



História, Ciências, Saúde-Manguinhos

ISSN: 0104-5970

ISSN: 1678-4758

Casa de Oswaldo Cruz, Fundação Oswaldo Cruz

Jørgensen, Dolly

Erasing the extinct: the hunt for Caribbean monk seals and museum collection practices

História, Ciências, Saúde-Manguinhos, vol. 28, no. Suppl.1, 2021, pp. 161-183

Casa de Oswaldo Cruz, Fundação Oswaldo Cruz

DOI: <https://doi.org/10.1590/S0104-59702021000500007>

Available in: <https://www.redalyc.org/articulo.oa?id=386174013009>

- How to cite
- Complete issue
- More information about this article
- Journal's webpage in redalyc.org



Scientific Information System Redalyc

Network of Scientific Journals from Latin America and the Caribbean, Spain and Portugal

Project academic non-profit, developed under the open access initiative

Erasing the extinct: the hunt for Caribbean monk seals and museum collection practices

*O desaparecimento do que
está extinto: a caça às focas-
monge-do-caribe e as práticas
de acervos museológicos*

Dolly Jørgensen¹

¹ Professor, University of Stavanger.
Stavanger – Norway
orcid.org/0000-0002-5391-9374
dolly.jorgensen@uis.no

Received on 31 Jan. 2021.

Approved on 14 June 2021.

<http://dx.doi.org/10.1590/S0104-59702021000500007>

JØRGENSEN, Dolly. Erasing the extinct: the hunt for Caribbean monk seals and museum collection practices. *História, Ciências, Saúde – Manguinhos*, Rio de Janeiro, v.28, supl., dez. 2021, p.161-183.

Abstract

The Caribbean monk seal (*Monachus tropicalis*), the only seal species native to Central America, was declared extinct in 2008, with the last confirmed sighting in 1952. This species historically had a broad range throughout the gulf of Mexico. This article discusses the history of Western science on the monk seal, from its first recorded sighting by a Western colonizer in 1492 to scientific collection in the 1800s and 1900s, as a history of the erasure of this species. Museum practices of collecting and displaying Caribbean monk seals have directly contributed to this erasure, and ways of writing a new history by giving the Caribbean monk seal the capacity to refuse erasure are suggested.

Keywords: environmental history; extinction; museums; natural history; animals.

Resumo

A foca-monge-do-caribe (*Monachus tropicalis*), a única espécie de focas nativa da América Central, foi declarada extinta em 2008, tendo o último registro de avistamento confirmado em 1952. Historicamente, essa espécie ocupou vastas áreas do golfo do México. Este artigo discute a história da ciência ocidental sobre a foca-monge, desde o primeiro registro de seu avistamento por um colonizador ocidental, em 1492, até a coleção científica nos anos 1800 e 1900, como uma história de desaparecimento da espécie. As práticas museológicas de coleta e exposição de focas-monge-do-caribe contribuíram diretamente para tal desaparecimento, e aqui são sugeridas maneiras de escrever uma nova história concedendo à foca-monge-do-caribe a possibilidade de recusa ao desaparecimento.

Palavras-chave: história ambiental; extinção; museus; história natural; animais.



The Caribbean monk seal (*Monachus tropicalis*), the only seal species native to the gulf of Mexico, was declared extinct by the International Union for the Conservation of Nature in 1994 and the US National Ocean and Atmospheric Administration in 2008, with the last confirmed sighting in 1952. Its loss marked the second extinction of a marine mammal in the modern era – the first was Steller’s sea cow of the northern Pacific, which became extinct in 1768.

The Caribbean monk seal, also known as the Jamaican seal or West Indies seal in English-language historical sources and *foca monje del Caribe* in Spanish, is in the family of seals known as monk seals (the genus *Monachus*) that includes one species in the Mediterranean and another in Hawaii.¹ It was apparently widely distributed across the West Indian region, although it was probably never particularly abundant (Baisre, 2013). An informant in 1878 noted that a few monk seals could be found even as far north as the cape of Florida, but the highest numbers were on the small islands between Cuba and the Yucatan and in the Bahamas (Allen, 1880, p.721-22). “Seal Kays” are noted on maps of Jamaica from 1774 onward, indicating the presence of monk seals (p.722). The Caribbean monk seal may have had a very large range over the whole gulf of Mexico (Timm, Salazar, Peterson, 1997; Adam, Garcia, 2003).

Despite this extensive range and the last sighting only 70 years ago, few people have ever heard of the Caribbean monk seal. In contrast to the North American passenger pigeon and the Tasmanian thylacine, which are ubiquitous historical and contemporary iconic representations of extinction, the Caribbean monk seal never became iconic. Although remains of monk seals are held in natural history museums in the Americas and Europe, they are tucked away in back rooms and study collections with silenced stories.

Each extinction is “a distinct unraveling of ways of life, a distinctive loss and set of changes and challenges that require situated and case-specific attention” (van Dooren, 2014, p.7). Extinctions sever relations in time (Rose, Van Dooren, Chrulaw, 2017), although the cultural encounter extends beyond the physically violent historical encounter that brought about the species’ demise (De Vos, 2017). In other words, even after a particular type of animal or plant is no longer living biologically, it may continue to live on through contact and stories, or it may be relegated to oblivion. Ursula Heise (2016, p.5) has argued that extinction and biodiversity loss are issues of imagination – “of what we value and what stories we tell, and only secondarily issues of science.” Extinction narratives depend on the cultural and scientific context rooted in time and space (Sepkoski, 2020; Mitchell, 2020). This article rejects the normalization of violent extinction, presenting an extinction narrative that exposes the structures that brought about the end of the Caribbean monk seal and giving this animal the capacity to refuse erasure (Theriault, Mitchell, 2020). The extinction story of the Caribbean monk seal is told by piecing together the remains, not in order to disentangle the relations, but rather to see relations as a messy and tangled whole in which the seal is still an active participant.

This article discusses the history of Western scientific writing and museum practices dealing with the Caribbean monk seal, from its first recorded sighting by a Western colonizer in 1492 to scientific writings on it in the late nineteenth and early twentieth century, arguing that these contributed to the erasure of the species. Erasure here is more than just the loss

of biological life (extinction), but also the failure to recount that life's history. This erasure happened both in spite of and through practices of collecting and displaying the species in museums, zoos and aquariums. Existing remains of the Caribbean monk seal (text, image, and material) were nearly all produced and are now contained within a museum context. As the museum historian Samuel Alberti (2005, p.561) has commented, the museum is "a vessel for the bundle of relationships enacted through each of the thousands of specimens on display and in store." Each of the individual *Monachus tropicalis* specimens in museum collections is there through a bundle of relations, yet those relations are frequently hidden from view.

Museums are particularly important sites for telling extinction stories and how lost species are remembered. They not only store the last bodily remains of extinction, but also act as "remembrance places" that construct narratives about lost species (Jørgensen, 2019, p.123). This article thus attempts to collate sources about Caribbean monk seals in museum collections, including all the known historical drawings and photographs of the animals both alive and dead up to the point of the extinction of this species in order to make its relations to the museum visible and combat erasure.

Western exploitation and early scientific interest in the Caribbean monk seal

Seals in the Caribbean were first mentioned in European accounts in 1494, when men on Columbus's second voyage killed eight seals sleeping on the rocky island of Alta Velda (King, 1956, p.215). These were the first large mammals encountered on land by Europeans in the New World. More texts from the 1600s and 1700s include similar passages with seals and seal hunting by Europeans on the Caribbean islands. For example, 14 seals were killed by Ponce de Leon's men on the Dry Tortugas islands off Florida in 1513. In 1524, a ship in an expedition run by Hernando Cortés sank north of Veracruz, and three survivors made their way onto a small inlet "where there were many seals that came out at night to sleep on the sand" (Timm, Salazar, Peterson, 1997, p.550). The men ate seal meat to survive for about two months before they were rescued.

