

Owner: Princeton University Art Museum (PUAM)
Object Number: 2003-147
Artist/Maker: Sanford Biggers
Title: *Tunic*
Date: 2003
Medium: Bubble down jacket, feathers, mesh, and fishing line
Dimensions: h. 91.4 x w. 91.4 x d. 47 cm (36 x 36 x 18 1/2 in.)



Provenance: Sold directly from the artist to PUAM in 2003.

Examiner: Daisy Diamond (Objects Conservation Summer Intern, PUAM; Graduate Fellow, Winterthur/University of Delaware Program in Art Conservation (WUDPAC), Class of 2026)

Consulted: Elena Torok (Associate Objects Conservator, PUAM)
Perrin Lathrop (Assistant Curator of African Art, PUAM)
Todd Baldwin (Manager of Exhibition Preparation & Art Handling, PUAM)
Eric Schultz (Preparator, PUAM)
Joelle Wickens (Associate Director and Assistant Professor, WUDPAC)
Beth Brideau (Mountmaker, Object Mounts)
Kris Cnossen (Textile and Costume Conservator and Owner, Midwest Textile Conservation, LLC)
Matthew Halley (Assistant Curator of Birds, Delaware Museum of Nature and Science)
Ellen Pearlstein (Professor Emeritus of Conservation and Information Studies, UCLA)
Carla Dove (Program Manager, Feather Identification Lab, National Museum of Natural History)

Proposal Date: June 21st, 2024

Description

This object is a metallic silver down jacket entirely covered on the exterior with horizontal rows of downwards-facing feathers. Near the neckline, the feathers are arranged to point mostly forward (on the front) or backward (on the back). Longer feathers were trimmed perpendicularly along the lower edge of the body and sleeves. The calami of the feathers are sewn in place with fishing line between the exterior of the jacket and strips of white mesh fabric (fig. 1).¹ The feathers are mostly pennaceous with a plumulaceous region near the calamus, characteristic of flight

¹ Documented with an iPhone 15, ISO 80, f1.6, 1/60s, July 2024.

feathers (fig. 2, table 1).² The exterior jacket fabric is a white woven fabric with a silver metallic synthetic coating. The most common synthetic coated textiles contain plasticized polyvinyl chloride (p-PVC) or thermoplastic polyurethane (TPU), which is potentially the composition of this jacket coating (Kris Cnossen, email correspondence, July 2024). During the last 20 years at the art museum, the neckline was left partially unzipped, by approximately 12 cm. The interior of the jacket has a black lining and a black and white machine-made label for “SPIEWAK” on the neckline. Spiewak is a New York-based apparel manufacturer that specializes in high-visibility safety apparel and other uniforms for private businesses and government agencies (Spiewak 2024).



Figure 1. White mesh for holding feathers in place with friction. Held taut by sewing and fishing line.

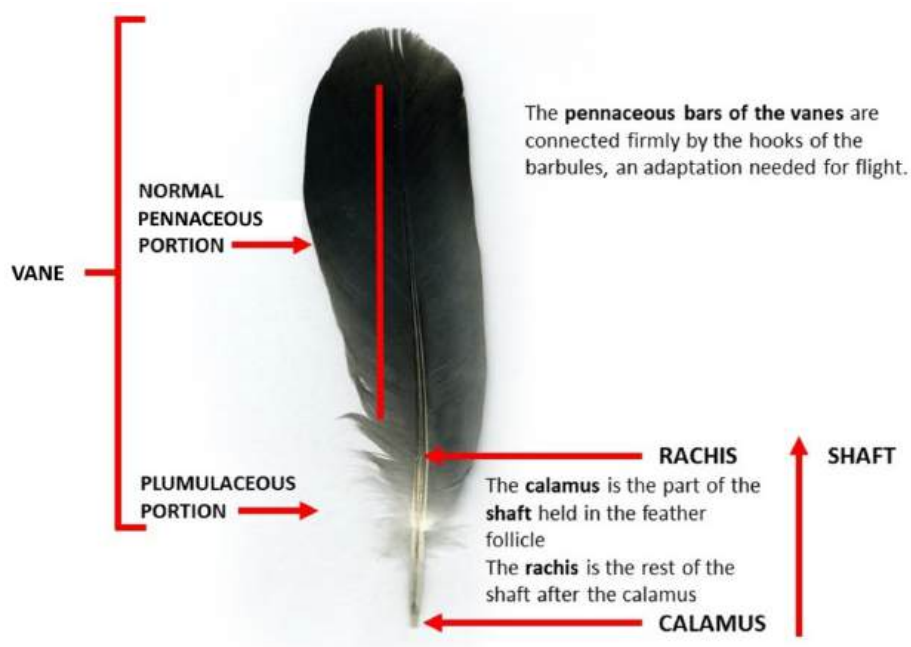
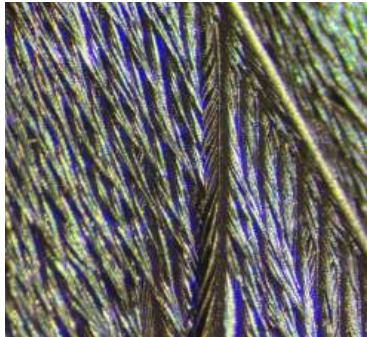
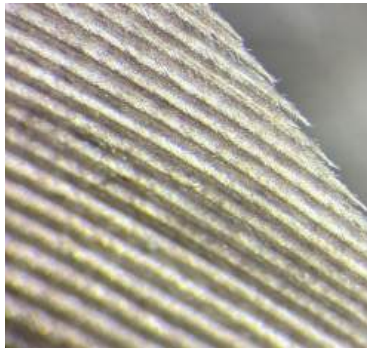


