conference 91  
Box 9195  
Ottawa, Ontario  
Canada, K1G 3T9  
(613) 993-2125

Inquiries about the programme may be directed to the above address or by telephone.

**AIC 19th Annual Meeting  
June 3-8, 1991  
Albuquerque, New Mexico**

The 19th Annual Meeting of the American Institute for Conservation of Historic and Artistic Works will be held June 3-8, 1991 in Albuquerque, New Mexico.

A pre-session on Natural Disaster Mitigation, June 3-4, will include presentations and discussions by specialists of information networks, weather and geological services, governmental authorities, experts in the sociology of emergency networks and responses, conservators, and other museum professionals who have developed or executed disaster plans.

The general session, June 5 and 7, will be opened with a keynote address by W. Richard West, director of the Smithsonian Institution's National Museum of the American Indian. The general session will include a special session on sacred objects, papers on recent developments in the field, and updates from the Book and Paper and Paintings Specialty Groups.

Specialty Group sessions will be conducted by the Architecture, Book and Paper, Objects, Paintings, Photographic Materials, Textiles, and Wooden Artifacts groups on June 6 and 8. The Conservators in Private Practice Sub Group will meet on June 4. Other highlights of the meeting include an exhibit of more than two dozen conservation and related suppliers, and tours of Taos and Albuquerque.

Additional information and registration materials are available from:

American Institute for  
Conservation of Historic and Artistic Works  
1400 16th Street, NW  
Suite 340  
Washington, D.C. 20036  
(202) 232-6636.

**Ninth Annual Conference on Textiles  
July 19-21, 1991  
West Lafayette, IN.**

Sponsored by the Charles Babbage Research Centre, University of Manitoba, Winnipeg, Canada, and *Ars Textrina* a refereed professional journal; will be co-hosted by the Department of Consumer Sciences and Retailing, and Creative Arts at Purdue University. Scholars in textile history, theory, practice and development are encouraged to submit previously unpublished original research papers for presentation at the conference. Possible topics include history of textile technical or aesthetic design, trade patterns, or economics; textile conservation and/or restoration; innovative manipulation of fabric structures; aesthetic concepts in fabric structures. Papers will be refereed for presentation at the conference as well as publication in *Ars Textrina*. At least one author of the paper must attend the conference and present the paper. The deadline for receipt of typewritten abstracts, maximum of two pages, is April 1, 1991. Contact: Dr. Cheryl Nelson, Department of Consumer Sciences and Retailing, 313 Matthews Hall, Purdue University, West Lafayette, IN 47907; (317) 494-8316.

**Saving the Twentieth Century: The Degradation and Conservation of Modern Materials: Symposium 91.  
Ottawa, Ontario, Canada.  
September 16-20, 1991.**

Call for papers. Will be hosted by the Canadian Conservation Institute. The conference theme will be the conservation of objects made from modern materials. The focus will be synthetic and modified natural polymers, metals and composites as they relate to museum collections. Contact: Cliff McCawley or David Grattan, Symposium 91, Canadian Conservation Institute, Department of Communications, 1030 Innes Road, Ottawa, Ontario, Canada, K1A 0C8; (613) 998-3721.

**Scottish Society for Conservation and Restoration ..**  
**SSCR Conference**  
**Paper/Textiles: The Common Ground;**  
**Glasgow, Scotland**  
**19-20 September 1991**

Please note the new date and venue.

There has been a terrific response to our call for abstracts for proposed papers. Delegates from the USA as well as the UK have expressed interest in participating and attending this conference.

Topics to be covered are wide ranging and include the differences in the celluloses found in textiles and those found in paper; their different chemistries and response to conservation treatments such as enzyme cleaning; bleaching (including light bleaching); the use of surfactants and detergents, etc. Various case studies will be presented including historic sample books; the use of paper as a support for textiles and vice versa; Japanese hanging scrolls and school wallprints. The use of large items of equipment such as low pressure tables in both paper and textile conservation and the properties and uses of different types of water soluble adhesives will also be discussed. Preprints will be published. For further details including booking forms, cost etc please contact Linda Eaton, The National Museums of Scotland, York Buildings, Queen Street, Edinburgh. EH2 1JD. Telephone (031) 225-7534.