Once there was Western settlement on the Caribbean islands, seals in the region were hunted systematically for oil. In 1705, Captain William Dampier (1705, p.26-27) wrote that seals sunned themselves on two or three islands of the Alacranes where they were hunted: "The Spaniards do often come hither to make Oyl of their Fat; upon which account it has been visited by English-men from Jamaica, particularly by Capt Long: who having the Command of a small Bark, came hither purposely to make Seal-Oyl..." In a contemporaneous text published in 1707, the famous English physician and naturalist Sir Hans Sloane (1707, p.78) noted that "The Bahama Islands are fill'd with Seals, sometimes Fishers will catch one hundred in a night. They try or melt them, and bring off their Oil for Lamps to these Islands." Mark Catesby, who published the first comprehensive natural history of the southern North American colonies, wrote that the Bimini islands between Florida and the Bahamas were "abounding in Seals: Hither the Bahamians resort to kill them, carrying proper utensels and vessels for boiling and barrelling up the Oil drawn from these Animals" (Catesby, 1731, p.38). Another eighteenth-century account noted that a large bank on the western side of the Yucatan peninsula "abounds with great plenty of seals, the fat of which the Spaniards

pay [i.e. coat] the bottom of their ships with at the Havana" (Roberts, 1763, p.19). This trade in seal products was long lasting. In 1853, the Royal Society of Arts in London requested samples of natural animal products from Jamaica for their collection of raw products, and both seal skins and seal oil were on the list (Solly, 1856). This usage appears to have continued: seals were regularly killed for oil south of Cuba by turtle-hunters, shipwreck scavengers, and whalers according to a report from 1878 (Allen, 1880). One report from a sailor on a guano collection vessel who had in 1856 visited islands used by the seals noted that one island was filled with skeletons and hides, leading him to conclude "some one must have carried on an extensive business in that line, for we made a grand bonfire of perhaps a hundred barrels of the remains" (Ward, H.L., 1887, p.263).

Although naturalists like Sloan had at least heard of seals inhabiting the Caribbean islands by the 1700s, a zoological description of the animal was not published until 1849. This led naturalist Henry A. Ward (1887, p.392) to comment almost four decades later: "It is a fact of rather peculiar interest that this, the first large mammal ever discovered in America should, by the strange mishaps of natural history collecting, be the very last one to become known satisfactorily to science." John Edward Gray, keeper of zoology at the British Museum from 1840 to 1874, published a paper on some of the museum's seal specimens in 1849 which included the first-ever description of the Caribbean monk seal and reported two new seal species.² First, he stated that the museum had recently acquired the skin and skull of a very young seal from the West Indies. He identified the specimen as the same genus as the hooded seal of the Northern Hemisphere, but claimed it was distinct from seals in North sea based on the tooth position and shape of the skull. He suggested calling the species *Cystophora antillarum*, and later gave this seal the common name "West Indian Hooded Seal" in his comprehensive catalog of mammals (Gray, 1850, p.38). Hooded seals from the northern Atlantic (*Cystophora cristata*) are sometimes found in the Caribbean sea, but they have been rejected as a separate species in the scientific nomenclature literature (Allen, 1880, p.718-720). The seal described by Gray consequently should now be considered *Cystophora cristata*.

The second new species described by Gray (1849, p.93) was based on an "imperfect skin" with no bones belonging to a seal from Jamaica, which had been given to the museum by the naturalist Philip Henry Gosse. From other historical records we can piece together a history of this specimen. This animal was taken from a small island called Seal Key, part of the Pedro Shoals south of Jamaica; the Pedro Shoals were an important fishery and seabird rookery which was exploited for egg collection (Jamaica..., 1856, p.28-29). Gosse (1851) wrote about the Pedro Shoals and the collection of seals there using information provided to him by Richard Hill, a Black Jamaican political leader who was active in natural history and social reform societies from the 1840s (Cundall, 1920), and the Jamaican George Wilkie. Gosse reproduced Hill's description of the size, characteristics, and behavior of the "Pedro seal" based on observations of a live young adult in captivity that died after four months. After its death, Hill noted that the seal was still "surprisingly fat" even though it had not eaten and "yield four gallons of oil" (quoted in Gosse, 1851, p.309). Wilkie had visited the Pedro Shoals in 1846 and noted the difficulties of getting there because of the remoteness of Seal Key and difficult ship landing conditions. Still, Wilkie's party successful killed a large bull seal, as well as a young pup approximately four feet long (Gosse, 1851,

p.312). Wilkie sent the skin of one of his specimens to Gosse, who then gave it to the British Museum (p.314).

Although Gray identified this specimen in his first publication as a bearded seal (known at the time as *Phoca barbata*), in an 1850 publication he identified it as a new species which he called the Jamaica Seal (*Phoca tropicalis*) (Gray, 1850). In 1864, he changed his mind about the seal belonging to the bearded seal family and instead tentatively placed the species into the monk seals, renaming it *Monachus tropicalis* (Gray, 1864). He had decided that the seal must be related to the monk seal of the Mediterranean (*Monachus albiventer*). This was made definitive in 1866, when Gray published a catalog of the seal and whale specimens held by the museum. In his catalog, he describes the Jamaica Seal (*Monachus tropicalis*) as a grey-brown seal with very short hair and short, thick whiskers, based on the only specimen held by the museum (Gray, 1866). *Monachus tropicalis* is the name that most scientists currently use for the species.

The act of discovering the Caribbean monk seal is a story of slow violence (Nixon, 2013) and erasure. From the first recorded Western encounter with these animals, they were hunted as prey. The seals became a resource, providing fur and oil from their dead bodies. During this process, they began to disappear from their environment. Several hundred years after that first encounter, the animals were consumed not only for meat or oil, but also as curiosities of science.

The desire to complete museum collections

For 34 years after the publication of Gray's description, *Monachus tropicalis* was known to science only via the single specimen in the British Museum. This "imperfect skin" from Jamaica was later stuffed (Gray, 1874, p.11). This "stuffed animal" donated by Gosse in 1847, labeled as *Phoca tropicalis* and given collection number NHMUK 1847.2.2.2, is the holotype specimen of *Monachus tropicalis*, meaning that it is the particular individual used as the reference in assigning all specimens to this species (King, 1956). The specimen was on display at the British Museum in Bloomsbury and then relocated to the new natural history museum in South Kensington in 1881.³ According to a report from 1887, stuffed specimens of both *Monachus tropicalis* and *Cystophora cristata* were on exhibition in the Mammals Gallery of the British Museum, so it was in the public eye for at least a few years (Allen, 1890).

A second Caribbean monk seal specimen was finally acquired by a museum in October 1883. Professor Felipe Poey y Aloy of Havana, Cuba gave the Smithsonian a mounted specimen containing the skull and leg bones (NMNH 13950). Poey was Cuba's most renowned naturalist, and the natural history society there was named for him (Mestre, 1915). The seal had been captured in the bay of Havana and its mounted skin was exhibited in Havana in the summer of 1883 (True, Lucas, 1885, p.331). The Smithsonian was particularly proud to receive this example since it was "the only one known to exist in any scientific collection, with the exception of the British Museum" (True, 1885, p.218). Unlike the British Museum's specimen, which was only an imperfect skin, this object included the skull, which was "especially interesting as affording characters by which the genus has been determined" (True, 1885, p.218). Smithsonian Department of Mammal

specialists Frederick True and F. A. Lucas provided measurements and described the skull and skin coloration in detail in an article about the specimen, which was illustrated with three masterful drawings of the skull (Figure 1). These are the first published scientific drawings of *Monachus tropicalis*.

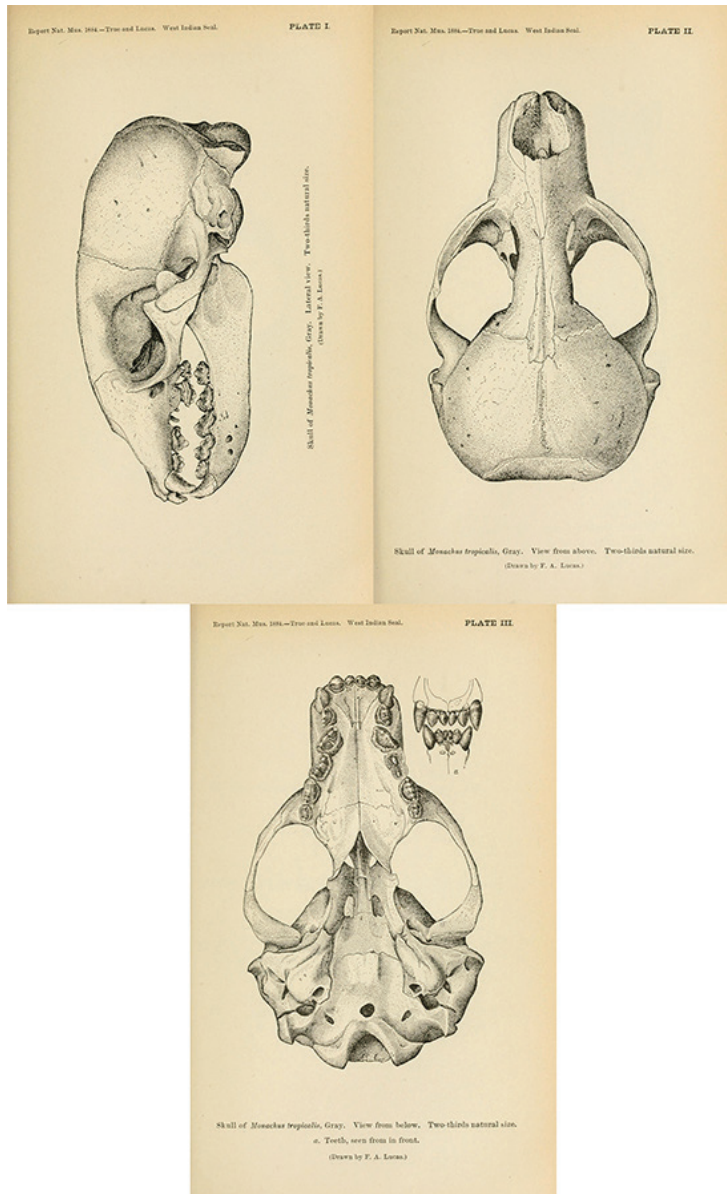


Figure 1: The first scientific drawings of a Caribbean monk seal body part: three skull drawings made from the Poey specimen in the Smithsonian collection (True, Lucas, 1885, plates I-III)

In 1884, author and artist Henry Elliott of the Smithsonian Natural History Museum published an article in *Science* with an illustration of *Monachus tropicalis* modeled on Poey's prepared and mounted specimen. It is the first known drawing of the species (Figure 2).

