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Flight Paths Through the Museum: Paiute Duck Decoys and Bird Specimens from the 1859 Utah Territory Expedition

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Objects can possess complex biographies as told through the materials used to create them, their paths of exchange, and the different meanings they acquire as they shift between contexts (Bell 2017; Van Allen 2019b). In this essay I examine the circulation paths of three sets of Smithsonian ducks, each crafted into a carrier for different knowledge using the same materials: bird parts combined with grass, cotton, and wire. Different meanings can be created from the same materials, dependent on the practices of those who make, use and preserve the objects.

This particular collection of ducks includes Paiute duck decoys and scientific bird specimens collected during the Utah Territory Expedition in the 1850s. Collected in the same location at the same time, these two sets of bird bodies were each hand-crafted into objects by makers to serve specific purposes. One set of objects were made from duck skins stretched over reed forms by Paiute, the native inhabitants of Utah and Nevada, as hunting decoys (NMNH E2178, E7127, E7129). Another set of ducks were skinned and stuffed with cotton by scientists on the Utah Territory Expedition (1858-1859) to chart the wildlife they encountered (USNM A13466). Shipped back to the Smithsonian United States National Museum (USNM), precursor to the National Museum of Natural History, these assemblages of reconfigured duck parts were catalogued into "cultural" artifacts Ethnology Department and "natural" specimens for the Ornithology collections.

To understand these historical ducks in their contemporary context I learned to prepare a duck study skin in the Smithsonian Division of Birds in 2015. Taking genetic samples from a black-bellied whistling duck during the preparation process, over the course of a year I followed the assemblage and circulation of its skin, feathers, bones, tissues and genomic data through the

museum and beyond[1]. The circulations of bird parts—from the field into the museum, to the lab and then out into public databases–charts not a linear path but a set of circular routes, back and forth through time (2017; 2018). The same materials can carry different meanings based on what was saved or discarded during the process of transforming a duck into a tool—be it a decoy for hunting, a study skin to map species, or a tissue sample to preserve genetic biodiversity.

In looking to these three hand-crafted duck artifacts of decoy, specimen and tissue sample, I ask what kinds of relationships have been and are being constructed through the bodies of these birds as epistemic objects (Knorr-Cetina 1999). Outside of their original context from the Indigenous communities where they were obtained, these bird bodies have been multiply transformed (Mol 2003) into different tools through specific sets of practices. Feathers and cotton were meticulously crafted by various hands into tools capable of producing different kinds of knowledge. Each bird body was reshaped into a solution to a particular problem, such as decoys for hunting, specimens to chart taxonomy, or tissue samples for biodiversity conservation. Each of these objects also has built into its making specific orientations to time, from reconstructed pasts that include indigenous peoples hunting ducks millennia ago, to reconstructed pasts of avian evolution, to predicted futures of extinction and loss and the preservation of frozen tissue samples to secure biodiversity for future research. These types of time are folded into preparation practices (Van Allen 2019a), and highlight the importance not only of museum collections, but of those who make and maintain them for uncertain futures.

Paiute Duck Decoys: Different Constructions of Time

In March of 1859 taxidermist Charles S. McCarthy (1828-1901) collected several ducks in the Utah Territory. A naturalist assigned to the U.S. Army's expedition of the Utah Territory (1858-1859), McCarthy was an ornithologist, taxidermist and hunter. The Expedition's goal was to map a route to California suitable for laying a railroad, a precursor to opening up the Western frontier, while also accumulating geological, botanical and zoological specimens en route as a catalog of

[1] This work was part of my dissertation research at the Smithsonian National Museum of Natural History from 2015-2016, an ethnography of how practices and perceptions of time, preservation, and care are changing in the museum with the introduction wildlife biobanking (Van Allen 2016).

potential natural resources (Smithsonian, United States National Museum et al. 1876). McCarthy's expedition journal notes an encounter with a group of Paiute hunters near Lake Utah, where he describes their hunting techniques and equipment, including duck decoys made by stretching a duck skin over a body fashioned from tule reeds. He acquired three of these duck decoys made with canvasback duck skins (*Aythya valisineria*), with their entire head including the skulls still intact inside the reed body, much like an ornithology study skin.