**COSTUME SOCIETY OF AMERICA**  
**17th Annual Symposium**  
**Boston, Massachusetts**  
**May 15-17, 1991**

The symposium theme is **American Dress as Social History**. The programme will begin with keynote speaker Laurel Thatcher Ulrich, noted social historian and author of "Good Wives" and more recently "A Midwife's Tale". She will discuss clothing as an important aspect of both social history and womens history. About 18 additional papers will be presented.

The Symposium will be held at the Park Plaza Hotel, just off the Boston Common. If you would like to receive a brochure, outlining the entire program, write or call Kaye Kittle Boyer, Costume Society of America, 55 Edgewater Drive P.O. Box 73 Earleville, MD 21919. (301) 275-2329

## LECTURES

**Lectures at the Heury Art Gallery**  
**University of Washington**

**1990-1991 Textile Collection Study Exhibitions**

**"Colour, Form and Symbolism in Chinese Costume**  
**Selections from the Permanent Collection"**

**October 16, 1990 to February 8, 1991**  
**Hours: 12:00 to 5:00 Tuesday - Friday**  
**Class visitation by appointment**

Four seminars on Chinese costume and this study exhibition will showcase the results of the documentation of the Henry Art Gallery's Chinese costume collection by John Vollmer, prominent Chinese costume scholar. The exhibition will include a small selection of these textiles and form the basis for the production of an educational teaching kit on Chinese costume and symbolism funded by a grant from the National Endowment for the Arts. Text for the exhibition has been provided by Nina Ventura, exhibition consultant.

**Upcoming:**

**The Spring Textile Study Exhibition will be:**

**"Wrapping Her Up: Women's Outergarments"**

**February 19, 1991 - June 7, 1991**  
**Hours: 12:00 to 5:00 Tuesday - Friday**  
**Class visitation by appointment**

The exhibition will survey the Henry's collection of outergarments from the 1860s through the 1920s, exploring the evolution of the silhouette. The exhibition will be curated by James R. Crider, adjunct Curator of Western Dress.

**Exhibition location: Henry Art Gallery Textile Collection**  
**Chemistry Library Building, second floor**

Wednesday, January 16, 1991

12:30 - 1:30 pm

"Images of American Women and Quiltmaking Revivals"

Ruth Vincent, M.A. in Anthropology and Museum Studies will explore the traditional concepts of American women as the impetus for the revival of quiltmaking in the 1920s and 1930s.

Wednesday, February 6, 1991

12:30 - 1:30 pm

"Octopus Bags"

Ann Jespersen, M.A. candidate in Museology

University of Washington

Ann Jespersen will focus on the changes in form and floral design that occurs in Native American beaded bags.

For more information please contact the Henry Art Gallery  
University of Washington

Seattle, Washington

(206) 543-2280

## INTERNSHIPS

### Laboratories Offering Internships

In 1826 the Englishman James Smithson bequeathed his property to the U.S. Government to found the Smithsonian Institution "for the increase and diffusion of knowledge among men". In the 1990's the Smithsonian is a large complex of museums and research facilities devoted to the fields of history, the arts, and the sciences. Within this organization postgraduate internships are offered in conservation laboratories listed below, followed by the names and telephone numbers of internship supervisors. All are located in Washington, D.C. or vicinity, except for the Cooper-Hewitt Museum, which is in New York City.

Cooper-Hewitt Museum, founded as a resource for professional designers and students of the decorative arts, has outstanding collections of wallcoverings, decorative arts, furniture, textiles, and prints and drawings.

Textile conservation: Lucy Commoner (212) 860-6875

National Museum of American History has extensive collections that represent the experience of the American people, reflected in its diverse conservation laboratories. Decorative objects/textile conservation:

Nikki Horton

(202) 357-1795

Costume conservation:

Paulette Willman

(202) 357-1735

The Conservation Analytical Laboratory is the Smithsonian's center for research and training in the conservation and technical study of museum objects and related materials. More than forty specialists in conservation; archaeology; art history; organic, inorganic, and analytical chemistry; materials science; and information acquisition work together in laboratories well-equipped with analytical instrumentation.

