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TIPS FOR FEATHER FILLS

FRAN RITCHIE AND JULIA SYBALSKY

Preserved bird skins are notoriously thin and delicious to pests, making taxidermy bird mounts particularly vulnerable to feather loss. With few established techniques for replacing lost feathers, there is ample room for creative problem-solving by conservators working in this area. Treatments of two pieces of bird taxidermy will be discussed: an historic emperor penguin that suffered a probable pencil stab to the chest, and a bald eagle that lost its iconic white head feathers after a botched restoration. The case studies will illustrate two fill techniques—one involving the use of real, purchased feathers, and the other the fabrication of "conservation feathers." Although there were pros and cons to both techniques, one resulted in a more successful treatment for both birds. The tips provided in making these feather fills are useful for those charged with caring for natural science collections as well as ethnographic and historic collections that include feather clothing, ceremonial blankets, and other bird-related objects.

KEYWORDS: Taxidermy, Feathers, Natural science, Fills, Loss

1. INTRODUCTION

The conservation treatments of two historic bird taxidermy mounts provided the opportunity to test two different fill techniques: the fabrication and application of "conservation feathers" vs. the use of real, purchased feathers.

Conservation feathers were employed for the first treatment of an emperor penguin. Admiral Richard Byrd collected the specimen during an expedition to Antarctica in the early 20th century. The mounted penguin was then given to a member of the Rockefeller family and it is currently displayed at an elementary school. At an unknown date the specimen suffered a probable pencil stab to the chest, resulting in a 0.5 × 0.5 in. hole and feather loss in a prominent location. The damage was distracting and required repair.

The second treatment involved the use of real poultry feathers to create a fill for a mounted bald eagle that lost all of its iconic white head feathers after a botched "restoration." The eagle is on display at Stan Hywet Hall, the historic home of F.A. Sieberling, co-founder of the Goodyear Tire & Rubber Company. The original owners designed the interior at the turn of the 20th century when displaying a bald eagle was a sign of progress and patriotism. The unrepaired the feather loss, however, made the vulture-looking eagle confusing to guests and curators considered removing the original decor from public view.

2. CONSERVATION FEATHERS

The emperor penguin chest feathers are difficult to fill compared to feathers on other areas of the body. The feathers are small, narrow, bristly, and protrude from the body; they do not overlap with one another in the same manner as flight feathers on the wing. Craft feathers commercially available did not have the same characteristics as the chest feathers, leading conservators to replicate them using common conservation materials.

The process for creating conservation feathers is as follows:

1. Shave slivers of bamboo skewer for the shaft of the feather.
2. Line the center of a piece of spun bond polyester or Japanese tissue paper with heat-set BEVA 371 film.

3. Place bamboo sliver in the center of the BEVA 371 lining.
4. Adhere a second piece of spun bond polyester or Japanese tissue to the BEVA 371, thus encasing the sliver.
5. Trim spun bond polyester or Japanese tissue to create the feather vane (fig. 1).

The realistic-looking fabricated feathers could be shaped to mimic different types of feathers such as downy, contour, or flight. The spun bond polyester or Japanese tissue vanes could be toned using any method of coloring application, unlike real feathers that are not easily toned. The materials are easy to work with, but the process of creating the conservation feathers requires a fair amount of time. Conservators began filling the hole by heat-setting the feathers into place or dipping the ends in acrylic adhesive Lascaux 498HV.

However, the conservation feathers did not have the volume required to fill the loss and did not provide a way to blend fills into original feathers. Ultimately, small pieces of trimmed poultry feathers and feather vanes were inserted over the conservation feathers to provide the volume and camouflage required. Other areas of loss of flight feathers on the posterior of the penguin were also filled using trimmed poultry feathers. The feathers were tucked under the top layer of existing feathers, requiring no adhesive. Conservation feathers could be used in other situations, but for the penguin treatment, real feathers ultimately produced the best visual results.

Fig. 1. "Conservation feathers" created by heat setting spun bond polyester of various thicknesses lined with BEVA 371 film onto a sliver of bamboo skewer (Courtesy of the authors)

3. FEATHER PANEL FILLS

The bald eagle lost all its feathers on the neck and only a sparse amount of brittle feathers remained on the top of the head, requiring both large and small feather fills. Instead of adding many layers of feathers, the gap on the neck was filled first with polyester batting fiber fill that was shaped and secured with polyester thread until it was even with remaining body feathers. To fill the large remaining surface area, panels of feather fills were created to fit around the neck as follows:

1. Trim the vane end of poultry or game feathers to desired size to create small feathers. Trim the end of the shaft to thin the tip, if necessary.
2. Stretch nylon tulle into an embroidery hoop.
3. Tuck the end of a feather into the tulle. From the top of the tulle surface, insert the shaft into one hole of the tulle, skip two or three rows, and re-insert into another hole to "thread back" the end of the feather to the top surface. The feather is tucked into place, but will loosen if tulle is removed from the hoop (fig. 2).
4. Repeat step 3 until achieving a row of feathers of desired length. A few holes above the tip of the feather shafts, begin the next row of feathers. Position the next row to lie between the first row of feathers, creating a realistic overlapping pattern. For the bald eagle, feathers gradually decrease in size closer to the beak, requiring larger feathers for the first row and smaller feathers for the overlapping top rows.
5. Once all feathers are in position, carefully remove tulle from embroidery hoop. Trim excess tulle. Sandwich the ends of the feathers with two thin strips of spun bond polyester lined with BEVA 371. Heat-set the tips into place (fig. 3).

