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2008

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Elizabeth Nunan

Buffalo State College, e_nunan@yahoo.com

Aimée Ducey

New York University, aimeeducey@gmail.com

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Nunan, Elizabeth and Ducey, Aimée, "The Conservation of Three Hawaiian Feather Cloaks" (2008). *Textile Society of America Symposium Proceedings*. 273.

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The Conservation of Three Hawaiian Feather Cloaks

Elizabeth Nunan
e_nunan@yahoo.com

Aimée Ducey
aimeeducey@gmail.com

Purpose of Treatment

Sacred garments worn by the male members of the Hawaiian *ali'i*, or chiefs, these feather cloaks and capes serve today as one of the most iconic symbols of Hawaiian culture. During the summer of 2007 the Bishop Museum in Honolulu, Hawai'i, under the supervision of its conservator, Valerie Free, commenced a project to stabilize the cloaks so that they could be safely exhibited in the museum. This project was funded by a grant from the Institute of Museum and Library Services.



Figure 1. Chapman Cloak. The Bishop Museum, Honolulu, Hawai'i.



Figure 2. Joy Cloak. The Bishop Museum, Honolulu, Hawai'i.



Figure 3. Joy Cape. The Bishop Museum, Honolulu, Hawai'i.

Over the course of the summer three of the twelve cloaks in the museum's collection were treated: the "Chapman" cloak (Fig.1), the "Joy" cloak (Fig. 2) and the smaller second "Joy" cape (Fig. 3). The Bishop Museum completed a conservation survey documenting the condition of the cloaks before treatment. Because exhibition requires frequent handling and manipulation of these large and fragile textiles, the main purpose of the treatment was to stabilize the existing damages in the cloaks, primarily in the form of tears and losses. In addition to stabilizing preexisting damage to the cloaks, the museum designed a new mounting system that would fully support them as well as provide a culturally appropriate display. The museum planned to stabilize the entire collection in order to alternate the exhibition of the cloaks, therefore shortening the display period of any individual cloak.

The cloaks are made of netted olona cordage, a bast fiber shrub endemic to the Hawaiian Islands that forms a flexible support to which feather bundles are attached. The netting is often made of multiple sections stitched together to form the whole. The fragility of this netting and the feathers determined the scope of the treatment.

The gauge of the netting varies from cloak to cloak, as well as from patch to patch. Differences in netting gauge can also be seen in feather color and design areas: larger feathers conceal more netting, allowing a larger gauge (and therefore less cordage) to be used. The Chapman cloak is thought to be the oldest in the collection, dating to the mid-18th century, and it is also the most deteriorated. Believed to have been taken to Calcutta, India, in 1826, it was purchased for the Bishop Museum collection in 1937. Its voyages undoubtedly played a part in the poor condition



Figure 4. Chapman Cloak, olona netting. The Bishop Museum, Honolulu, Hawai'i.

of its feather surface, which is bare in places and very soiled. However the fiber netting, which is the most finely gauged of any of the cloaks at the museum, is in very good condition (Fig. 4)

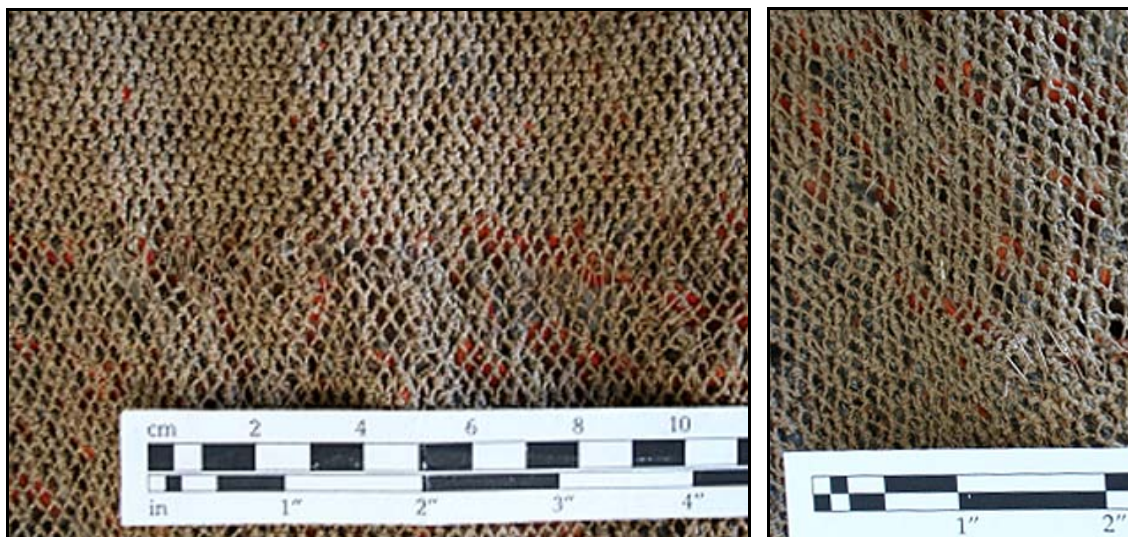


Figure 5. (Left) Joy Cloak, olona netting. The Bishop Museum, Honolulu, Hawai'i.