Figure 2. Feather anatomy. Image courtesy Dr. Jacquie Jacob, University of Kentucky, Poultry Extension.

² Images in Table 1 documented with an iPhone 15, ISO 100-321, f1.6, 1/60s, June 2024. Micrographs documented with an iPhone 15, ISO 250-400, f1.6, 1/60-1/40s, July 2024 through the eyepiece of a Leica M80 Stereomicroscope.

Table 1. Feather characteristics

Category	Feather locations	Feather Image	Micrograph	Color	Length
A				White, pale cream, bright caramel brown, and dark brown (biopigmented). Some feathers contain dark patches of barbs near the rachis (pictured at left). Luminesce brightly under UV.	~10 - 15 cm
B				Black, blue, and green (structural colors). White-gray plumulaceous region near calami. <i>NOTE: Some feathers contain regions of biopigmented color similar to below.</i>	~12-20 cm
C				White and dark brown/gray barred pattern (biopigmented). White-gray plumulaceous region near calami. <i>NOTE: Some feathers contain regions of structural color similar to above.</i>	~14-25 cm

Under long-wave ultraviolet (UV) examination, there is variable luminescence (figs. 3-4).³ Feathers in category A (see table 1) luminesce brightly. Melanin is not typically luminescent, but keratin exposed to UV radiation can result in feather luminescence (Ellen Pearstein, email correspondence, July 2024). However, the feathers appear to be in good condition, so this luminescence has a different underlying cause. It is possible these feathers were treated with a finishing agent or pesticide that luminesces. Additionally, the presence of optical brighteners in the mesh component for attaching feathers is apparent in the bright white fluorescence, visible on the front near the zipper. The fabric attached to the zipper luminesces bright orange, likely related to the dye composition.



Figure 3. Long-wave UV examination, front.



Figure 4. Long-wave UV examination, back.

Historical Context

Sanford Biggers (born 1970, Los Angeles, CA; active New York, NY) is a contemporary interdisciplinary artist who works with sculpture, video, installation art, and performance. Biggers describes his process as “conceptual patchworking” to transpose and juxtapose symbols and references that challenge historical amnesia (Biggers 2024). His materials often include found objects and repurposed artifacts to explore marginalized historical perspectives, quotation/recontextualization, social justice, Afrofuturism, hip hop, spirituality, pop art, and his own personal experiences (Wally 2023) (figs. 5-7). He earned his BFA from the School of the Art Institute of Chicago and an MFA from the California Institute of the Arts. Biggers has exhibited widely including major shows at the Museum of Contemporary Art Chicago, the Studio Museum in Harlem, and the Los Angeles County Museum of Art.

³ Images documented with an iPhone 15, ISO 640, f1.6, 1/40-1/33s, July 2024.



Figure 5. Biggers in front of his collaged quilt works. Image courtesy Lexie Moreland (Tauer 2020).



Figure 6. *Blossom* (2007). Sanford Biggers, New York. Steel, Zoopoxy, silk leaves, piano with MIDI system, piano bench, dirt. Image courtesy Marianne Boesky Gallery.