A photograph of the Poey specimen was reproduced in 1889 (Figure 3). Although he acknowledged that the monk seal was “excessively rare,” Elliott wrote in his *Science* article that he explicitly hoped the drawing would “stimulate the attention of some one of many fruit and sponge vessel owners now cruising in West-Indian waters, who, detecting the presence of another specimen, may secure it, and forward the rare and valuable trophy to those who would appreciate and preserve it” (Elliott, 1884, p.753). Elliott later became heavily involved in seal conservation, particularly in the North Pacific.

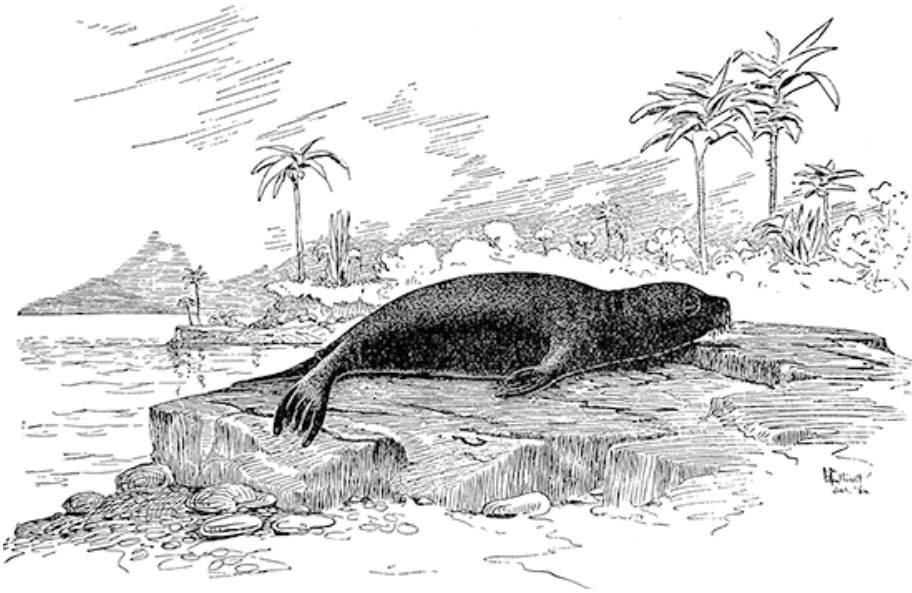


Figure 2: The first known drawing of a full body view of the Caribbean monk seal; made from the Poey specimen in the Smithsonian collection (Elliot, 1884, p.753)

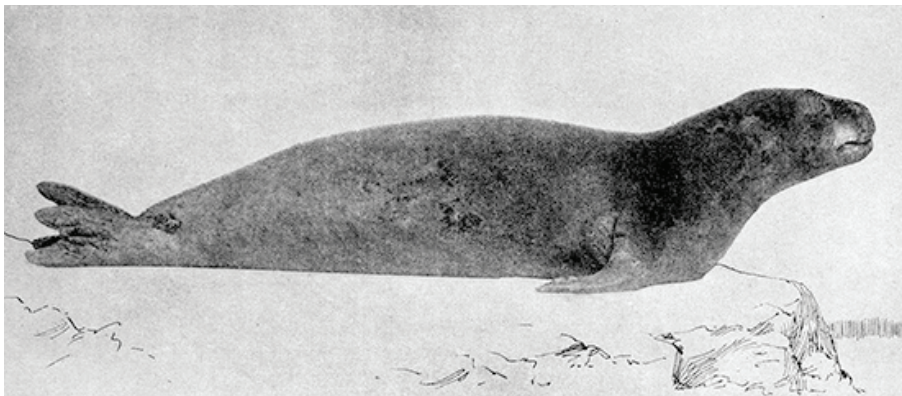


Figure 3: Photograph of the Poey Caribbean monk seal specimen in the Smithsonian collection (Lucas, 1891, plate XCV)

The call to secure specimens was picked up by Henry A. Ward, who was the proprietor of Ward's Natural Science Establishment, the premiere provider of natural history specimens to museums and universities worldwide in the late 1800s (Kohlstedt, 1980).⁴ He collected

information about the presence of monk seals in the Caribbean region and found evidence of seals in the gulf of Mexico in the three keys known as Los Triangulos (The Triangles) near the Yucatan peninsula (Ward, H.A., 1887). These very small islands located about 100 miles off the coast of Campeche and 45 miles north from the Arcas Keys are flat coral atolls with sandy beaches, perfect for seals.

From December 1 to 4, 1886, Henry A. Ward's son Henry L. Ward worked in partnership with the naturalist Fernando Ferrari Pérez, who directed the Natural History Section of the Mexican Geographical and Exploring Expedition (Comisión Geográfico-Exploradora), to collect monk seals on the Triangle Islands. Their party brought back "nearly twenty specimens – skeletons and skins of all ages, from a suckling to the fully adult male, 7 feet in length" (Ward, H.A., 1887, p.392). The collection of these specimens was brutal because the seals had come to the Triangles to give birth. Henry L. Ward (1887, p.259) described the killing spree:

This proved to be the time of parturition among the seals, for upon making a landing on the east island we killed a female with a foetus nearly ready for birth, and in a little internal pond of salt water found a female lying on her side suckling her young. She paid no more attention to our near approach than would the familiar denizens of the barn-yard under similar circumstances. Subsequently four other females were killed containing nearly ripe foetuses. In one case, where the foetus was removed immediately after killing the mother it kicked and squirmed for one or two minutes in such a lively manner as to indicate that delivery would have occurred in a few moments had the female not been molested.

The indifference to the killing of both females and young is quite striking to modern readers, but it was only in the 1880s that US states began regulating hunting with bag limits and game commissions, often at the impetus of sport hunters who wanted to ensure viable future hunting prospects (Dunlap, 1988). The ease with which the hunting party acquired the seals was attributed by Ward to the seals' "tropical inactivity" (they are described as "lazily looking at us, perhaps uneasily shifting their position, and then dozing off in restless sleep"), "indecision," and "lack of intellectual acuteness" (Ward, H.L., 1887, p.261-262). Another way to interpret the seals' behavior is that they had little experience as a species with being hunted, and no significant defense mechanism behaviors. Being on a flat, small, isolated island also meant there was nowhere else for the seals to go. The encounter between these mother and soon-to-be mother seals and their pups and the hunting party stresses the unequal nature of the encounter.

Ward's success in acquiring Caribbean monk seals led to many new museum specimens being available for purchase. *Monachus tropicalis* had been listed in Ward's Natural Science Establishment July 1883 catalog of the mammals of Central America available to be supplied to the American Museum of Natural History (AMNH) in New York, although the company obviously did not yet have the specimens in hand. A handwritten note next to the entry in the Rochester University copy indicates a price of \$170, making it the most expensive item in the catalog (Ward's Natural..., 1883). AMNH did indeed add a group of Caribbean monk seal skeletal specimens (AMNH MO-10421, MS-11988, MS-11989, MS-11990, M-15896) to

its register in December 1886, all listed as taken in the Triangles Reef of the Yucatan and provided by Henry A. Ward.

The Caribbean monk seals collected by the Ward/Ferrari Pérez expedition made their way into other museums in the Americas as well. Henry A. Ward was listed as the provider of *Monachus tropicalis* which had been taken in the gulf of Campeche in the Harvard University Museum of Comparative Zoology in 1887: two mounted skins (MCZ Mamm-6520; Mamm-6579) and one skeleton (MCZ BOM-7264). In December 1886, the Smithsonian acquired two mounted skins from Ward (NMNH 18431 and 18432; also see True, 1891), a mounted skeleton (NMNH A22543), and a skin/skull (NMNH A18431). The ledger entry for the mounted skeleton notes that the cost was \$85.00, significantly less than the Ward catalog price quoted for AMNH. The La Plata Museum in Argentina also got a skull of a monk seal (MLP 1503) taken by Ward in 1886 (Daneri, De Santis, 2002). Henry A. Ward visited the Argentinian museum in October 1887, so it is possible he brought the skull with him at that time (Ward, H.A., 1890-1891).