The bald eagle required seven panels of feather fills of varying sizes. The panels were attached to the thread-wrapped polyester batting on the neck by applying a layer of acrylic adhesive Lascaux 498HV to the spun bond polyester lining and pressing gently into place. Single feathers were also trimmed and

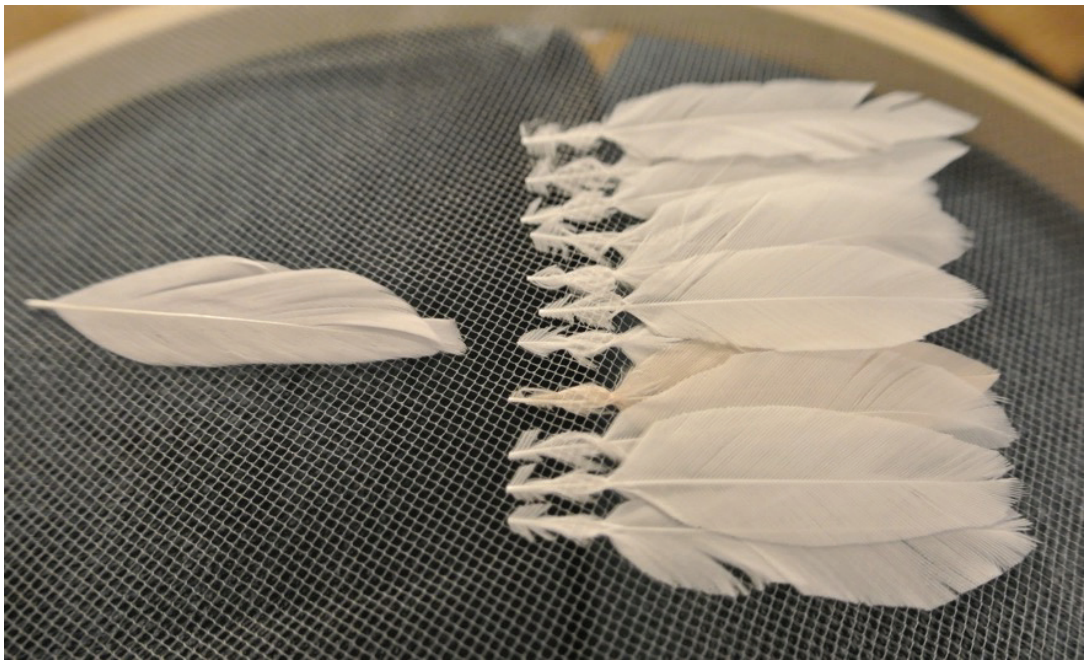

Fig. 2. Trimmed poultry feathers inserted into tulle that is stretched taut in an embroidery hoop (Courtesy of the authors)

Fig. 3. Completed feather fill panels, ready for application onto the taxidermy specimen (Courtesy of the authors)

added around existing feathers remaining on the top of the head. Where possible, these single feathers were tucked into place between feathers, but many were secured with a small amount of Lascaux 498HV on the tips of the shaft. The short time frame for completing the treatment did not facilitate meticulous trimming of feathers to match bald eagle feathers exactly; the fill is not scientifically accurate. However, the addition of the white head feathers drastically improved the overall appearance of the specimen and visitors once again recognize it as the iconic national bird.

4. COMMERCIAL FEATHERS

The real feathers used in conservation treatment were all purchased from reputable commercial craft sources. International, federal, and state laws protect many species of birds from hunting and collecting, including bald eagles under the Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668c). For these birds, it is illegal to possess even a single feather, since it is impossible to prove that the whole specimen was not harmed to obtain it. When completing feather fills, it is best to purchase poultry and game feathers. A variety of colors, shapes, and sizes are available at large craft stores such as Michael's. Be certain you are

aware of laws surrounding the procurement of feathers if you wish to source them elsewhere. Consult the U.S. Fish and Wildlife service webpage (http://www.usfw.gov/) for federal laws and state websites pertaining to sporting licenses and collecting regulations for local laws.

5. CONCLUSION

Both conservation treatments successfully integrated purchased poultry and game feathers into different species of bird taxidermy. A technique of inserting vane fragments helped blend the gaping fill with surrounding feathers on the penguin, and creating panels of feathers efficiently covered the large surface area of loss on the bald eagle. Although the fabricated "conservation feathers" could have ideal applications during future treatments, the real feathers ultimately proved to be the best solution for the mounted penguin and bald eagle.

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SOURCES OF MATERIALS

BEVA 371 film (ethylene vinyl acetate-based adhesive)
Conservator's Products Co. (CPC)
P.O. Box 601
Flanders, NJ 07836
201-927-4855
http://www.conservatorsproducts.com/

Craft poultry feathers by Creatology, Polyester batting (polyester fiber fill) by Loops & Threads
Michael's Craft Store
8000 Bent Branch Dr.
Irving, TX 75063
800-MICHAELS
http://www.michaels.com/

Lascaux 498HV, Spun bond polyester (spun bonded nylon, 0.4 oz./sq. yd.)
Talas
330 Morgan Ave.
Brooklyn, NY 11211
212-219-0770
http://www.talasonline.com/

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