Duck decoys such as these have a long history. The National Museum of the American Indian holds in its collections Northern Paiute hunting gear collected in the 1920s (NMAI 13/4512, 13/4513), identical to the decoys collected by McCarthy. However, this form dates back thousands of years to a collection of duck decoys excavated from the Lovelock Cave in Humboldt County Nevada in 1912 (Tuohy and Napton 1986). They have been dated to 400 BC and are made with a variation of the same materials: tule rush combined with a bird's feathers. The reeds are folded, wrapped and bound into a basic duck form, then tied with cord, painted, and adorned with various feathers including several species of waterbirds such as ducks and geese. Mike Williams, a contemporary Northern Paiute artist, has created exact replicas of the Lovelock duck decoys using traditional techniques. These include seasonally gathering and processing tule reeds from some of the same areas along the shores of lake Utah where the 1853 Utah Territory expedition made their collections of the duck decoys and duck specimens.

1859 Duck Specimens: Different Meaning from the Same Materials

On March 21, 1859 Charles McCarthy went hunting for specimens and shot a redhead duck (*Aythya americana*). Neither his journal nor his specimen log note whether he used his newly acquired Paiute duck decoys to help with this task. It is possible that the duck decoys were "legible" (Keane 2003) to McCarthy in multiple ways, useful as a tool for his purposes as both a hunter as well as an ornithologist.

Setting up small field stations along the way during the expedition, many of the hundreds of birds, eggs, mammals, fish, lizards, plants and geology samples McCarthy collected— including the duck specimen—were prepared in the field and shipped back to the Smithsonian United

States National Museum (USNM). Upon arrival at the Smithsonian the paths of the ducks diverged. The decoys went to the department of Ethnology as cultural artifacts, and the study skins made their way to the Division of Birds. However, the duck decoys first passed through the hands of the ornithologist Robert Ridgeway (1850-1929), curator of Birds at the USNM from 1869 to 1929 and a protégé of Spencer Fullerton Baird (1823-1887), an ornithologist and also the Second Secretary of the Smithsonian.

The duck decoys may have arrived in the crates with the bird skins and then migrated to the ethnographic collections. An appendix of the 1859 annual report from the Smithsonian lists the duck specimen as collected by McCarthy, but the species identified by Baird (Smithsonian Institution. et al. 1859). Yet it is not Baird's name but Ridgeway's that appears on the decoys, carefully written on the underside of the decoys, inked onto the tule reeds next to their catalog numbers. From this, we see that both duck specimens and decoys found their way through an ornithologist's hands before being re-categorized and handed over to the domain of anthropologists. In this initial moment of categorization, the dominant "vibrant matter" (Bennett 2010) of both the decoys and the specimens was their quality as "bird" objects, both functioning briefly as "natural" instead of "cultural" objects. However, both of these objects are cultural artifacts, each produced by individuals within different cultural contexts who transformed duck skins into tools suited to their own specific needs.

Given that McCarthy's duck specimen and the Paiute hunting decoy had been prepared in the same place at approximately the same time, it seemed possible that they had been assembled from the same materials—using a similar set of practices to construct the needed tool, be it a decoy to hunt ducks, or a study skin to survey species. To test this theory I reassembled the Utah ducks in 2015, bringing the 1859 decoys and study skins back together in the CT scanning room at the Smithsonian NMNH. As the different birds slowly slid through the machine we captured a view inside each of them to see what they were made of, to verify if indeed the were constructed from the same materials

Each technique used the duck's skin in similar ways: the maker had skinned the duck and cleaned it out, with the skull, vertebrae and wing bones left intact, and then combining these with

reeds and grasses found on the shores of Lake Utah. As the CT scanner made loud thudding noises in the small room, the red line of the laser guide slid over the small duck bodies propped up on foam supports, the X-rays slices captured from multiple angles combining to rendering their internal structures visible. Peering at the monitor we rotated the resulting 3D scan of the specimens and decoys, moving from the surface of the skin, to the stuffing, to the internal structures. The beaks and pieces of metal appeared white, an indicator of the lead content of the metal wire and of the arsenic used to preserve the ducks when they arrived at the Smithsonian. In the decoys, we saw a piece of wire wound through the body with a loop at the base, with nails in front tacking the skin in place. The duck specimen revealed a parallel internal structure, an assemblage of bird bones, skin, feathers and wire revealed inside the bird body. The texture of the duck skin visible under the feathers was strikingly clear as was the wire down the center of the bird—from tip to tail—a replacement for its spine.