A few Caribbean monk seals collected by the 1886 expedition in the gulf of Mexico were also purchased by European institutions: a skull and skin of an adult male collected in 1886 (NHMUK 1889.11.5.1) and a skull and skeleton of an adult female (NHMUK 1887.8.5.1) from Triangle islands were acquired by the British Museum. The Comisión Geográfico-Exploradora was listed as the collector of the former and Henry L. Ward was listed as the collector for the latter; both obviously came from the same expedition in December 1886. An adult skull and skeleton (UMZC K.7801) was given to the University of Cambridge Zoological Museum by Central American zoology expert Frederick DuCane Godman. The skeleton was articulated and exhibited as part of the Stewart Collection of skulls and horns in 1889 (Shipley, 1913, p.288-89). The Naturalis natural history museum in the Netherlands also acquired a mounted male adult from Ward's expedition (RMNH. MAM.63794).

Writing in 1887, Allen had noted that the "National Museum of the City of Mexico" had "two small skins" that had been taken about 5 years earlier in the Triangles. In the mammal collection catalog of the Museo Nacional published in 1895, there is a listing for *Monachus tropicalis* collected in the Triangle islands (Herrera, 1895, p.19), confirming at least one specimen in Mexico City. This may have come through Ferrari Pérez on the same expedition described by Ward in 1886. The Colección Nacional de Mamíferos lists one *Monachus tropicalis* in their collection (CNMA-24563), which would seem to be this specimen since the catalog entry notes that it is from "Cayo Triangulo" in Campeche (Cervantes, Vargas-Cuenca, Hortelano-Moncada, 2016, p.7). A 1917 book on the mammals of Yucatan published by the Departamento de Talleres Gráficos de la Secretaría de Fomento was illustrated with a photograph of a mounted male specimen (Figure 4) – its location is not identified, but it presumably was in the Mexican collection.

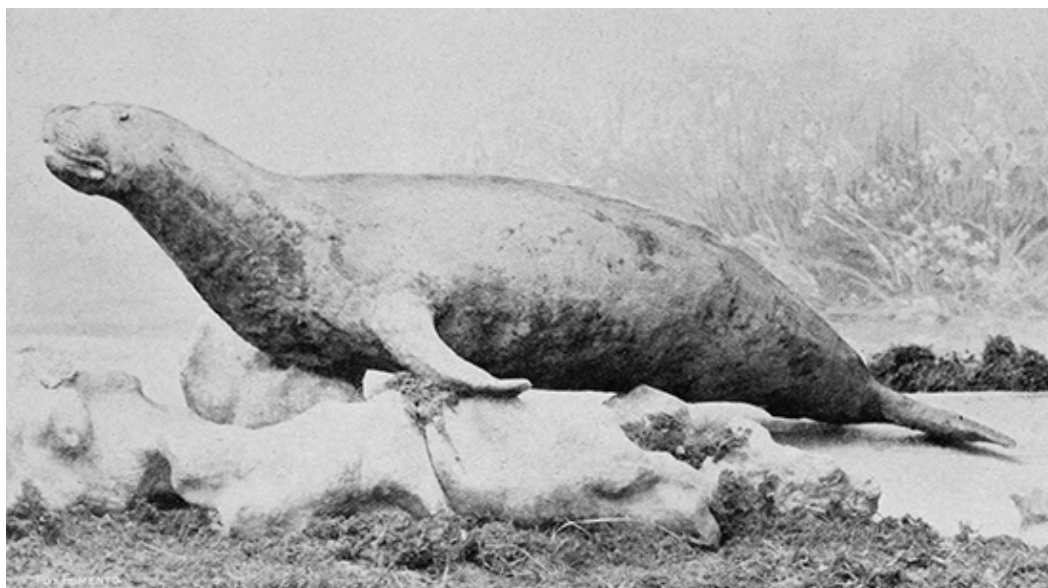


Figure 4: Photograph of a mounted male Caribbean monk seal; location unknown (Gaumer, 1917, plate XLIII)

The Ward specimens supplied a wealth of knowledge about the species, which had previously been known from only from two individuals. Joel Asaph Allen, who was curator of mammals and birds at the American Museum of Natural History, was able to describe the variability in the color and size of the species, as well as changes to the body that occurred with age for the first time (Allen, 1887). Scientific drawings of the Caribbean monk seals in the AMNH collection, including a reconstruction of a family group based on the specimens and behavioral descriptions, were included in an article written in 1887 and published in 1890 by the museum (Figure 5). A photograph of a mounted male Caribbean seal specimen collected by Ward in 1886 in the AMNH collection was published in 1924 (Figure 6). It appears that the specimen may have been intended to go on display in the Hall of Ocean Life, which was under construction at the time (Lucas, 1924), but later guidebooks of the displays do not include it. A photograph of one of the mounted specimens collected by Ward was reproduced in his 1887 article in *The American Naturalist*, although it is not known which of his museum specimens it depicts (Figure 7).



Figure 5: Reconstruction of a family group of Caribbean monk seals (Allen, 1890, plate I)



Figure 6: Photograph of a mounted male Caribbean monk seal specimen in the American Museum of Natural History collection (Lucas, 1924, p.592)



Figure 7: Photograph of a mounted Caribbean monk seal specimen collected by Henry L. Ward in The Triangles, Mexico (Ward, H.L., 1887, plate XII)

Collecting the Caribbean monk seal was bound up in scientific curiosity and a desire to understand the natural world in the nineteenth century. The same year as the Ward/Ferrari Pérez expedition to bring back monk seals for museums, the Smithsonian financially supported expeditions to collect American bison because this animal was so rare (Shell, 2004). Like the monk seal, the bison's increasing scarcity only made it more desirable for natural history collections. In her analysis of William T. Hornaday, who led the expedition, Hanna Rose Shell (2004, p.95) concluded that he "embraced the notion that he himself, on behalf of the National Museum, should kill some of the last wild buffalo in order to save, which is to say embody, its memory in corporeal form". Hornaday was afraid that "by the time the museum-builders of the world awake to the necessity of securing good specimens of all these [referring to a list which included the West Indian seal] it may be too late to find them," therefore he urged immediate collecting expeditions (Hornaday, 1894, p.1). The same could be said of Elliot, Ward, and Ferrari Pérez: they understood their actions as preserving the memory of the monk seals rather than bringing about their erasure, even though that is precisely what happened.

Better alive or dead?

Catching, keeping, and exhibiting live Caribbean monk seals was much more challenging than bringing back dead bodies. Ward's group took one young seal (apparently the suckling) back with them; they kept it in captivity at Campeche, Mexico, for a week or so before it died of starvation. Another small seal had been captured by another hunting party at the end of November, and appears to have lived slightly longer (Ward, H.L., 1887, p.262-263). These amateur attempts at keeping seals were soon displaced by professional efforts.

The first live Caribbean monk seals exhibited in zoological collections appeared in 1897 after an expedition to the Triangles encountered about thirty animals and captured some live specimens (New York..., 1901). Zoos were able to acquire these monk seals through E.E. Saunders & Co., a maritime fishing company in Florida (Mann, 1930, p.124). The Zoological Society of Philadelphia acquired two young individuals in May 1897 and a third in September; unfortunately, they "were induced to take food with difficulty and in small quantity, and they lived but a short time" (Zoological..., 1898, p.9). Two of their disarticulated skeletons were given to Academy of Natural Science of Philadelphia (Academy..., 1898, p.558). The National Zoological Park in Washington DC also took in a male and female *Monachus tropicalis* which were captured on May 11, 1897; they were documented as being in the zoo on June 30, 1897, but must have died shortly thereafter (Anonymous, 1897; Baker, 1898, p.60). In late July 1897, the bodies of those two seals made their way into the Smithsonian collection (USNM 83711, 83712, A49607 and A49608). All of these examples lived a very short time, indicating the lack of care available for them.