Figure 6. (Right) Joy Cape. The Bishop Museum, Honolulu, Hawai'i.

The Joy Cloaks, on the other hand, have much better preserved feather surfaces but the wider gauge netting is comparatively weak and brittle (Figs. 5 and 6). The larger Joy Cloak in particular has an extensive history of exhibition. The resulting exposure to light, heat, and humidity changes has contributed to the degradation of the fibers. This cloak had been given as a gift to Captain Joy who belonged to a Boston family of merchants. It is said to have been used often as a knee rug for sleigh rides. It was then given to the Boston Museum of Fine Arts and eventually it made its way back to Hawai'i where it has been on and off exhibit for the past 20 years.

Materials and Technology

The neckline and leading edges of these garments were often bound with a braid of olona, while the lower hem was left free with the ragged edge concealed by the lowest row of feathers. The feathers are carefully sorted and bundled together and are tied to the mesh using a separate olona cord. When bundling the yellow feathers, sometimes a shorter red feather was placed over the yellow quills, forming a skirt that concealed the grey quill color while adding warmth to the yellow above. The bundles were tied to the netting beginning at the bottom of the cloak and working upward. One cloak, the size of the first Joy cloak, is estimated to use as many as 80,000 individual feathers, plucked from three types of Hawaiian birds, two of which are now extinct.

Olona is the name of both the cordage and the shrub from which the fibers are obtained. Part of the nettle family, olona is one of the strongest natural fibers in the world, second only to ramie. The plant is endemic to Hawai'i, and several species of it exist on the islands. The fiber is obtained by stripping the bark from the plant by hand. The outer bark was scraped away using a flat turtle bone or oyster shell that has been shaped to obtain a curved beveled edge; the scraping edge had to fit the curve of the scraping board in order to prevent shredding of the fibers. The olona strips were dampened and laid upon the scraping board with the end pointing away from

the sitter. This end was elevated and the surface was moistened to keep the bark from sticking. The olona was scraped repeatedly to remove residual outer bark as well as the softer inner tissue, and the exposed fibers were dried in the sun. The dry fibers were formed into cords by laying them upon the thigh and twisting the strands with the palm using an outward motion.

The most commonly used feathers in the ahu'ula are from the o'o, the mamu, and the i'iwi birds. The brilliant yellow tufts of the Hawaiian o'o were plucked from beneath the wings and rump of the bird. The color is described as lemony-yellow, and the barbs of the feather are long and wispy. The o'o was over a foot in length including its long tail, and though some accounts tell of the feathers being plucked and then the bird being set free, others mention that it was eaten as a delicacy.¹ The o'o was virtually extinct in Hawai'i by the 1920's. The Hawaiian mamu was already extremely rare by 1888, with the last sighting in 1898.² As compared to the o'o, the mamu feather is warmer and described as crocus-yellow. The feather shape is shorter and more elliptical than the o'o. The i'iwi is a honeycreeper that is still found in the forests of Hawai'i, with the females being of a deeper red color than the males. The downy feathers of the head and chest were used in the cloaks, allowing more feathers to be collected per bird as compared to the yellow o'o and mamu.

Conservation Treatment

The deterioration of the strength of the netting and color of the feathers cannot be reversed. These processes of degradation may only be slowed though preventive conservation methods employed in the storage and display environment. Therefore, the purpose of this treatment was to document and stabilize the existing tears and losses and help protect the cloaks from future damage. All three cloaks had rips and tears throughout the olona cordage, the majority of which had been previously repaired by sewing them together with thread. Various colors and types of thread were used on the cloaks, indicating more than one campaign of past treatment.

Where these repairs resulted in the distortion of the adjacent rows of feather bundles, they were removed. The tear was then realigned and stitched again. However, the process of cutting out the old stitches and sewing them again did risk breaking more cordage and therefore some old repairs were not removed. This was especially important for the Joy cloak and cape where the netting is quite fragile. Different stitching methods were employed depending on the strength of the area surrounding the damage. Couching, darning and tacking stitches were most frequently used. Due to the extensive network of tears in the netting, patches of light brown nylon mesh were attached to provide extra support to the most damaged sections.

¹ Wilson, Scott and Sheila Buff, Frohawk's Birds of Hawai'i, The Wellfleet Press, New Jersey, 1989, p. 69.

² Wilson, Scott and Sheila Buff, p. 124.



