Canadian Conservation Institute
Institut canadien de conservation

CCI Notes 6/4

Care of Objects Decorated with Glass Beads

Introduction

Many objects in Canadian museums are decorated with glass beads in a multitude of colours, shapes, and sizes. Glass beads are almost always found in combination with other materials. Glass beads are frequently threaded with sinew, cotton, or wool, and are usually applied to commercially tanned or native-tanned (semi-tanned) leather or to a woven wool or silk support material. When caring for these kinds of items, consideration must be given to weak support and threading materials. Most frequently, the beads simply become dirty or loose, but occasionally the glass itself may deteriorate.

Relative Humidity

Each of the materials present in an artifact expands and contracts individually in response to changes in atmospheric moisture. This can create stress at points where different materials come into contact. It is therefore important to try to maintain an appropriate, stable relative humidity (RH) or at the very least to slow the rate of RH change.

Extremely low RH conditions may cause sinew on which beads are threaded to shrink and become embrittled. Shrinkage of sinew usually causes beads to be pulled together tightly. This can cause cleavage of individual beads, especially if the adjacent bead has a rough or sharp edge. If beads in a decorated panel are tightly pulled together, the overall flexibility of the panel may be lost. In extreme cases, a panel may buckle out of proper alignment. If the threading material is brittle, even careful handling may cause breakage and a subsequent loss of beads.

Mould may flourish on a thread or support material made of wool, silk, or leather in conditions of high RH (over 65%). Mould can weaken, discolour, and stain these materials (see CCI Notes 8/1, *Removing Mould from Leather*). High or low RH may also accelerate deterioration of unstable glass. Signs of instability include a fine crazing over the surface, a crusty or sticky deposit on the surface, or numerous cracked or broken beads.

The optimum RH for most objects decorated with glass beads is a stable, fixed value between 45% and 55%. Unstable glass, depending on its condition, may be best stored at a slightly higher or lower relative humidity. If signs of unstable glass are noted, it is best to contact CCI or an experienced conservator for advice.

Temperature

High temperatures accelerate the embrittlement of organic materials found in conjunction with glass beads. Every effort should be made to maintain display and storage temperatures at less than 25°C.

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Take care to prevent radiant heat, generated by bright spotlights, from heating tightly closed display cases and raising the surface temperature of the objects. Therefore, maintain moderate light levels. Using lights that emit less radiant heat prevents this temperature problem (see CCI Notes 2/2, *Daylite Fluro-Spray Floodlight*).

Illumination

Coloured glass beads are not sensitive to high light levels. However, uncoloured glass sometimes turns purple when exposed to high levels of ultraviolet light. Silk or dyed wool support materials are very light-sensitive; they fade and become embrittled under excessive light. This damage is irreversible. Light levels for objects containing silk or wool should not exceed 50 lux light intensity and should contain less than 75 µW/lm of ultraviolet light. Unless they are painted or dyed, skin or leather substrates are not as light-sensitive as silk or wool. Light levels in these cases can reach up to 150 lux, with less than 75 µW/lm of ultraviolet light.

Protect objects on display from sunshine and daylight, and do not place them near bright artificial light sources. Information regarding the measurement of light levels can be found in CCI Notes 2/4, *CCI Environmental Monitoring Equipment*, and CCI Notes 2/5, *Using a Camera to Measure Light Levels*.

Storage

Because of the light-sensitivity of materials decorated with glass beads, store beaded objects in the dark. To protect objects from the effects of small, rapid RH fluctuations, wrap them in hygroscopic materials, such as unbuffered acid-free tissue or clean cotton fabric, and place them in acid-free containers.

Flexible objects or objects of unusual shapes, such as beaded bags, require special support. To maintain their shape, lightly fill such objects with unbuffered acid-free tissue paper (see Figure 1), cloth inserts filled with polyester batting, or rolled acid-free paper inserts. Heavily beaded objects are best stored and displayed flat. Ensure that beaded fringes are well supported and do not hang over the edges of shelves.