Textile conservation:

Mary W. Ballard

(301) 238-3792

## Application Procedure

In advance of application, all interested candidates must contact persons with whom they wish to work. The purpose is to ascertain current activities and strengths of the individual laboratories so that the appropriateness of application can be determined. If you wish to contact a conservator by mail, send your correspondence to the conservator at their museum, Smithsonian Institution, Washington, D.C. 20560; except for the Cooper-Hewitt Museum, 2 East 91st St., NY, NY 10128. Candidates can be considered for more than one laboratory.

### Applications should include:

- a cover letter stating where the postgraduate intern is applying, the conservators who have been receptive to considering the application, and the candidate's preference;
- a statement of the candidate's interests and intent in applying for the postgraduate internship;
- a curriculum vitae which includes basic biographical information, citizenship (if not a U.S. citizen, give date and place of birth), education and work experience, work and residence addresses and telephone numbers, social security number, and list of references with telephone numbers;
- copies of pertinent publications, lectures, or other written material;
- transcripts (photocopies are acceptable) of both undergraduate and graduate courses of academic studies (can be sent under separate cover);
- two supporting letters from conservation professionals familiar with the candidate's work (can be sent under separate cover).

These materials must be received by February 1, 1991 addressed to:

#### First class

Internship Secretary  
CAL/MSC  
Smithsonian Institution  
Washington, D.C. 20560

#### UPS

Internship Secretary, CAL  
Smithsonian Institution  
4210 Silver Hill Rd.  
Suitland, MD 20746

#### Fax

Internship Secretary, CAL  
(301) 238-3709  
(301) 238-3667

Candidates will be notified in writing as applications are received. If you do not receive prompt notification, telephone the internship secretary at (301) 238-3700.

### Selection Process

After preliminary selection, final candidates may be invited for interviews. All applicants will be notified by April 15, 1991, of the final decision of the selection committees.

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**IIC-CG**  
**APPLICATION FOR MEMBERSHIP**  
**March 1, 1991 - February 29, 1992**

Membership to the International Institute for Conservation - Canadian Group (IIC-CG) entitles you to one copy of the Code of Ethics and Guidance for Practice, quarterly issues of the Bulletin, an annual issue of the Journal, an annual Directory of Members, and the Abstracts of papers presented at the Annual Conference.

Membership fees for 1991-92 are:

Regular member: \$45,  
Institutional member: \$75  
Student member: \$20  
Supporting member: more than your appropriate category

Your personal cheque, bank draft or money order should be made payable to "Treasurer, IIC-CG". Cheques drawn on a Canadian bank should be in Canadian funds, those drawn on a U.S. bank in U.S. funds. Please send your application for membership to: IIC-CG, P.O. Box 9195 (Terminal) Ottawa, Ontario, Canada K1G 3T9.

## PUBLICATIONS CONSERVATION SUPPLIES

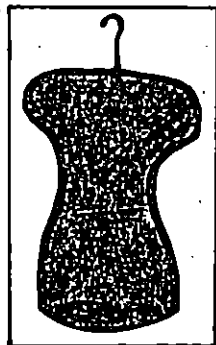
### Mannequin Hanger

The "Mannequin Hanger" was designed to provide the ultimate support for costumes. Is intended for use when hanging is a viable storage option, and an ordinary padded hanger would be inadequate. The torso shape of this hanger allows for maximum shape retention, and minimal stress. The use of shoulder and waist tapes should be unnecessary in most circumstances.

The internal support for the "Mannequin Hanger" is an extremely strong wood fur coat hanger. The covering is 100% desized cotton, and bulk polyester fibre has been blown in for a firm, plump, shape. The hook has been covered with plastic tubing for further protection.

#### SPECIFICATIONS:

Length including hook = 70cm.  
Length of hook = 15 cm.  
Width around hips = 78 cm.  
Width around shoulders = 101 cm.  
Width of hanger = 7 cm.  
Weight of hanger = 9.92 kg.  
Colour = White



PRICE: \$ 16.00 U.S. plus shipping costs  
Accessories for the Care and Preservation of Fine Textiles

Cherish  
205 West 86th Street  
New York, NY  
10024  
(212) 724-1748

### Limited Edition Poster Issued By Joseph Brant Museum

The Joseph Brant Museum is well known for its historic textile collection which consists of some 8,000 pieces, primarily costume and costume accessories for men, women and children, that date back to the early 1800's.