The New York Aquarium had slightly better success keeping the animals alive. This institution was founded in 1896 by the City of New York, and became part of the New York Zoological Society in 1902. Two monk seals captured in the Saunders 1897 expedition to The Triangles lived in the New York Aquarium; one of them survived five

and a half years, 1897 to 1903, while the other lived just over two years (New York..., 1901; Townsend, 1904, 1906). The aquarium staff recognized that “considering the conditions under which seals have to be kept in the Aquarium and the limited space that can be allowed such active animals, the specimen lived about as long as could be expected” (New York..., 1901, p.83). Several years later, the aquarium once again had monk seals: one adult and three year-old individuals arrived on June 14, 1909, although one of the young ones died the day after arrival (Townsend, 1909). When another of the younger individuals died in April 1911, the body was given to the Harvard museum via the American Museum of Natural History (MCZ 8605). Two images of the adult, a young female, and a young male were published in 1910 in the *Bulletin of the Zoological Society of New York*, which the Society remarked “represent so far as we know the only ones in existence of the living animal” (New York..., 1910, p.644; Figure 8). The same image of the adult was reprinted in the aquarium’s picture book *Inmates of the Aquarium* (New York..., 1916, p.16).

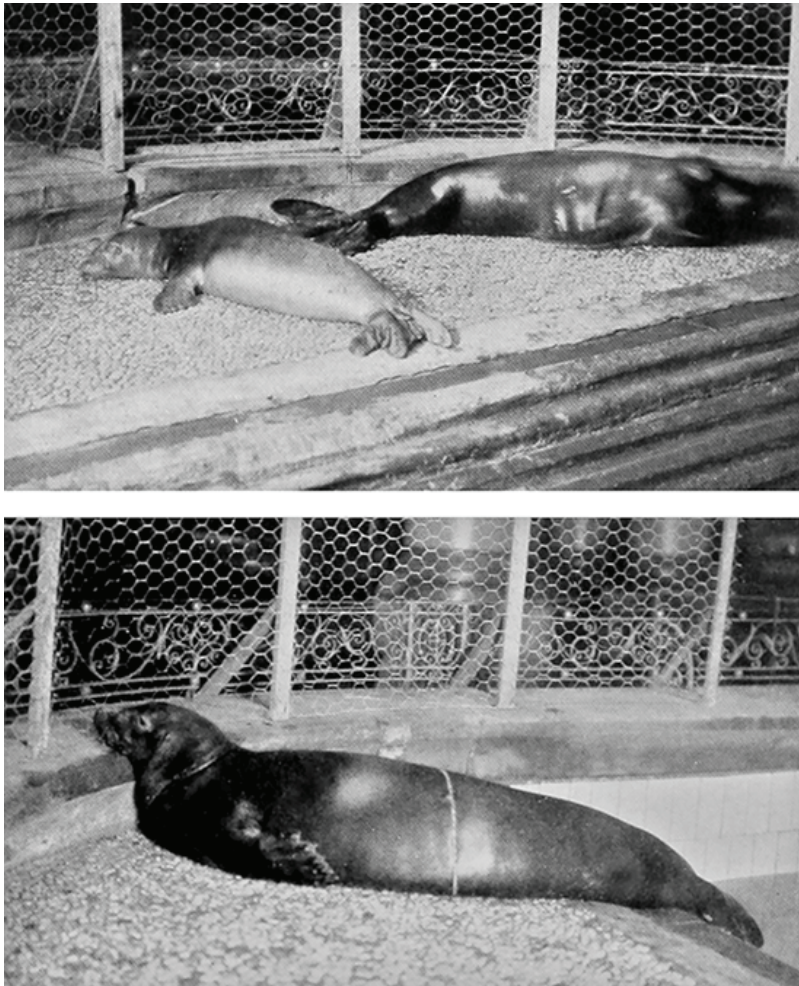


Figure 8: Photographs of the last live Caribbean seals kept at the New York Aquarium (New York..., 1910, p.644-645)

In spite of the claim by the Zoological Society of having the only photographs of live monk seals, there were actually some photographs of wild Caribbean monk seals taken during a museum collection hunt in 1900. Edward Alphonso Goldman and Edward William Nelson of the United States Fish and Wildlife Service took an expedition to the Triangle islands during June 18-23, 1900 to gather “specimens of the rare tropical seal *Monachus tropicalis*” and “in quest of these animals we were very successful” (Goldman, 1951, p.102). This was a defined scientific mission with the goal of bringing back substantial numbers of Caribbean monk seal specimens for the Smithsonian National Museum of Natural History collection. Nelson’s field notes from the expedition survive and have been transcribed by Adam and Garcia (2003). A photograph album in the Smithsonian collection (Smithsonian Institution Archives, RU 007364, Box 36, Folder 01-02) includes seven images taken during the Caribbean monk seal hunt as part of the expedition’s documentation. The photographs have faded, but show seals lying in shallow water on the beach at the transition between sand and rocks, and a group of seals swimming/wading with their heads above water (Figure 9). Nelson wrote that when killing seals in a group onshore, “the survivors always floundered into the water in a wild panic for some time swimming back and forth near shore raising their heads high out of water and watching us curiously as we were skinning their companions” (quoted in Adam, Garcia, 2003, p.302). The photographs of seals swimming apparently document this behavior. One image shows a team of four hunters dragging in a (dead) seal from the shallows. Just as Ward had done earlier, Nelson described the seals, which would lie “in a lethargic sleep,” as “very harmless creatures” behaving with “sluggish carelessness” and “stupidity” (quoted in Adam, Garcia, 2003, p.300-302). These ascribed personality traits likely made the party feel justified in its hunting tactics.

Nelson noted that the seals were “much less numerous than they were reported to be by men at Campeche who have visited the Triangles to kill them for oil during the past few years” (quoted in Adam, Garcia, 2003, p.300). During his expedition he saw about 75 seals, and the crew killed about half of them. He understood the potential extinction implications, noting “should the sealers again visit the islands it is possible that all of the survivors will be killed” (quoted in Adam, Garcia, 2003, p.300), but it did not stop him from this mission.

Thirty-five skulls and skins of the monk seals killed by the Goldman/Nelson expedition made their way into the Smithsonian collection. Some of these were mounted, and others prepared only as study skins and skeletal remains. Together, the Smithsonian NMNH houses the largest collection of *Monachus tropicalis*: 44 specimens, most of which came from the Goldman/Nelson expedition (Scheel et al., 2014).

While there were a few attempts to put live Caribbean monk seals on display for the public, these were always short lived. In death, their bodies joined those of their compatriots collected during expeditions such as the Goldman/Nelson trip in 1900. As lives were erased and they disappeared from zoos and aquariums, an eternal death in the museum offered a possibility to keep their memory alive.



Figure 9: Photographs in album by Edward William Nelson showing wild Caribbean monk seals on the Triangle islands during a seal hunt, June 1900. Mounted in an album documenting the expedition (reproduced with permission of Smithsonian Institution Archives)

The end for the Caribbean monk seal

According to scientist George F. Gaumer, who specialized in the biology of the Yucatan and wrote a report in Spanish about Yucatan mammals, some fisherman caught about 200 monk seals in the Triangle islands in January 1911, leaving “very few alive” (Gaumer, 1917, p.245). It does not appear that these animals became museum specimens. The mass killing led Gaumer to conclude that the species was likely already extinct when he was writing in 1917.

There are, however, two specimens in museums dated after 1917. The California Academy of Sciences has a skeletal specimen (CAS MAM 4978) taken from the Triangle islands on 26 November 1923, and there is a *Monachus tropicalis* skull and skeletal remains in the mammal collection of the Field Museum in Chicago, USA, which has a collection date of August 18, 1951. The Field Museum specimen was collected by L.P. Woods, who was a curator in the Department of Fishes, and the location is given as “Campeche Banks, East Triangle Key.” Woods had collected specimens as part of a US Fish and Wildlife Service exploration

cruise in the gulf of Mexico. The Caribbean monk seal bones (not live individuals) were discovered on the Campeche Bank reefs when his ship was forced to shelter from a storm there (Woods, Feb. 1953).

Records of Caribbean monk seal sightings become fewer and farther between after Gaumer's observations: in a survey of monk seal records as of that time King (1956, p.216) notes a few taken into captivity and a handful killed in the first half of the 1900s, along with only a few sightings of individuals. Despite these infrequent positive records, King concluded that "it seems likely that a remnant of this species is still living" (p.218). Because of the problem of proving extinction – just because people have not seen a species where they have looked does not definitively mean it is no longer alive anywhere – scientists continued to hold out hope that individuals were still alive (for this argument about extinction, see Jørgensen, 2017).