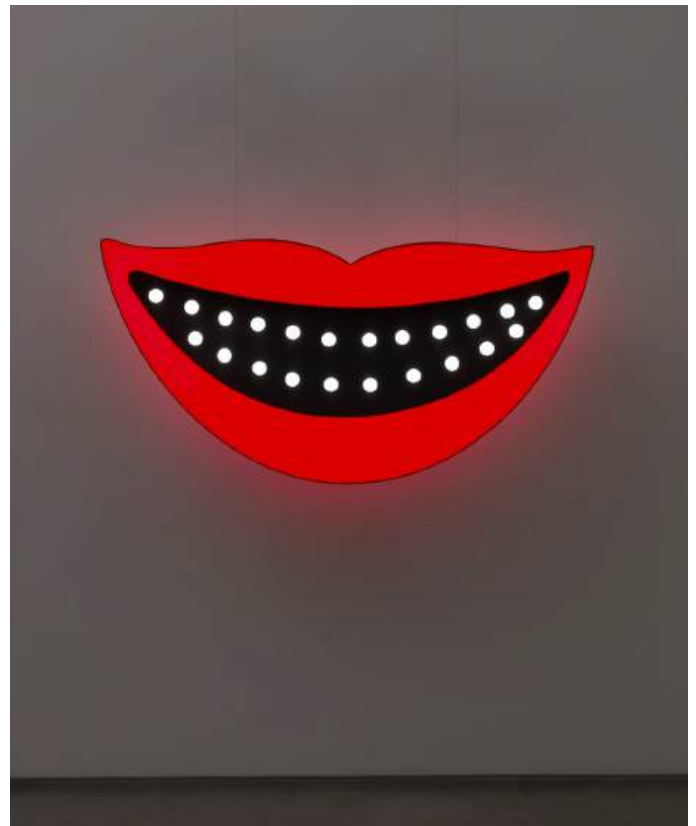


Figure 7. *Cheshire (Janus)* (2023). Sanford Biggers, New York. Aluminum, plexiglass, LEDs, timer. Image courtesy Lance Brewer, Marianne Boesky Gallery.

Biggers's *Tunic* was created as part of the 2003 PUAM exhibition "Shuffling the Deck" guest curated by Eugenie Tsai, which featured contemporary artwork that reinterpreted pieces in the Museum's collections in new and unexpected ways. Biggers was inspired by the 20th century Bamileke plumed tunic in the former PUAM African gallery (figs. 8-9). This Bamileke feathered tunic would have normally been viewed in motion and accompanied by musicians in a men's performance initiation connected to the spiritual and political leader known as the *fon*, although this specific tunic was likely not actively used in ritual (PUAM 1998-728). With this garment, Biggers initiated a historical, geographic, and cultural collision exploring the connections of display, affiliation, performance, urban/rural, and contemporary performance alongside traditional Bamileke dance (Steward 2013). He has gone on to create additional works of similar composition (figs. 10-11) that have been used in performances by Saul Williams (fig. 12) as well as the group formed by Sanford Biggers, "Moonmedicin" (fig. 13).



Figure 8. Plumed tunic (post-1950). Bamileke artist, Cameroon. Synthetic fiber and feathers (African harrier-hawk, great blue turaco, and domestic chicken). Image courtesy PUAM (1998-728).