These have been acquired over the last thirty years and the collection continues to grow.

One person in particular is responsible, Mrs. Eileen Collard for whom our Costume Gallery is named, thanks to Mrs. Collard. She has never lost interest the Joseph Brant Museum. Thanks to Mrs. Collard, the Joseph Brant Museum is able to present its first limited-edition poster, Early 20th Century Dress Silhouettes.

Based on Mrs. Collard's drawings and colour renditions, this 18X26 inch poster illustrates the "shapes" of 1867, 1874-94, 1895-97, 1900, 1902, 1915-17, 1920-25. On a white background each silhouette is framed by a vivid Victorian colour. Posters are available by sending your cheque for \$16.00 to the Joseph Brant Museum, 1240 North Shore Blvd. E., Burlington, Ontario, L7S 1C5

This is a limited edition of 250 prints, the first 150 prints will be signed by Mrs. Collard, your cheque will reserve your signed poster.

ATN Guide to Structural Sewing  
by Ann Morell  
Department of Textiles and Fashion  
Manchester Polytechnic

Copies are available from:  
J.P. Wild  
Ancient Textile Unit,  
Dept. of Archaeology  
Manchester University  
Manchester, England

Money orders for £ 6.00 sterling should be made out to Manchester Ancient Textile Unit.



# EXHIBITIONS

## CANADA

Panache: two hundred years of Fashionable Women  
Vancouver Museum  
Vancouver, B.C.  
until August 1991

Kashmir and European Shawls  
until March 1991  
Silk and Gold Textiles from Sumatra, Indonesia  
until March 1991  
Liturgical Vestments  
until February 1991  
Textile Trekking in Southern Peru  
until February 1991  
The Museum for Textiles  
Toronto, Ontario

Hat Tricks  
until March 31, 1991  
Musée Marsil  
Saint Lambert, Quebec

## USA

Wrapped in Glory:  
Figurative Quilts and Bedcovers 1700-1900  
Los Angeles County Museum of Art  
Los Angeles, CA  
until January 27, 1991  
Crossroads of Continents: Cultures of Siberia and Alaska  
Gene Autry Western Heritage Museum,  
Los Angeles, CA  
until February 24, 1991

From Bunny Suits to Business Suits: Detroit Goes to Work  
Detroit Historical Museum  
Detroit, MI  
until April 1991

Theatre a la Mode: Exhibition of 1945 Haute Couture Dolls from the Musee des Arts de la Mode in Paris  
Metropolitan Museum of Art  
New York, NY  
from December 1990

Visions of Infinity  
Textile Museum, Washington, DC, until February 1991



UN TOUR DE CHAPEAUX!

Du 9 janvier au 3 mars 1991

HAT TRICKS!

January 9 to March 3, 1991

MUSÉE MARSIL MUSEUM



The **TEXTILE CONSERVATION NEWSLETTER** is published twice a year in the spring and fall. For a two year subscription:

North America 29.00 Cdn.

Outside North America 39.00 Cdn.

Back issues of Textile Conservation Newsletter and Supplementaries:

North America - 4.00 Cdn.

Outside North America - 5.50 Cdn.

postage and handling included.

We welcome submissions on:

Textile Conservation, History Technology, Analysis and information on upcoming courses, conferences and exhibitions. Submissions address changes and correspondence should be addressed to:

Textile Conservation Newsletter P.O. Box 4811, Station E  
Ottawa, Ontario Canada K1S 5J1

**Editors:** Eva Burnham  
Ruth Mills

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Eva Burnham

**Treasurer:**  
Ruth Mills

#### Disclaimer

Articles in the Textile Conservation Newsletter 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 does not imply professional endorsement.

Deadlines for 1991/92 are: 31 March and 30 Sept.

ISSN 11-80-3649

TEXTILE CONSERVATION NEWSLETTER SUBSCRIPTION	
NAME:	
MAILING ADDRESS:	
SUBSCRIPTION TERM 91/92	
INSTITUTIONAL SUBSCRIPTION: YES NO:	
BACK ISSUES (Please Specify):	
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