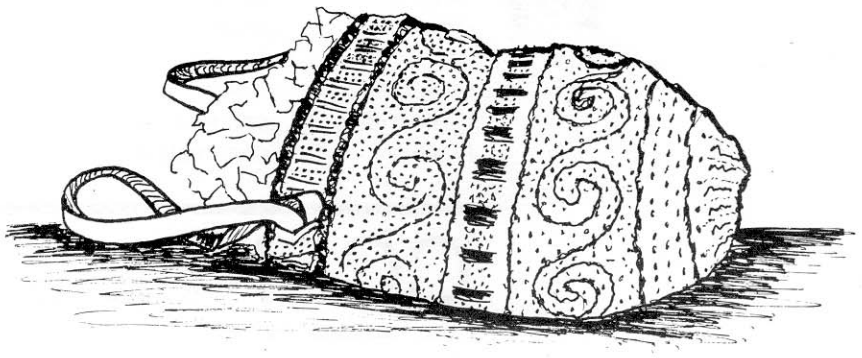

Figure 1. Object filled with unbuffered acid-free tissue.

Due to its weight, clothing decorated with beads should be laid flat rather than hung. Hanging strains seams and threads and creates folds and creases that will, in time, distort the applied decoration. Sleeves, folds, and other shaped areas can be lightly filled with unbuffered, acid-free tissue paper or batting-filled pouches to maintain the desired shape. Wrap objects that have loose beads in acid-free tissue paper and place them in a box so that if beads do fall off they will remain with the object. Place all detached beads in a labelled container and store them with the object.

The irregular surface of beadwork catches and holds dust particles. Dust, besides being obtrusive, contributes to damaging abrasion, provides nutrition for insects and mould, and may react with moisture to accelerate chemical degradation. Objects in storage should therefore be kept as dust-free as possible through a combination of good housekeeping, the use of polyethylene or cotton sheeting dust covers over storage shelves, and the use of closed storage containers.

Damage from insects is a major consideration in the storage of beaded objects. Given proper conditions, the larvae of some common museum pests, such as clothes moths and carpet beetles, can destroy woollen or leather support materials and threads very quickly. Inspect these objects for insect damage as well as for other kinds of damage every three months (see CCI Notes 3/1, *Examining for Insect Infestation*). If an infestation is detected, immediate attention is required. For advice, contact the Environment and Deterioration Research Division at CCI.

Handling

Handle all heavily beaded, flexible objects with extreme care, placing adequate support beneath the artifact when moving it. Before moving a beaded object, check for loose beads. Do not assume that all the beads are still secure because the object has been handled safely before. Previous handling, even when correct, might have loosened some beads. Transport the artifact on a rigid support (e.g., acid-free mat board or corrugated plastic board) cut slightly larger than the object. Ensure that beaded fringes are well supported and are not hanging.

Securing Loose Beads

Secure loose thread ends to prevent bead losses. Because every beaded object has its own unique problems, it is difficult to make generalizations regarding methods of securing threads.

In some instances, if a loose thread is long enough, a second thread can be knotted with it to produce a knot

large enough to prevent beads from slipping off (see Figure 2). In other cases, an unsecured thread can be tacked down to the support materials with a small stitch, using fine colourfast cotton thread (see Figure 3). If the thread end is too short or too weak to knot or tack, a second thread can be passed through a few beads beside the original thread and can be tacked at each end or through adjacent secure beads (see Figure 4). When securing loose threads, it is important not to damage the original thread or support material.

The centre of some beads may be too small to allow the passage of a needle and new thread along with the original thread. If a suitable length of original thread is extending from the bead, it can be tacked in place. If there is not enough of the original thread to tack down, remove the end bead(s) to free up enough length to tack down the original thread. Then secure the end bead(s) with new thread, as shown in Figure 4.

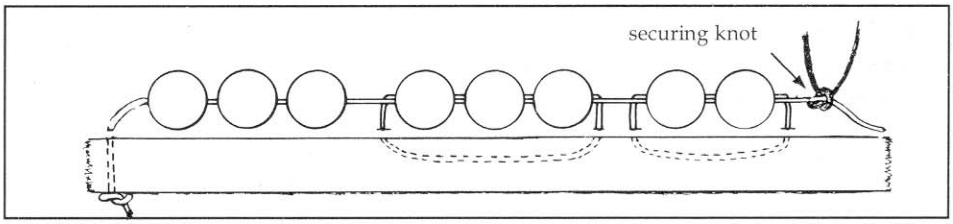

Figure 2. A securing knot made with a second thread.