From these different combinations of bird bones, feathers, skin, stuffing and wire, I began to think about how these birds became carriers for different kinds of knowledge as they were transformed. That is, how the grass, straw or cotton used to pack the birds into crates also ended up inside the birds, and how these were in effect an unintentional biodiversity survey within the body of the bird. Local grasses, parasites in and on the birds, genetic data and the microbiome of the birds extractable from the remains of the birds itself (cf: Grealy et al. 2017; Meineke et al. 2019), each of these objects functioning as a map of the specific culture that produced the object, with the bird skin transformed to carry these different meanings across domains but also through time.

Freezing Biodiversity for the Future: Duck Tissue Samples

A bird body can unravel in many different ways in the back rooms of the museum. In the Smithsonian's Division of Birds I was told I would be using the "fat wheel," which sounded both fascinating and slightly ominous. After carefully pulling the skin off of a black-bellied whistling duck (*Dendrocygna autumnalis*), collected in Nevada in May 2011 for a biodiversity survey, I used a rotating wheel to remove the thick layer of fat from the inside of the duck's skin, slowing becoming covered in a pungent pink foam.

I learned to turn the skin inside out, clean it, stuff it and sew it closed, and along the way took various tissue samples– from a 2ml cryovial of liver-heart-muscle to feather clippings to removing the salt glands from along the eye ridge using a very sharp and very small scalpel. I did this work using a set of tools that were essentially unchanged for the last two hundred years, possibly using the same tools and techniques McCarthy used while preparing his duck skin in the 1850s (Baird 1856). While the skin found its way into the collections after it had dried, pinned out to the desired shape, it was sorted into the collections and catalogued.

The internal carcass I had removed from the duck skin, classified as biohazard by the Division of Birds, could be taken up by the Invertebrate Zoologists who specialize in carefully teasing out tapeworms from the intestines of the dead bird using the tips of two needles. The bird's intestines, in a sense, becoming a fieldsite. With biohazadrous waste in the Division of Birds becoming a precious specimen for the Parasite collection, the worm is prepared and sorted into the collections and a small part of the worm is also stored in a cryotube, much like the samples I took from my duck specimen. Unraveling the duck into various parts and pieces, I carefully numbered the tubes of tissue I had collected, sticking a barcode label onto the tubes before they went into the Preparation Lab's freezer. From there, the tubes could follow two routes. They could be transported to the Smithsonian Biorepository, scanned into a database, sorted into a rack, and submerged in a large stainless-steel vat of liquid nitrogen for future use. On another path samples could circulate to the Laboratories of Analytical Biology to be extracted, processed and become genetic data sets, evidence for scientific research. These genetic data sets are uploaded to public databases, sites that accumulate and order the genomic biodiversity of life on earth in molecular detail (cf: BOLD 2015; GenBank 2018; ISBER 2018).

Conclusion

As I looked at these different reconfigurations of duck skins, their parts and pieces, and the paths they took through the museum I started to think about circulation patterns. These were not just a linear trajectory from field to lab to collection—as duck decoys, bird skins or tissue samples—but the different 'life histories' of these new museum objects, these parts, as they moved around

the world in global circuits, both in the contemporary moment but also into the multiple imagined futures. Through disassembling and reassembling this set of ducks, from scanning decoys and specimens, to preparing a study skin, I began to track, in the words of Stephan Helmreich (2009), the “unbound biology” of my bird. This concept signals the fractioning of living things into new objects, such as a tissue sample in a tube, a DNA extract, or a set of data, with each new fraction capable of carrying different values, and concentrating those values as they shift across time and across different cultural, economic, and technological domains.

The value of these collections shifts over time as new concepts and new technologies move hand-in-hand, finding ways to create windows into the past through research such as isotope studies of feathers and bones, and toepads from historic study skins, to visions of the future where frozen tissue collections may be used to understand historical changes in biodiversity loss, or to expand genetic bottlenecks of critically endangered species and rebuild a re-curated version of the natural world. These different types of time are a deep part of museum culture, where the past is preserved, while also thinking towards making specimens that will last 100 years or longer. As a Smithsonian specimen preparator told me “we never know what we might need in the future, so we have to preserve everything we can.”

