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Care of Mounted Specimens and Pelts – Canadian Conservation Institute (CCI) Notes 8/3



by Tom Stone
revised by Carole Dignard, 2015

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Introduction

Many museum collections include mounted birds and mammals as well as furs and pelts. These objects greatly benefit from the general care and routine maintenance described below.

Handling

Caution: The skins of some mounted specimens in the past may have been treated with arsenic and mercury compounds or organic pesticides, such as DDT, applied as pesticides to inhibit insect attack. These substances are dangerous and can cause severe skin irritation or other toxic symptoms. Therefore, proper health and safety procedures are important whenever pesticides are present, or are even suspected to be present. This includes wearing nitrile disposable gloves, a dust smock or Tyvek oversuit and a particle filter mask (N95 or higher) when handling such specimens. Proper disposal of any contaminated gloves or other items that come in contact with the pesticide-contaminated specimens or pelts is also essential.

Improper handling is a major cause of damage, particularly to mounted specimens, which by their nature are rigid. It is quite easy to break a wing, leg or tail or to damage feathers if the objects are handled roughly. These objects should be lifted by the base and cradled between sandbags to prevent movement.

Although pelts are generally more pliable than mounted specimens, carefully handle them so that they are not excessively stretched or folded. Adequate support, especially for large, heavy pelts, is essential. Lay them on a rigid board, covered with Mylar (Melinex) polyester film, or construction polyethylene sheeting, to help prevent damage when they are moved.

Often, hair is continuously lost from mounted specimens and pelts. Little can be done to reattach hair or prevent its loss; therefore, these objects should be handled as little as possible. As well, these must be protected from dust since routine cleaning or dust removal would lead to further losses. If necessary, dust removal can be done in a safe manner to avoid hair losses, but it is difficult, tedious and time-consuming. Contact the Canadian Conservation Institute (CCI) for further advice if warranted.

Storage

Damage from insects is a major consideration for furs, pelts and feathers. The larvae of some common museum pests (e.g. clothes moths, carpet beetles) can destroy these materials in a matter of days. Inspect mounted specimens and pelts for insect damage

every three months (consult [Agent of Deterioration: Pests](#), CCI Notes 3/1 [Preventing Infestations: Control Strategies and Detection Methods](#) and 3/2 [Detecting Infestations: Facility Inspection Procedure and Checklist](#), as well as Technical Bulletin 29 [Combatting Pests of Cultural Property](#)). Immediate action must be taken if an infestation is detected. Contact CCI for advice.

Provide good ventilation in the storage areas to help prevent insect attack and mould growth. For example, use fans to maintain air movement.

Dust is not only unsightly, it causes damage—it is abrasive, can accelerate chemical deterioration and can provide nutrition for insects or mould. As well, dust can be difficult to clean because it becomes trapped among fur hairs or the fine structure of feathers. Protection from dust is therefore important, especially if furs or pelts are losing their hair. Good housekeeping in the storage area is essential. Storing pelts and specimens in closed cabinets or in boxes will help prevent dust and dirt from settling on them. Alternatively, objects can be protected from dust by covering them loosely with clean, tightly woven cotton drop sheets. Polyethylene sheeting may also be used if it is “tented” over the specimens so that the sheet does not touch them.

Never store objects in areas where environmental conditions are poor, e.g. near non-insulated pipes (where there is a risk of condensation or high RH), near radiators (which cause high temperatures) or on concrete floors. Avoid areas where there are risks of water leaks and keep objects away from lights, which can cause damage both by localized heating and excessive illumination. To prevent specimens from fading, store them in the dark.

Relative Humidity and Temperature

The recommended range of relative humidity (RH) is between 45% and 55%. At RH levels above 65%, there is a danger of mould growth on mounted specimens and pelts. At very low RH levels, the extreme dryness can lead to desiccation and can cause cracking and embrittlement. Rapid changes in RH are also detrimental, especially to mounted specimens. The rapid fluctuations cause stresses in the different materials that are assembled to make up a specimen, which can lead to splits, tears and damage.

It is also preferable to avoid temperatures above 25°C; however, this is less critical as long as the RH is maintained in the proper range. Make sure that the radiant heat from bright spotlights does not heat up tightly closed display cases or raise the surface temperature of the specimens on display. These problems are avoided by maintaining

low light levels and using lights that do not emit a lot of radiant heat. Fluctuations in temperature can cause fluctuations in RH that lead to damage.

CCI's [Agent of Deterioration: Incorrect Relative Humidity](#) and [Agent of Deterioration: Incorrect Temperature](#) provide CCI's current approach to controlling ambient RH and temperature in museums.

Illumination

All types of fur and feathers are subject to discolouration by light (both visible and ultraviolet). Dark colours fade and light colours become yellow. The most fugitive will fade or discolour even at low light levels after a cumulative dose of 20 years (8 hour days) on exhibit. Such photochemical changes are irreversible; they can only be prevented by carefully controlling exposure to illumination.

Ideally, furs and feathers should not be subjected to light levels higher than 50 lux with a maximum ultraviolet light content of 75 $\mu\text{W}/\text{lm}$. The length of time that furs and feathers are lit for display should be monitored and rationed. Information on the measurement of light levels can be found in [Agent of Deterioration: Light, Ultraviolet and Infrared](#).

Cleaning

Items Known to be Pesticide Free

Specimens that are stored or displayed in the open (i.e. not in cases) should be dusted at least twice a year. This can be done with a soft brush. Always brush in the direction of the growth of hair or feathers. Brush towards a vacuum cleaner nozzle covered with a piece of gauze or plastic screening. This prevents accidental loss of loose parts on the specimen. Never apply the vacuum cleaner nozzle directly to a specimen.

Special caution should be exercised when handling furs from the deer family. The hair on older specimens can be brittle and may either pull out or break off when brushed and vacuumed.

For advice on cleaning extremely soiled objects or on repairs, please contact the Objects Laboratory at CCI.

Items Contaminated with Pesticides or Suspected of Being Contaminated

Do not clean these items! Contact an experienced conservator for more information on pesticide removal, or contact CCI.

Suppliers

Note: The following information is provided only to assist the reader. Inclusion of a company in this list does not in any way imply endorsement by the Canadian Conservation Institute.

Particle filter masks, nitrile gloves:

Safety suppliers such as:

www.uline.ca/Cls_30/Gloves

www.waynesafety.com

www.acklandsgrainger.com/Safety

Mylar (Melinex) polyester film, or polyethylene sheeting:

suppliers of plastic products or construction materials