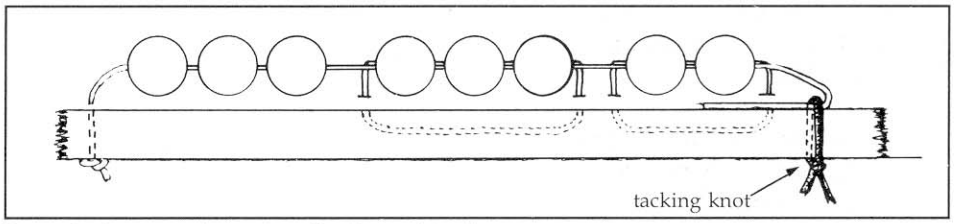

Figure 3. Securing a loose thread with a tacking knot.

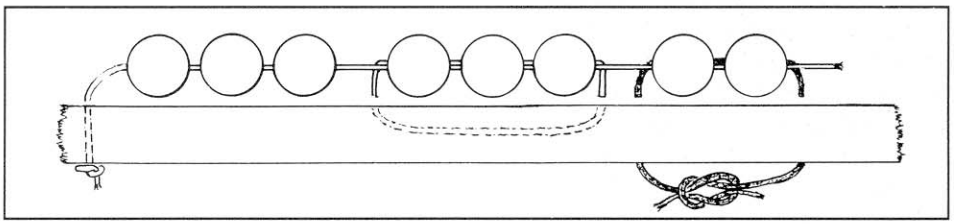

Figure 4. Securing beads by passing a second thread through them.

Cleaning

Cleaning beadwork is a delicate operation and should be avoided or referred to a conservator where possible.

Where this is not practical, it is essential to first examine the beadwork very carefully to identify areas of weak or broken thread and support material, as well as any cracked or unstable glass beads. Unstable glass, usually the result of an imbalance in composition during manufacture, should **not** be cleaned. Unstable glass is often fragile and its deterioration is accelerated by the presence of moisture. Indications of unstable glass are large numbers of broken or cracked beads, a crusty or sticky deposit on the glass or threading material, a fine crazing over the bead's surface, or discolouration or bleaching of the support material where it is in contact with the bead.

If the object is sound and all thread ends are secure, begin cleaning using a small, soft brush. Brush the dust into the nozzle of a vacuum cleaner held several centimetres from the artifact. A piece of fine gauze or screen placed over the nozzle will prevent the accidental suction of loose beads. Clean one small area at a time.

Dirt caught between beads is usually better left alone. The pressure required to remove the dirt can sometimes cause threading material to break.

Ingrained dirt can sometimes be removed from **stable** beads using a cotton swab dampened—not saturated—with a solution of approximately 40% ethyl alcohol or isopropyl alcohol and distilled water. **Use ethyl alcohol or isopropyl alcohol in a well-ventilated room. Keep the solvent away from sources of heat or open flame.**

Test all wet cleaning methods on an inconspicuous spot to determine the colourfastness of beads, backing material, and thread. In rare instances, beads have been coated with a coloured solvent-soluble substance. Ensure that excess solvent does not touch the thread or support material. Never immerse an object in water or in any cleaning solution.

Keep a record of all securing and cleaning methods and the locations at which they were used on the object.

Suppliers

Ethyl alcohol:
liquor stores. Contact the Liquor Control Board in your province to inquire about a license for ethyl alcohol.

Isopropyl alcohol (rubbing alcohol):
sold in drug stores at 70% (dilute in same quantity of water)

Corrugated plastic board (Cor-X, Coroplast):
suppliers of plastics

Acid-free paper and matboard:
suppliers of archival storage and conservation materials; art supply stores

Polyester batting:
department stores; fabric stores; craft stores

Further Reading

Canadian Conservation Institute. *Care of Alum, Vegetable, and Mineral Tanned Leather*. CCI Notes 8/2. Ottawa: Canadian Conservation Institute, 1993.

Canadian Conservation Institute. *Care of Rawhide and Semi-Tanned Leather*. CCI Notes 8/4. Ottawa: Canadian Conservation Institute, 1988.

Lougheed, S. "Deteriorating Glass Beads on Ethnographic Objects: Symptoms and Conservation." *Symposium 86: The Care and Preservation of Ethnological Materials – Proceedings*. R. Barclay et al., eds. Ottawa: Canadian Conservation Institute, [1986], pp. 109-113.

Copies are also available in French.

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