What it means to preserve cultural and natural worlds is fundamentally changing, and those changes can be seen distinctly by attending to the details of how specimens are hand-crafted in different disciplines—from the hand-crated artifacts created in a Northern Paiute artist’s studio to the details of extracting DNA in a museum biolab, to techniques for preserving specimens in the Division of Birds. Mapping of the circulation paths of these Smithsonian ducks unravels not only the social lives of these objects, but also highlights the different values they have accrued through their transformations and their shifts in context. Following David Graeber’s concept that value is a form of human "meaning-making," (2013) we can return to the different bird collections as valuable in multiple registers for an array of audiences, including indigenous Paiute communities and their contemporary ancestors, as well as museum biologists and their historic predecessors. Both of these contemporary audiences are exploring museum collections as part of their own cultural history, as indigenous artists visit ethnographic collections to reconnect to their cultural heritage, and museum biologists extract samples from their historic

specimen collections. In each case, figures from their respective pasts made materials into the epistemic objects of duck decoys and bird specimens, never conceiving of their future use re-imagined as archives of cultural heritage and repositories of genetic information. This perspective highlights the way different hands make different worlds with material practices, shaping bird skins to conform to the needs at hand, valuing and re-valuing parts for different purposes. The circulations of bird parts chart not a linear path but a set of circular routes, back and forth through time, through the practices of past makers and collectors that resonate in unexpected ways for contemporary audiences. Transformed into a scientific study skin, a feathered duck decoy or a genome, these various practices of making and remaking bird artifacts speaks to the continually generative potential of museum collections.

References

Baird, Spencer Fullerton. 1856. "Directions for Collecting, Preserving, and Transporting Specimens of Natural History." Annual Report of the Smithsonian Institution. Washington D.C.: Smithsonian Institution.

Bell, Joshua A. 2017. "A Bundle of Relations: Collections, Collecting, and Communities." *Annual Review of Anthropology* 46 (1): 241–59.

Bennett, Jane. 2010. *Vibrant Matter: A Political Ecology of Things*. Durham and London: Duke University Press.

BOLD. 2015. "Biodiversity of Life Database, Systems V3." http://www.boldsystems.org/.

GenBank. 2018. "GenBank - National Institute of Health Genetic Sequence Database." http://www.ncbi.nlm.nih.gov/genbank/.

Graeber, David. 2013. "It Is Value That Brings Universes into Being." *HAU: Journal of Ethnographic Theory* 3 (2): 219–43.

Grealy, Alicia, Nicolas Rawlence, Michael Bunce, Alicia Grealy, Nicolas J. Rawlence, and Michael Bunce. 2017. "Time to Spread Your Wings: A Review of the Avian Ancient DNA Field." *Genes* 8 (7): 184. doi:10.3390/genes8070184.

Helmreich, Stefan. 2009. *Alien Ocean: Anthropological Journeys in Microbial Seas*. Berkeley: University of California Press.

ISBER. 2018. "International Society for Biological and Environmental Repositories." Accessed August 8. https://www.isber.org/.

Keane, Webb. 2003. "Semiotics and the Social Analysis of Material Things." *Language and Communication* 23 (3): 409–425.

Knorr-Cetina, Karin. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. New Haven and London: Harvard University Press.

Meineke, Emily K., T. Jonathan Davies, Barnabas H. Daru, and Charles C. Davis. 2019. "Biological Collections for Understanding Biodiversity in the Anthropocene." *Philosophical Transactions of the Royal Society B: Biological Sciences* 374 (1763): 20170386. doi:10.1098/rstb.2017.0386.

Mol, Annemarie. 2003. *The Body Multiple*. Durham and London: Duke University Press.