In March 1973, US Fish and Wildlife marine mammal expert Karl Kenyon conducted an extensive aerial survey of the monk seal's region and found no evidence of them. Based on the ubiquitous human presence of fishermen in the region and the lack of sightings, he concluded that the species had been extinct since the early 1950s (Kenyon, 1977). Yet this assessment was slow to make it into policy, and hope of finding seals continued. The species was listed as endangered in 1979 under the US Endangered Species Act (Marine..., 1986). In the five-year review of this listing in 1985, the National Marine Fisheries Service (NMFS) concluded that the species was extinct and recommended it be removed from the endangered list. Yet the Marine Mammal Commission's Working Group on Endangered Species concluded that "although prospects for the species continued existence are exceedingly small, there remains a faint hope that some animals may still survive" (Marine..., 1986, p.99). They still wanted further investigation of unconfirmed sightings of a seal in late 1984/early 1985 near Haiti, and funded C.A. Woods of the Florida State Museum to interview fishermen and other residents in 1985 (p.16). Woods's report, which was delivered in 1986, identified one credible sighting of a seal, although the type of seal (or sea lion) could not be determined (Marine..., 1987, p.113). Based on this data, on February 12, 1986 the Commission wrote to the NMFS and recommended they not change the seal's endangered status; the NMFS agreed, deciding to leave the species on the endangered list and re-examine the status in five years (Marine..., 1987).

The International Union for the Conservation of Nature (IUCN) had evaluated the Caribbean monk seal as "very rare" in 1965 followed by "Endangered" in 1982, then "Extinct?" in 1986, even though the NMFS had still classified it as endangered. The question mark was finally removed in 1994, placing the species definitively onto the extinct list (Lowry, 2015). But the NMFS continued to find evidence of seal sightings, including during interviews with fisherman in northern Haiti and Jamaica in 1997 (Boyd, Stanfeld, 1998). These sightings were not scientifically confirmed, and finally in March 2008 the NMFS ruled that *Monachus tropicalis* was extinct, and it was removed from the US endangered species list (NMFS, Mar. 2008; United..., 28 Oct. 2008). The loss of the Caribbean monk seal was complete.

The erasure of a species?

While collecting species exemplars is not the only cause of extinction and must be seen within the larger context of hunting and disturbance, museums and personal naturalist collectors are not innocent in extinction histories, as Gísli Pálsson (2020) has argued in the case of the great auk. Natural scientists urged the addition of Caribbean monk seals to their collections as objects of study. This species was known to be rare and previously understudied. While there is no doubt that having individual bodies in natural history collections is vital to determining the taxonomic status of species (Gutiérrez, Pine, 2017) – and the remnants of Caribbean monk seals collected over 100 years ago are still being used for modern genomic taxonomic studies (Scheel et al., 2014) as well as useful for charting changes in species numbers over time (Shaffer, Fisher, Davidon, 1998) – one has to ask whether or not this was worth the cost. The rush to quickly collect specimens in large numbers by the Ward/Ferrari Pérez and Goldman/Nelson expeditions within 14 years of each other must have taken a toll on the overall numbers of an already scarce animal. These actions would have significantly impacted the next generation of seals, especially since the collectors had no regard for pregnant females or young. Collecting specimens of a species with small numbers magnifies the risk of extinction (Minteer et al., 2014). Even in cases where species are abundant, collectors need to grapple with the ethics of inflicting death, even if in the name of a “good” cause (Haberman, 2015). The museum practices that supported the large-scale killing of the Caribbean monk seal helped ensure its erasure from the wild.

The recognition of non-human extinction as something that could in fact happen is historically situated in modernity (Barrow, 2009; Jones, 2014), and needs to be grappled with as a product of our Anthropocene age. As recognition of the human effects on the Earth’s large-scale processes has come to be acknowledged via the Anthropocene concept, one future function of nature-focused museums is to “become resources to illuminate the meaning and implications of the Anthropocene” (Koster, Dorfman, Nyambe, 2018, p.30). Because museums and galleries have a “multi-layered relationship with space and time,” they are ideal venues for creating Anthropocene narratives that are both planetary and local (Möllers, 2015).

Extinction narratives are part of this Anthropocene story. The mass extinction of our times represents more than death and irreversible loss – it is also bound up in the production, management, and monetization of certain forms of life and favoring certain iconic species over “unloved” others (Mitchell, 2016). Hispanic studies scholar Lizabeth Paravisini-Gebert (2014, p.353) has remarked that the extinction of the Caribbean monk seal, along with other species such as Haiti’s Creole pig, are “instances of environmental trauma that remain as cautionary tales of what environmental mismanagement has wreaked in Caribbean societies.” A museum providing space for species’ extinction stories that are intertwined with the museum’s own is a step toward multispecies justice (Guasco, 4 Aug. 2021). Extinction stories in museums that deploy a posthumanist gaze (O’Key, 2021) have the potential to raise awareness of the connections between humans and the non-human,

and confront historical complicities in extinction. Museums need to take on the grand environmental challenges that they have been complicit in.

We might want to take comfort in the fact that at least the Caribbean monk seal does survive partially through their bodies, which continue to live on in a dead state in museums as knowledge providers. But this comfort is fleeting considering the sad state of many of these last vestiges of the extinct. The Harvard MCZ database provides a glimpse of the condition of two of the Caribbean monk seals collected in 1886. A note from November 2010 indicates that the condition of mounted skin 6520 is “good, but fragile. Left hind leg fell off, labeled and placed in a cloth sack” (MCZBASE, 2010). In a note from 2018, the other mounted skin in the Harvard collection “was found on B4 floor of Northwest Building with no number. It was determined through process of elimination that this specimen is either MCZ 6520 or MCZ 6579. Due to the condition of each mount reported in the database (see MCZ 6520 for condition of flippers), it was determined that the specimen is MCZ 6579” (MCZBASE, 2018). These century-old bodies are falling apart, mislabeled, left on the floor. Their afterlives continue the violence to which their bodies were subjected.

The Harvard Natural History Museum is, however, the only museum I have found that has recently had a Caribbean monk seal on public display. A guide to the museum from 1936 noted that the “almost, if not quite, extinct” Caribbean monk seal on display in the South America Room was “very rare in collections” (Harvard MCZ..., 1936, p.42). A specimen (this would appear to be MCZ 6579 since it has flippers in place) was displayed until about 2017 in a case with New World monkeys. Even though many of the Caribbean monk seal specimens are taxidermy preparations that have been stuffed and mounted for display, all except this one are locked away in storage. While this may mean that the irreplaceable bodies degrade more slowly in the absence of light and temperature fluctuations, it also means that they are kept out of the view of people who could be seeing and hearing their history. The Caribbean monk seal is not only out of sight, it is out of mind. Museums have failed to tell its story.

While historical images of the Caribbean monk seal exist, they have never before been gathered in one place. This is the first article to do so, and it is hoped that this, combined with a history of the specimens in museums, is a step toward a new future for the history of the Caribbean monk seal. Hannah Stark (2018, p.75) has argued that the visual culture of extinct specimens, like a Tasmanian thylacine pup she examined, “is extremely important, as the access we have to them is often through this medium ... Visual representations thus have significant agency within how these species are remembered...” Perhaps by bringing together the images of monk seals created when these animals still swam in ocean waters, a new remembrance can begin to take shape in which the seal is an active participant.

These images stress that how we see the Caribbean monk seal is mediated by scientific communication. All the available historic images are found in scientific contexts: the drawings and photographs of stuffed specimens illustrate scientific journal articles, the expedition photos were scientific documentation of the journey, and the photographs of the aquarium seals were published in a popular scientific magazine. Science and scientific knowledge is the vehicle for knowing *Monachus tropicalis*. Yet this scientific gaze is not

neutral – it is instead implicated in the death and eventual extinction of the object which it purports to hold dear.

Most of the images are heavily dependent on taxidermy preparation: they are either photographs of or drawings based on stuffed specimens. As Rachel Poliquin (2008) has argued, taxidermy cannot be read as natural nor understood as mute skins. The monk seal images gathered here can be read in the same manners Poliquin proposes for taxidermy in general: descriptive, biographical, cautionary and experiential. The descriptive reading of the images is one that focuses on the biological materiality of the Caribbean monk seal. Looking at the taxidermy mount photographs we get a sense of its body conformation, fur, and posture; looking at the expedition photographs we see biological behaviors of breeding and fleeing danger. The biographical reading focuses on the movement of the image (and the specimen it contains) over time, through the hands of collectors, institutions, and publications. Each remaining Caribbean monk seal has an individual and historical story with places and dates; they are not just representatives of a species, but rather individuals with a life history. The cautionary reading focuses on the destruction and violence of extinction. The unappealing blotches of skin on a taxidermy mount (Figure 6) or the dragging of an animal corpse (Figure 9) remind the viewer of the brokenness of the bodies on display. The experiential narrative focuses on the encounter with the animal. These images can give us insight into prior encounters, the embodied aura of the dead, even if today we are unable to encounter a physical Caribbean monk seal unless we are lucky enough to visit Harvard's museum or some backroom storage where these specimens are kept.

By telling the story of the Caribbean monk seal, this article has attempted to counter its erasure and call for new attention to the role of museums in its loss. The memory of *Monachus tropicalis* deserves to be rewritten into those natural history museums that hold the remnants of this species, because its life and extinction are bound up with natural history museums and their practices.