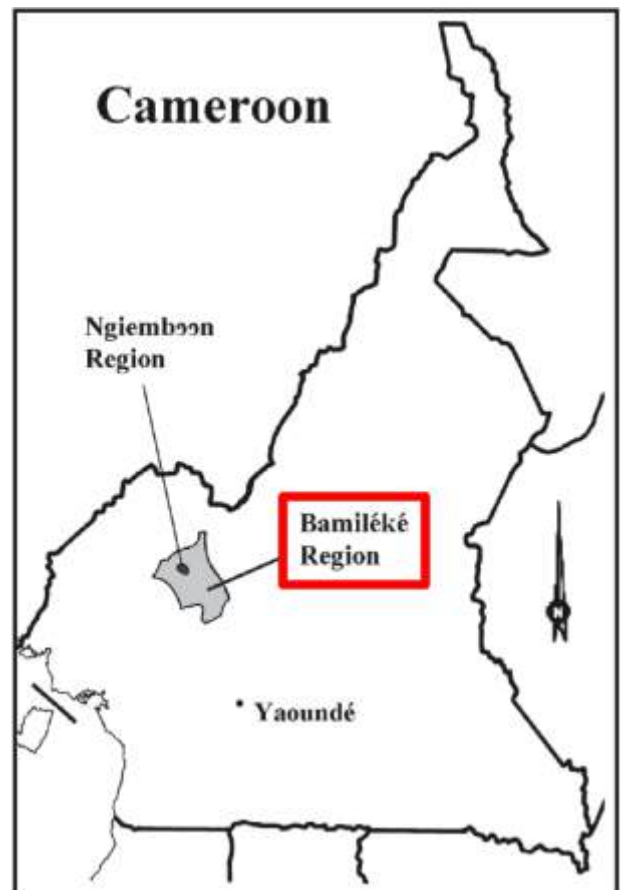


Figure 9. Map of Bamileke region in Cameroon. Image courtesy Schrag 2021.



Figure 10. *Ghetto Bird Tunic* (2006). Sanford Biggers. Bubble Jacket and bird feathers. Image courtesy Biggers 2024.



Figure 11. *Baby Ghetto Bird Tunic* (2006). Sanford Biggers. Bubble Jacket and bird feathers. Image courtesy Biggers 2016 (Gouveia 2016).



Figure 12. Performance still from Saul Williams (aka Niggy Tardust) performing *The Ritual*. Image still courtesy Moonmedicin 2019.



Figure 13. Performance still from *Moonrising*. Image still courtesy Biggers 2013.

Condition

The *Tunic* is generally structurally intact, but there are some condition issues that compromise aesthetic and structural integrity. There is active delamination of the metallic jacket coating, lack of structural support in the shoulders with the current mounting system, surface dust, grime/residue, and misshapen feathers (fig. 14).



Figure 14. Condition diagram, front and back.

Specific condition issues are documented in Figures 15-22.⁴ The coating delamination is most active along the neckline, edges of the sleeves, and edge of the waistline (figs. 15-16). The delamination was noted as early as 2004 in a condition report for loan (Virginia Pifko; PUAM Condition Report for loan to Contemporary Arts Center, OH). Since 2017, the area of delamination has not increased significantly in the collar of the jacket, but the delaminated areas do appear to be curling slightly more (fig. 17). Synthetic-coated textiles typically have a relatively short life-span, so this change in condition is consistent with the natural aging of the object (Kris Cnossen, email correspondence, July 2024).

There are partial losses to barbs, potentially due to insect damage prior to the assembly of the object (fig. 18). Misshapen feathers detract from the aesthetic legibility of the tunic and the mechanical stress has disrupted structural color iridescence. Approximately 10 feathers have significant white, brown, or gray surface accretions of unknown origin (fig. 19). Overall surface dust covers the entire garment, particularly the shoulders (fig. 20). In 2010, two feathers were found near the base and are stored alongside the object (fig. 21). It is unknown whether all or some of the feathers were previously treated with a finishing agent or pesticides, although this is less likely. A dangling, fraying cord for cinching the waistline is located at the lower PL (fig. 22). This frayed cord was noted as early as 2004 in a condition report for loan (Virginia Pifko; PUAM Condition Report for loan to Contemporary Arts Center, OH). This may be evidence of use, rather than new damage.

⁴ Images 15-16 and 18-22 documented with an iPhone 15, ISO 160-500, f1.6, 1/60-1/40s, July 2024.



Figure 15. Metallic coating delamination, back neckline.



Figure 16. Delamination of the metallic coating, front collar.



Figure 17. Metallic coating delamination in 2017, image courtesy PUAM registrar records.



Figure 18. Loss of barbs, back lower center (L) and front lower center (R).



Figure 19. Surface accretions on feather, back PR armpit (L) and PL armpit (R).