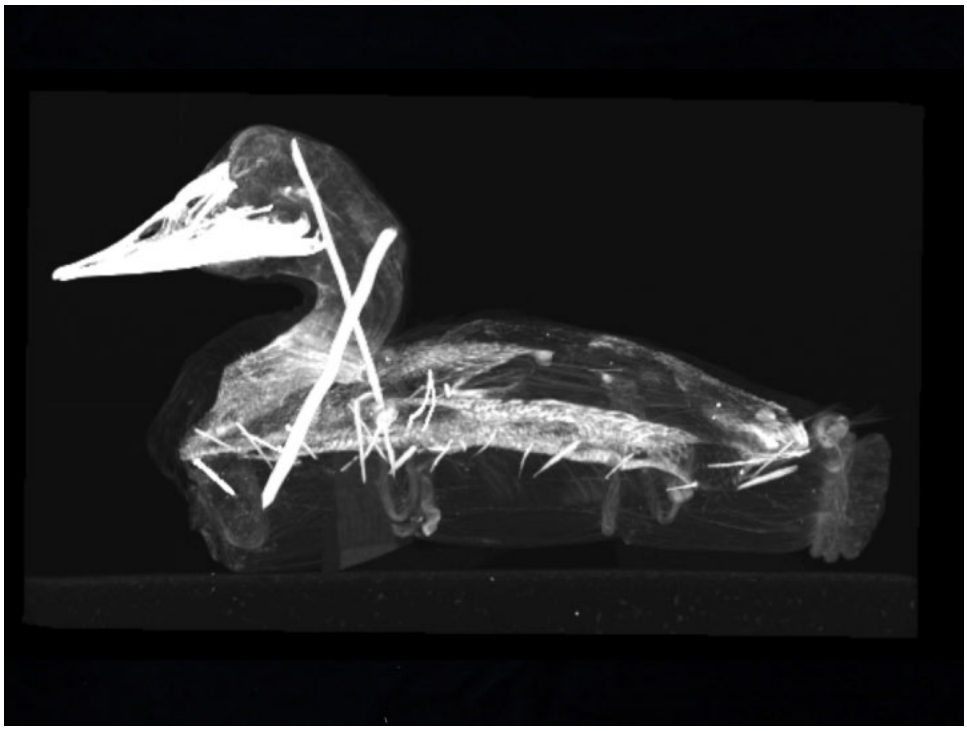
Smithsonian Institution., Smithsonian Institution, and United States National Museum. 1859. *Annual Report of the Board of Regents of the Smithsonian Institution.* Vol. 1859. Washington : Smithsonian Institution,. https://www.biodiversitylibrary.org/item/35805.

Smithsonian, United States National Museum, Spencer Fullerton Baird, Charles S. McCarthy, and J. H. Simpson. 1876. *Report of Explorations across the Great Basin of the Territory of Utah for a Direct Wagon-Route from Camp Floyd to Genoa, in Carson Valley, in 1859, by Captain J. H. Simpson...* Washington, D.C.: Government Printing Office.

Tuohy, Donald R., and L. Kyle Napton. 1986. "Duck Decoys from Lovelock Cave, Nevada, Dated by 14C Accelerator Mass Spectrometry." *American Antiquity* 51 (4): 813–16. doi:10.2307/280867.

Van Allen, Adrian. 2016. “Crafting Nature: An Ethnography of Natural History Collecting in an Age of Genomics.” Ph.D. Dissertation, Berkeley: University of California, Berkeley.
———. 2017. “Bird Skin to Biorepository: Making Materials Matter in the Afterlives of Natural History Collections.” *Knowledge Organization* 44 (7): 529–44. doi:https://doi.org/10.5771/0943-7444-2017-7-529.
———. 2018. “Pinning Beetles, Biobanking Futures: Practices of Archiving Life in a Time of Extinction.” *New Genetics and Society* 37 (04): 387–410. doi:10.1080/14636778.2018.1546573.
———. 2019a. “Folding Time: Practices of Preservation, Endangerment and Care in Making Bird Specimens.” In *Deterritorializing the Future*, edited by Rodney Harrison and Colin Sterling, In press. Critical Climate Change. London: Open Humanities Press.
———. 2019b. “Oiseaux, Plumes, Spécimens, Données: ‘Embodied Archives’ et Valeur Changeante Des Collections de Musée Dans l’anthropocène (Birds, Feathers, Specimens, Data: Embodied Archives and the Changing Value of Museum Collections in the Anthropocene).” In *Valeurs et Matérialité: Approches Anthropologiques*, 127–47. Editions Rue d’Ulm, Sous La Direction Frédéric Keck. Paris: Presses de l’Ecole normale supérieure-musée du quai Branly.