ACKNOWLEDGEMENTS

This research was funded by the Research Council of Norway as part of the project "Beyond Dodos and Dinosaurs: Displaying Extinction and Recovery in Museums" (project no.283523). Thanks to archivist Heidi Stover for assistance locating the Nelson photographs in the Smithsonian Archives.

NOTES

¹ Scheel et al. (2014) have done a genetic study of monk seals and concluded that the monk seals of the New World (those in the Hawaiian islands and Caribbean) should be in a separate genus from the monk seal of the Mediterranean. They labelled the genus *Neomonachus* (to signify New + *Monachus*), in contrast with the *Monachus* of the Mediterranean. This change has not yet been picked up widely.

² The fact that Gray discussed two different seals in the same publication in 1849 has led to much confusion about which species are synonyms. As noted by Scheel et al. (2014), *Cystophora antillarum* should be considered a synonym of *Cystophora cristata* (the hooded seal), not a synonym for the monk seal.

³ This information was given to the author in personal correspondence with Principal Curator Richard Sabin of the Natural History Museum.

⁴ There is an ongoing documentation project about Ward's Natural Science Establishment called Searching for Ward's, available at: <https://wardproject.org>.

REFERENCES

- ACADEMY of Natural Sciences. *Proceedings of the Academy of Natural Sciences of Philadelphia 1897*. Philadelphia: Academy of Natural Science, 1898.
- ADAM, Peter; GARCIA, Gabriela G. New information on the natural history, distribution, and skull size of the extinct (?) West Indian Monk Seal, *Monachus tropicalis*. *Marine Mammal Science*, v.19, n.2, p.297-317, 2003.
- ALBERTI, Samuel J.M.M. Objects and the museum. *Isis*, v.96, n.4, p.559-571, 2005.
- ALLEN, Joel Asaph. The West Indian Seal (*Monachus tropicalis* Gray). *Bulletin of the American Museum of Natural History*, v.2 (1887-1890), p.1-34, 1890.
- ALLEN, Joel Asaph. The West Indian Seal. *Science*, v.ns-9, n.206, p.35, 1887.
- ALLEN, Joel Asaph. *History of North American Pinnipeds*. Washington: Government Printing Office, 1880.
- ANONYMOUS. Scientific notes and news. *Science*, v.5, n.127, p.873, 1897.
- BAISRE, Julio A. Shifting baselines and the extinction of the Caribbean Monk Seal. *Conservation Biology*, v.27, n.5, p.927-935, 2013.
- BAKER, Frank. Report of the Superintendent of the Park. In: *Annual report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and conditions of the Institution to July, 1897*. Washington: Government Printing Office, 1898. p.56-65.
- BARROW, Mark. *Nature's ghosts: confronting extinction from the age of Jefferson to the Age of Ecology*. Chicago: University of Chicago Press, 2009.
- BOYD, I.L.; STANFELD, M.P. Circumstantial evidence for the presence of monk seals in the West Indies. *Oryx*, v.32, n.4, p.310-316, 1998.
- CATESBY, Mark. *The natural history of Carolina, Florida and the Bahama islands: containing the figures of birds, beasts, fishes, serpents, insects, and plants*, v.1. London: [printed by author], 1731.
- CERVANTES, Fernando A.; VARGAS-CUENCA, Julieta; HORTELANO-MONCADA, Yolanda. An overview of the Mammal Collection of Instituto de Biología, Universidad Nacional Autónoma de México. *Journal of Natural Science Collections*, v.4, p.4-11, 2016.
- CUNDALL, Frank. Richard Hill. *The Journal of Negro History*, v.5, n.1, p.37-44, 1920.
- DAMPIER, William. *Voyages and descriptions*, v.2. In *three parts*... London: [printed for James Knapton], 1705.
- DANERI, Gustavo A.; DE SANTIS, Luciano J.M. Ejemplar de la especie extinta *Monachus tropicalis* (Carnivora, Phocidea) en El Museo de la Plata (Argentina). *Mastozoología Neotropical*, v.9, n.1, p.59-63, 2002.
- DE VOS, Rick. Provocations from the field: extinction, encountering and the exigencies of forgetting. *Animal Studies Journal*, v.6, n.1, p.1-11, 2017.
- DUNLAP, Thomas R. Sport hunting and conservation, 1880-1920. *Environmental Review*, v.12, n.1, p.51-60, 1988.
- ELLIOTT, Henry W. The Monk-seal of the West Indies, *Monachus Tropicalis* Gray. *Science*, v.3, n.72, p.752-753, 1884.
- GAUMER, George F. *Monografía de los mamíferos de Yucatan*. Ciudad de México: Departamento de Talleres Gráficos de la Secretaría de Fomento, 1917.
- GOLDMAN, Edward Alfonso. *Biological investigations in México*. Washington: Smithsonian Institution, 1951.
- GOSSE, Philip Henry. *A naturalist's sojourn in Jamaica*. London: Longman, Brown, Green, and Longmans, 1851.
- GRAY, John Edward. *Hand-list of seals, morses, sea-lions and sea-bears in the British Museum*. London: British Museum, 1874.
- GRAY, John Edward. *Catalogue of seals and whales in the British Museum*. London: [British Museum] Trustees, 1866.
- GRAY, John Edward. Notes on seal (Phocidae), including the description of a new seal (*Halicyon richardii*) from the west coast of North America. *The Annals and Magazine of Natural History*, v.14, p.304-311, 1864.
- GRAY, John Edward. *Catalogue of the specimens of Mammalia in the collection of the British Museum, Part II: seals*. London: [British Museum] Trustees, 1850.
- GRAY, John Edward. On the variation in the teeth of the crested seal, *Cystophora Cristata*, and on a new species of the genus from the West Indies. *Proceedings of the Zoological Society of London*, n.17, p.91-93, 1849.
- GUASCO, Anna. "As dead as a dodo": extinction narratives and multispecies justice in the museum. *Environment and Planning E: Nature and Space*, v.4, n.3, p.1055-1076, 2021.

GUTIÉRREZ, Eliécer E.; PINE, Ronald H. Specimen collection crucial to taxonomy. *Science*, v.355, n.6311, p.1275, 2017.

HABERMAN, Karen L. On the significance of small dead things. *Journal of Natural History Education and Experience*, v.9, p.8-12, 2015.

HARVARD MCZ Staff. *Notes concerning the history and contents of the Museum of Comparative Zoology*. Cambridge, MA: Harvard, 1936.

HEISE, Ursula. *Imagining extinction: the cultural meaning of endangered species*. Chicago: University of Chicago Press, 2016.

HERRERA, Alfonso L. *Catálogo de la Colección de Mamíferos del Museo Nacional*. Ciudad de México: Museo Nacional, 1895.

HORNADAY, William T. *Taxidermy and zoological collecting*. New York: Charles Scribner's Sons, 1894.

JAMAICA Society of Arts. Catalogue of articles exhibited in Kingston, Jamaica, on the 17th and 19th February, 1855, by the Jamaica Society of Arts. In: *Transactions of the Jamaica Society of Arts, from Dec. 1854 to Dec. 1855, Inclusive*, v.1. Kingston, Jamaica: R.J. De Cordova, 1856. p.28-29.

JONES, Ryan Tucker. *Empire of extinction: Russians and the North Pacific's strange beasts of the sea, 1741-1867*. Oxford: University of Oxford Press, 2014.

JØRGENSEN, Dolly. *Recovering lost species in the Modern Age: histories of longing and belonging*. Cambridge, MA: MIT Press, 2019.

JØRGENSEN, Dolly. Presence of absence, absence of presence, and extinction narratives. In: Head, Lesley et al. (ed.). *Nature, temporality and environmental management*. Abingdon: Routledge, 2017. p.45-58.

KENYON, Karl. Caribbean Monk Seal extinct. *Journal of Mammalogy*, v.58, n.1, p.97-98, 1977.

KING, Judith. The Monk Seals (Genus *Monachus*). *Bulletin of the British Museum (Natural History)*, v.3, n.5, p.204-256, 1956.

KOHLSTEDT, Sally Gregory. Henry A. Ward: the merchant naturalist and American museum development. *Journal of the Society for the Bibliography of Natural History* (now *Archives of Natural History*), v.9, n.4, p.647-661, 1980.

KOSTER, Emlyn; DORFMAN, Eric; NYAMBE, Terry Simioti. A holistic ethos for nature-focused museums in the Anthropocene. In: Dorfman, Eric (ed.). *The future of natural history museums*. Abingdon: Routledge, 2018. p.29-48.

LOWRY, Lloyd. *Neomonachus tropicalis*. The IUCN Red List of Threatened Species: e.T13655A45228171, 2015. Available at: <https://www.iucnredlist.org/species/13655/45228171>. Access on: 14 Sep. 2021.