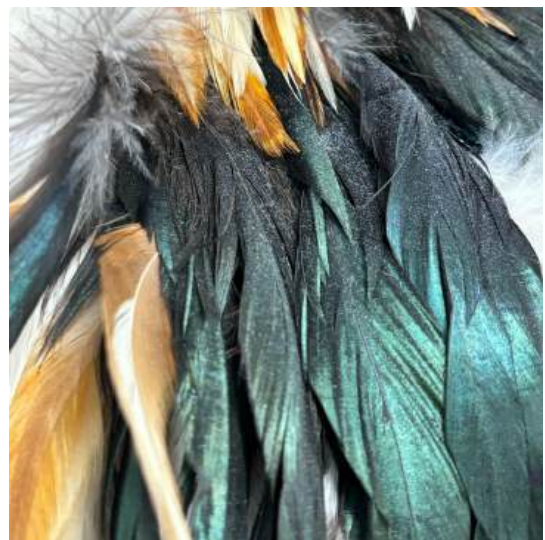


Figure 20. Overall surface dust, back PR shoulder.



Figure 21. Two detached feathers.



Figure 22. Fraying cord, lower PL.

The structurally insufficient mount does not evenly distribute the weight of the sleeves and torso, causing the shoulders to slump. Internal supports consist of medium density fiberboard (MDF) held upright with a welded steel base, crumpled loose tissue paper, Volara foam, and a hanger (fig. 23). The welded steel base is believed to be the only artist-provided component of the mount. There is a gray fabric with a grid-like woven pattern that covers the neck of the mount and is visible on display. The texture and color of this fabric are incongruous with the object, and thus detract from the focus.



Figure 23. Original mount with gray fabric (at bottom) and tissue paper (bottom right).

Uncertainties regarding artistic intent relate to the following undocumented considerations for display and preservation: extent of zipping, intentionality of the fraying cord, and acquisition details. For the preservation of artistic context, it is important to clarify Biggers's research and making process. It is currently undocumented whether he visited the collections in person, or remotely viewed photos of the object. There is a story that Sanford Biggers wore the coat from his studio in New York City to the Princeton University Art Museum, but no formal documentation of this exists.

Purpose of Treatment

The purpose of this treatment is to stabilize delaminating components of the *Tunic*, provide appropriate structural support, and surface clean in preparation for the reopening of the PUAM galleries in the new museum building.

Treatment Proposal

1. Complete before treatment photo documentation (est. 0.5 hours).
2. Curatorial, conservator, and ornithologist consultation to clarify acquisition details, extent of zipping, dangling cord placement, and feather identification (est. 4 hours).
3. Initial dry surface clean front and back to remove loose soiling with a low-speed HEPA filtered vacuum, dry cleaning tools, and personal protective equipment (est. 2 hour).
4. Reduce soiling accretions on feathers with dry and aqueous cleaning (est. 1 hour).
5. Reshape feathers with gentle, localized re-humidification with a preservation pencil as needed (est. 3 hours).
6. If determined necessary and possible, re-integrate two detached feathers (est. 0.25 hours).
7. Consolidate the lifting plastic on the jacket (est. 5 hours).
8. Evaluate the mounting system and remount (est 12 hours).
9. Complete after treatment photo documentation (est. 1 hour).

Estimated treatment time: 28.75 hours

Treatment Report

1. Completed before treatment photo documentation (0.5 hours)
2. Initial dry surface cleaned front and back to remove loose soiling with a low-speed HEPA filtered vacuum, hake brush, cosmetic sponge, and personal protective equipment (2 hours).
3. Perrin Lathrop, Assistant Curator of African Art at PUAM, was consulted to discuss research questions and treatment protocol. Email consultation with three scholars was conducted to identify the feather species for material records and Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) compliance (6 hours).
4. Reduced soiling accretions on approximately 25 feathers with a cosmetic sponge and deionized water (0.5 hours).
5. Reshaped approximately 25 feathers with gentle, localized re-humidification distributed with a PEL Preservation Pencil and Ultrasonic Humidifier (2 hours).
6. Following testing (tables 2-3), the lifting plastic coating was consolidated with a combination of heat activated BEVA 371 film and direct application of 1:1 Lascaux 360 HV:Lascaux 498 HV with a brush. Heat activation was performed with a tacking iron (8 hours).
7. Re-mounted the object with steel supports, ethafoam, volara and stockinette (15 hours).⁵
8. Completed after treatment photo documentation (1 hour).

Total treatment time: 39 hours

Report Date: July 26th, 2024

Future Storage and Display

Feather biopigments and plastic are highly light sensitive. The object should remain on display for up to one year with low light levels (<10 footcandles) and no UV exposure to minimize light-induced degradation. Consideration of object “rest time” between exhibitions would additionally support the long-term preservation of this object. If displayed with no covering, the *Tunic* should be dusted once a month, or as time allows. Limit handling of the object to protect feathers and delaminating plastics. If movement on and off of the mount is required, slide one arm off of the mount at a time.