Figures:

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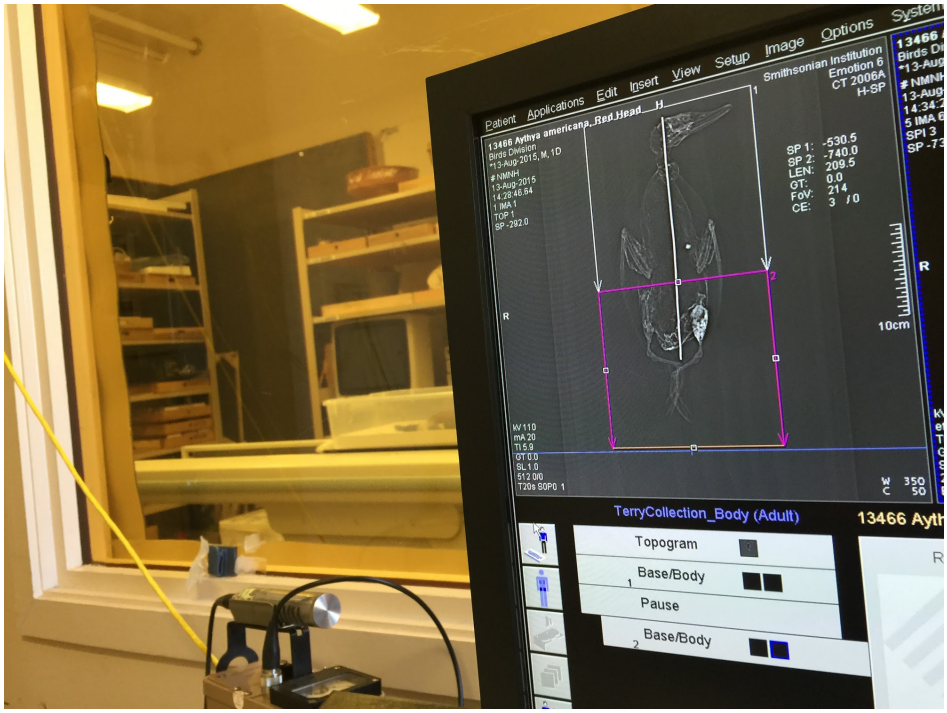
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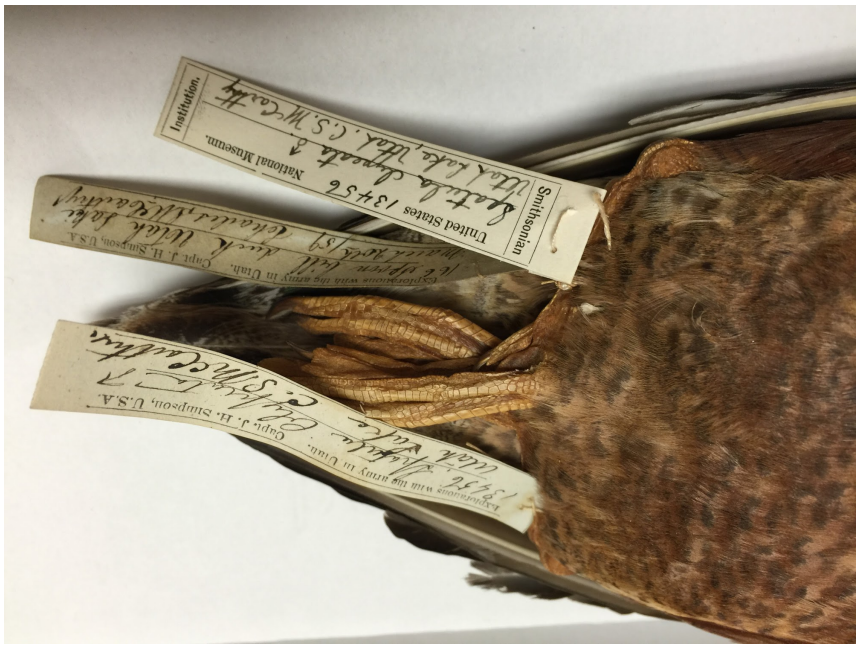
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