LUCAS, Frederic A. The seal collection. *Natural History*, v.24, n.5, p.589-593, 1924.

LUCAS, Frederic A. Animals recently extinct or threatened with extermination, as represented in the collections of the US National Museum. In: *Annual report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the institution for the year 1889. Report of the National Museum*. Washington: Government Printing Office, 1891. p.609-649.

MANN, William M. *Wild animals in and out of the zoo*. Washington, DC: Smithsonian Institution Series, 1930.

MARINE Mammal Commission. *Annual report of the Marine Mammal Commission, Calendar Year 1986*. Washington, DC: Marine Mammal Commission, 1987.

MARINE Mammal Commission. *Annual report of the Marine Mammal Commission, Calendar Year 1985*. Washington, DC: Marine Mammal Commission, 1986.

MCZBASE: The Database of the Zoological Collections. Museum of Comparative Zoology/Harvard University, 2018. Available at: <https://mczbase.mcz.harvard.edu/guid/MCZ:Mamm:6579>. Access on: 24 Oct. 2021.

MCZBASE: The Database of the Zoological Collections. Museum of Comparative Zoology/Harvard University, 2010. Available at: <https://mczbase.mcz.harvard.edu/guid/MCZ:Mamm:6520>. Access on: 24 Oct. 2021.

MESTRE, A. Homenaje a Poey: datos biograficos. *Memorias de la Sociedad Cubana de Historia Natural Felipe Poey*, v.1, p.3-8, 1915.

MINTEER, Ben A. et al. Avoiding (re)extinction. *Science*, v.344, n.6181, p.260-261, 2014.

MITCHELL, Audra. Revitalizing laws, (re)-making treaties, dismantling violence: indigenous resurgence against 'the sixth mass extinction.' *Social and Cultural Geography*, v.21, n.7, p.909-924, 2020.

MITCHELL, Audra. Beyond biodiversity and species: problematizing extinction. *Theory, Culture, Society*, v.33, n.5, p.23-42, 2016.

MÖLLERS, Nina. Museums and the Anthropocene: reconfiguring time, space, and human experience. In: Möllers, Nina; Schwägerl, Christian; Trischler, Helmuth (ed.). *Welcome to the Anthropocene: the earth in our hands*. Munich: Deutsches Museum, 2015. p.108-112.

NEW YORK Zoological Society. *Inmates of the aquarium: a book of views of the New York Aquarium*. New York: New York Zoological Society, 1916.

NEW YORK Zoological Society. Rare tropical seals. *Zoological Society Bulletin*, n.38, p.644-645, 1910.

NEW YORK Zoological Society. The West Indian Seal. *Zoological Society Bulletin*, n.6, p.83, 1901.

NIXON, Rob. *Slow violence and the environmentalism of the poor*. Cambridge, MA: Harvard University Press, 2013.

NMFS, National Marine Fisheries Service. Endangered Species Act: 5-year review Caribbean Monk Seal (*Monachus tropicalis*), Mar. 2008.

O'KEY, Dominic. Why look at taxidermy animals? Exhibiting, curating and mourning the Sixth Mass Extinction Event. *International Journal of Heritage Studies*, v.27, n.6, p.635-653, 2021.

PÁLSSON, Gísli. *Fuglím sem gat ekki flogið*. Reykjavík: Mál og menning, 2020.

PARAVISINI-GEBERT, Lizabeth. Extinctions: chronicles of vanishing fauna in the colonial and postcolonial Caribbean. In: Garrard, Greg (ed.). *The Oxford handbook of ecocriticism*. Oxford: Oxford University Press, 2014. p.341-358.

POLQUIN, Rachel. The matter and meaning of museum taxidermy. *Museum and Society*, v.6, n.2, p.123-134, 2008.

ROBERTS, William. *An account of the first discovery, and natural history of Florida*. London: T. Jefferys, 1763.

ROSE, Deborah Bird; VAN DOOREN, Thom; CHRULEW, Matthew. Introduction: telling extinction stories. In: Rose, Deborah Bird; Van Dooren, Thom; Chrulw, Matthew (ed.). *Extinction studies: stories of time, death, and generations*. New York: Columbia University Press, 2017. p.1-17.

SCHEEL, Dirk-Martin et al. Biogeography and taxonomy of extinct and endangered monk seals illuminated by ancient DNA and skull morphology. *ZooKeys*, v.409, p.1-33, 2014.

SEPKOSKI, David. *Catastrophic thinking: extinction and the value of diversity from Darwin to*

the Anthropocene. Chicago: University of Chicago Press, 2020.

SHAFFER, H. Bradley; FISHER, Robert N.; DAVIDSON, Carlos. The role of natural history collections in documenting species declines. *Trends in Ecology and Evolution*, v.13, n.1, p.27-30, 1998.

SHELL, Hanna Rose. Skin deep: taxidermy, embodiment, and extinction. In: Levinton, Alan. *The past, present and future of natural history: Proceedings of the California Academy of Sciences*. San Francisco: California Academy of Sciences, 2004. p.88-112.

SHIPLEY, Arthur Everett. "J." *A memoir of John Willis Clark*. London: Smith, Elder, 1913.

SLOANE, Hans. *A voyage to the Islands Madera, Barbados, Nieves, S. Christophers and Jamaica...*, v.1. London: B.M., 1707.

SOLLY, Edward. Untitled letter. In: *Transactions of the Jamaica Society of Arts, from Dec. 1854 to Dec. 1855, Inclusive*, v.1. Kingston, Jamaica: R.J. De Cordova, 1856. p.5.

STARK, Hannah. The cultural politics of mourning in the era of mass extinction: Thylacine specimen P762. *Australian Humanities Review*, v.63, p.65-79, 2018.

THERIAULT, Noah; MITCHELL, Audra. Extinction. In: Howe, Cymene; Pandian, Anand (ed.). *Anthropocene unseen: a lexicon*. Santa Barbara: Punctum, 2020.

TIMM, Robert M.; SALAZAR, Rosa M.; PETERSON, Andrew Townsend. Historical distribution of the extinct tropical seal, *Monachus tropicalis* (Carnivora: Phocidae). *Conservation Biology*, v.11, n.2, p.549-551, 1997.

TOWNSEND, Charles H. The West Indian Seal at the aquarium. *Science*, v.ns30, n.763, p.212, 1909.

TOWNSEND, Charles H. Capture of the West Indian Seal (*Monachus tropicalis*) at Key West, Florida. *Science*, v.ns23, n.589, p.583, 1906.

TOWNSEND, Charles H. Notes on certain Pinnipeds, with data respecting their present commercial importance. In: *Ninth annual report of the New York Zoological Society*. New York: Office of the Society, 1904. p.105-116.

TRUE, Frederick W. Report on the Department of Mammals in the US National Museum, 1889. In: *Annual report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the institution for the year 1889. Report of the National Museum*.

Washington, DC: Government Printing Office, 1891. p.349-355.

TRUE, Frederick W. Department of Mammals. In: *Annual report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the institution for the year 1883*. Washington: Smithsonian Institution, 1885. p.208-220.

TRUE, Frederick W.; LUCAS, Frederic Augustus. On the West Indian Seal (*Monachus Tropicalis*, Gray). In: Smithsonian Institution. *Annual report of the Board of Regents of the Smithsonian Institution showing the operations, expenditures, and condition of the institution for the year 1884, Part II*. Washington: Government Printing Office, 1885. p.331-338.

UNITED States Office of the Federal Register, *Federal Register*, v.73, n.209, p.63901-63906, 28 Oct. 2008.

VAN DOOREN, Thom. *Flight ways: life and loss at the edge of extinction*. New York: Columbia University Press, 2014.

WARD, Henry A. Carta del Señor Henry A. Ward. *Revista del Museo de la Plata*, v.1, p.145-151, 1890-1891.

WARD, Henry A. The West Indian Seal (*Monachus tropicalis*). *Nature*, v.35, n.904, p.392, 1887.

WARD, Henry L. Notes on the life-history of *Monachus Tropicalis*, the West Indian seal. *The American Naturalist*, v.21, p.257-264, 1887.

WARD'S NATURAL Science Establishment. Mammals of Central America, including Mexico and the West Indies, 1883. AW23 Ward (Henry Augustus) Papers (Rare Books, Special Collections and Preservation, River Campus Libraries, University of Rochester, Rochester, NY), Ward Project. Available at: <https://wardproject.org/items/show/948>. Access on: 8 Jan. 2021.

WOODS, Loren P. Research and exploratory fishing in Gulf of Mexico. *Chicago Natural History Museum Bulletin*, v.4, n.2, p.4-5, Feb. 1953.

ZOOLOGICAL Society of Philadelphia. *The twenty-sixth annual report of the Board of Directors of the Zoological Society of Philadelphia*. Philadelphia: Allen, Lane and Scott, 1898.