⁵ Mountmaking design and fabrication completed in collaboration with Todd Baldwin, Manager of Exhibition Preparation & Art Handling at PUAM; Eric Schultz, Preparator at PUAM; Beth Brideau, Mountmaker at Object Mounts; and Elena Torok, Associate Objects Conservator at PUAM. Daisy Diamond supported the mount design process by incorporating conservation needs into the support structure. Additionally, Daisy carved the ethafoam support. Eric Schultz constructed all other components of the mount.

Treatment Results and Justification

This treatment was successful and followed the proposed procedure. Curatorial consultation with Perrin Lathrop clarified that it was not necessary to reattach feathers, as the specific original locations were unknown and there are research benefits to having entire feathers accessible. Consolidation methods were tested and the most successful methods were used to consolidate the delamination of the metallic plastic coating (tables 2-3).⁶ For larger areas of plastic delamination, heat-activated BEVA 371 film was the most efficient approach to re-adhere the coating with minimal surface undulations (figs. 24-25). For smaller areas of plastic delamination and flaking where it was not possible to safely lift the material and insert BEVA 371 film, a direct application of 1:1 Lascaux 360 HV:Lascaux 498 HV was minimally applied (figs 26-27). This was completed in stages to minimize any movement during drying. If metallic fills are required at a later date to compensate for delamination loss, then Hollytex, Reemay, or Japanese tissues toned with Golden Acrylics could be used (Kris Cnossen, email correspondence, July 2024).



Figure 24. Plastic delamination along the front of the collar, before treatment.



Figure 25. Plastic delamination along the front of the collar, during treatment (BEVA 371 film for the larger area and 1:1 Lascaux 360 HV:Lascaux 498 HV for smaller areas).



Figure 26. Plastic delamination at the nape of the collar, before treatment.



Figure 27. Plastic delamination at the nape of the collar, during treatment (1:1 Lascaux 360 HV:Lascaux 498 HV).

⁶ The consolidation approach was established in consultation with Joelle Wickens, Associate Director and Assistant Professor at WUDPAC; Kris Cnossen, Textile and Costume Conservator & Owner of Midwest Textile Conservation, LLC; and Elena Torok.

Table 2. Activation method testing for consolidation.

Activation Method	Notes	<i>Tunic</i> sensitivity
Film activated with heat (tacking iron)	Lascaux 360 HV heat activated at 50°C/122°F Lascaux 498 HV heat activated at 75°C/167°F BEVA 371 heat activated at 65°C/150°F	At 75°C applied for 15 seconds, there is no change in surface quality after one week of monitoring. Mechanical action immediately after heat increases risk of abrasion. Long term-damage of heat activation is unknown.
Direct application (Lascaux)	1:1 Lascaux 360 HV:Lascaux 498 HV applied directly with a brush	Slower dry-time compared to heat or solvent activation. No evidence of staining or lifting after 1 week. Difficult to weight while drying due to downy, irregularly shaped surfaces.

Table 3. Adhesive testing for consolidation.

Adhesive	Method	Benefits	Limitations
1:1 Lascaux 360 HV:Lascaux 498 HV	Heat activated, cast film	Stronger and thinner than BEVA 371 film.	Requires higher temperature than BEVA 371 (by ~10°C), highly stretchy.
BEVA 371	Heat activated, pre-prepared film	Fast, efficient for large areas.	Difficult to apply in small areas of delamination.
1:1 Lascaux 360 HV:Lascaux 498 HV	Brush applied wet	Flexible, very slight tack, useful for areas where delamination is too small for films.	Requires periodic drying to minimize movement of delaminating surfaces while the adhesive sets.

To perform consolidation and evaluate the structural integrity of the support, the *Tunic* was removed from the prior mount. Two feathers became detached from the back of the neckline during this stage of the treatment. They were not reattached because their exact location was unknown and there was no notable visual change in the object. They are stored in a plastic bag with the object. The mount was re-designed and fabricated to distribute the weight of the sleeves and the bust more evenly and position the garment in an active, but still sculptural stance (fig. 28). The adjustable height of the mount will promote minimal handling by allowing for both storage and display settings.



Figure 28. Redesigned mount. Image courtesy Elena Torok.