Figure 7. *Chapman Cloak – sample of loss stabilization. The Bishop Museum, Honolulu, Hawai'i*

The Chapman cloak has three large losses. No documentation of the cause of these losses exists, raising questions about how to conserve them for exhibition. They could originate from the use of the cloak as a battle garment, or they could have occurred at any point during its later life. The losses were not filled because it would not accurately represent the cloak's history, even though the damage cannot be interpreted to a specific moment in time. The losses had distortions around the edges that needed to be flattened before the tears could be repaired. The distortions were flattened with local humidification and pressure, and then repaired and stabilized in the same fashion as the other tears.³ In addition, a double layer of the nylon mesh was sewn in place to prevent further stress at the edges of the loss. The brown mesh that was used to stabilize the area also seemed like a good compromise. It mutes the appearance of the black background of the mount, but does not hide the loss (Fig. 7).



Figure 8. *Joy Cape support. The Bishop Museum, Honolulu, Hawai'i.*

³ The distortions were flattened by placing a piece of Remy (100% non-woven polyester) over each loss followed by a 100% cotton rag blotter dampened with water. This was then weighted with a small piece of glass held in place by a small weight. After 10 minutes, the damp blotter was replaced with a dry blotter and the pressure was replaced, soaking up excess moisture and allowing the area to dry flat.

The Joy cape required a special support in order to work on the netting side without crushing the large, protruding feathers opposite. When the cloak was placed feather-side-down on the frame, the narrow wooden bars slid between the large feathers and provided a support to the netting overall without crushing the feathers (Fig. 8).

The Joy cloak also had a large loss in the area of the lower hemline. A previous patch repair was removed, revealing a second, smaller loss. Numerous tears surrounding these losses were repaired, but the area was still extremely weak so a nylon mesh overlay was added for strength. In addition, the entire bottom edge of the cloak was riddled with many single, broken cords. Therefore, a 6-inch wide band of mesh was sewn onto the entire length of the bottom edge. It was wrapped around the bottom edge of the cloak and secured under the last row of feather bundles to protect dangling pieces of netting.

After the individual mechanical damages were stabilized, the overall strength of the netting was considered for each cloak. Despite the relative strength of the Chapman cloak's fibers, the large number of tears was seen as an overall weakness. It was decided to further protect the netting by attaching a liner of nylon mesh from the neckline and extending it two-thirds down the netting side of the cloak—the area with the greatest concentration of tears. This liner was sewn on with horizontal running stitches.

The large Joy cloak also had area of overall weakness and similarly patches of nylon mesh. A large area just left of the center of the cloak had extensive tears concealed by unsightly white tulle patches. These patches were removed and the tears mended, but the area was still very fragile, so a large overlay was attached to provide strength to the entire area.

Exhibition Mounts

The final stage of the project addressed exhibition of the cloaks. The best way to display these cloaks has been a challenge for many years. In the past they were hung vertically on the wall, which was very stressful where the textile was attached to the wall. Also, the flat format, while easy to take in visually, does not accurately represent the effect of the design of the cloaks. The patterns are meant to be seen in three dimensions as they would be when worn by a member of the ali`i.

In the spring of 2007, Bob Barclay, a visiting conservator from the Canadian Conservation Institute, developed a new design for displaying the cloaks in the round, intended to improve upon the first three-dimensional mount that had been designed.⁴ These first mounts, which imitated the human form, had placed undue stress on the cloaks around the shoulder areas.

The mounts designed by Bob Barclay are constructed of narrow wooden arms hinged to a circular wooden slab that supports the neck of the cloak. Velcro tabs are stapled to the arms and neck of the mount. A thick, black, polyester felt liner is used to attach the cloak to the mount. The liner in turn is attached to the cloak with Velcro tabs that have been sewn to the netting side of the cloak in vertical rows on nylon ribbon.

⁴ For detailed images and notes on the construction of the mounts, Bob Barclay should be contacted through the Canadian Conservation Institute.



Figure 9. Chapman Cloak on mount. The Bishop Museum, Honolulu, Hawai'i

This mount displays the cloak in the round, with gently undulating folds in the fabric, and at the same time distributes the weight of the cloak over many points of contact with the structure, relieving stress on the object itself (Fig. 9). The liner distributes the weight of the cloak while reducing stress on the netting during mounting because the Velcro on the mount attaches to the liner, and not the cloak. The felt liner also helps when moving the heavy and awkward textile and can be kept with the cloak in storage. Thus, these mounts are a compromise between representation and conservation. The actual construction requires many adjustments for each cloak as each one varies greatly in its length, width, curvature of the neckline, and bottom edge. This mount is a workable solution for the longer capes, but the smaller Joy cloak will be displayed flat with a padded support.

The conservation of these cloaks has provided the Bishop museum with a proven methodology for treatment of the remaining cloaks in the museum. The new mounts ensure that these cloaks can be safely exhibited, allowing the public to enjoy these treasures of Hawaii's royal history.