One of the goals of this treatment was to identify the feather species used by Biggers to ensure compliance with CITIES regulation on the transport of artifacts made from endangered species for future loans or traveling exhibits. Matthew Halley, Assistant Curator of Birds at the Delaware Museum of Nature and Science, indicated they resemble feathers of the family *Phasianidae* family, potentially the pheasant genera (email correspondence, July 2024). Ellen Pearlstein, Professor Emeritus of Conservation and Information Studies at UCLA, agreed they resembled feathers of the *Phasianidae* family, and indicated they appear to include hackle feathers (fig. 29). Hackle feathers are the neck and back feathers of roosters. They can come from many bird types of the order *Galliformes* including pheasants, chickens, or turkeys (email correspondence, July 2024). Carla Dove, Program Manager of the Feather Identification Lab at the Smithsonian National Museum of Natural History, was also consulted. She indicated that all feathers on the *Tunic* are consistent in coloration and pattern with those of a domestic chicken (*Gallus gallus*) (email correspondence, July 2024). Therefore, the feathers used in this object are legally available and not restricted by CITIES.

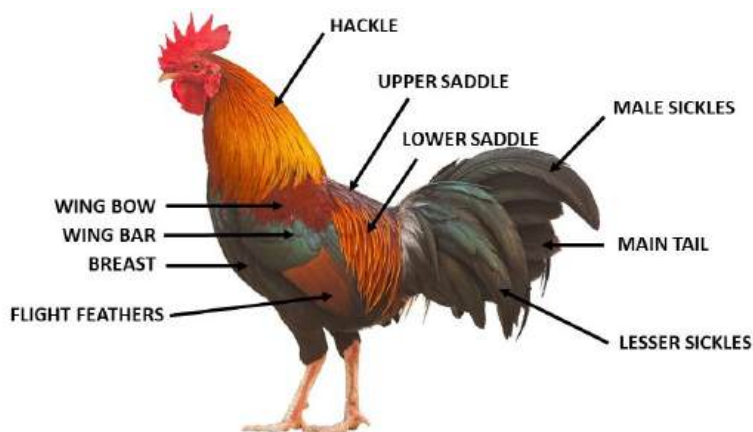


Figure 29. Feather names and locations. Image courtesy University of Illinois, Poultry Extension.

Before Treatment Photo Documentation

Images documented with an iPhone 15, ISO 80-100, f1.6, 1/60s, July 2024 (figs. 30-31).



Figure 30. Overall front.



Figure 31. Overall back.

After Treatment Photo Documentation

Image documented by Elena Torok, August 2024 (figs. 32).



Figure 32. Overall front.

Bibliography

"About Spiewak." Spiewak, www.spiewak.com/about. Accessed 25 July 2024.

Biggers, Sanford. *Moonrising*. Moonmedicin, 2013. <https://vimeo.com/79336985> .

"Bio" and "Work." Sanford Biggers, July 30, 2024. <https://sanfordbiggers.com/bio>.

Gouveia, Georgette. "The Remains of Designing Days: The Katonah Museum of Art's 'Nest.'" WAG MAGAZINE, March 18, 2016. <https://www.wagmag.com/the-remains-of-designing-days-the-katonah-museum-of-arts-nest/>.

niggy tardust (shortest clip). Moonmedicin, 2019. <https://vimeo.com/326686936>.

<https://vimeo.com/79336985>

"Plumed Tunic (1998-728)." Princeton University. Accessed August 3, 2024.
<https://artmuseum-dev.princeton.edu/collections/objects/37099>.

Schrag, Brian. *Artistic dynamos: An Ethnography on Music in Central African Kingdoms*. Firsted. New York, New York: Routledge, 2023.

Steward, James. *Princeton University Art Museum: Handbook of the Collections*. Princeton, N.J: Princeton University Art Museum, 2013.

Tauer, Kristen. "First Survey of Sanford Biggers' Quilts on View at Bronx Museum." WWD, September 10, 2020.
<https://wwd.com/feature/sanford-biggers-bronx-museum-marianne-boesky-quilts-codeswitch-1234572165/>.

Wally, Maxine. "Sanford Biggers on His Trio of New Art Shows: 'A Pandemic Pile-Up.'" W Magazine, September 13, 2023.
<https://www.wmagazine.com/culture/sanford-biggers-quilts-exhibition-monique-meloche-gallery-interview-studio-visit>.