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The 1956 Machris Brazilian Expedition:

A Vehicle for Scientific Discovery and Ecological Conservation

Anxious voices called to one another in a chaotic torrent of Portuguese and English as rain pummeled the expedition's unshielded campsite and threatened to undo over three months' worth of taxing fieldwork. Beneath a layer of water-proof canvas, scientists from the Natural History Museum of Los Angeles and the Museu Nacional do Brasil hurriedly packed the contents of their makeshift tables into watertight aluminum trunks, already brimming with thousands of zoological and botanical specimens. The unnaturally stilled menagerie of embalmed birds, pinned insects and stacked animal skins and pelts, waited to be loaded onto a tempest-tossed river boat before journeying from Rio de Janeiro to Los Angeles, where each specimen would be revived with a scientific afterlife. Among the thousands of collected specimens, lay sixty new species, from which a dozen would be named after the charismatic leaders of this 1956 Brazilian Expedition, Maurice and Paqueta Machris.

Scientists during the mid-twentieth century understood that humankind posed an existential threat to many of the world's most vulnerable species and their habitats. Prominent academic leaders and institutional figure heads believed that human activities would cause species biodiversity to plummet at unprecedented rates, damage entire ecological systems, and rapidly eliminate the living record of our delicately balanced planet. Jean Delacour, Director of the Natural History Museum of Los Angeles County, and an internationally renowned ornithologist, believed that it was urgent to establish the inventory of the world's wildlife as it

“was likely to be damaged by civilization in the near future.”¹ In response to this growing fear, Maurice and Paquita Machris embarked on a joint expedition with the Natural History Museum through the sun-soaked tropics of the Brazilian jungle to collect zoological and botanical specimens, anthropological artifacts, and photographic material for the museum’s growing research collections. The expedition aimed to preserve this world by gathering an “extensive collection of scientific specimens of birds, mammals, insects and plants native to the region,” and “photograph living examples of the above forms of life and... make a documentary motion picture of the itineraries and field activities of the expedition.”² In the midst of a global climate crisis that has already led to the loss of ninety-four percent of life in the American tropics, the work of these expeditionists has become an invaluable source for scientists and historians to understand biodiversity loss and ecological histories.

The 1956 Machris Brazilian Expedition played a key role in the world of natural history museums as it contributed to the growth, development, and distribution of scientific knowledge within various research fields across multiple institutions, acted as a vehicle for conservation and preservation, and helped enhance public understanding of and appreciation for the natural world through educational programs, exhibitions, and films. This expedition alone resulted in the collection of 50,000 insects, 6,500 birds, 230 mammals, and 1,200 different species of plant life, the discovery of over 60 new zoological and botanical species, a public exhibition of anthropological artifacts, seven educational documentaries and movies, and the creation of a new

¹ Jean Delacour, “The Machris Brazilian Expedition: General Account,” *Contributions in Science* vol. 1 no. 1, (1957): 3-11. <https://www.biodiversitylibrary.org/item/214421#page/7/mode/1up>.

² Brazilian Expedition Plans, 1956, NHM.ARC.0018, box 2, folder 11, items 07-11, Life Sciences Department Records, NHM Archives and Special Collections, Natural History Museum of Los Angeles County, Los Angeles, CA.

scientific journal called *Contributions in Science*. The academic contributions of this expedition, however, stretch far beyond the boundaries of this scientific institution and the tangible elements it amassed. The 1956 Machris Brazilian Expedition reveals the hidden histories of international museum networks, indigenous contributions to science, and technological and methodological advancements in field collection while providing insight into the effects of imperialism on social perceptions of expeditions and academic institutions during the mid-twentieth century.

For most of the nineteenth century, natural history museums were seen as passive protectors of biological and material collections. Though these institutions held thousands of objects in their possession, active scientific research primarily occurred outside the purview of curators who worked diligently to arrange their so-called “cabinets of curiosities” in neat taxonomic rows. Gradually, the influence of these institutions, and the curators therein, grew as object-based research turned these repositories of the natural world into primary sites of active scientific inquiry.³ Objects during the late nineteenth century were largely considered “sites of meaning and knowledge” in their own right, and, given that natural history museums were collectors of the world’s most interesting objects, many intellectuals began to think of these institutions “as a primary place where new knowledge about the world could be created and given order.”⁴ Natural history museums, now unconcerned with the inclusion of “duplicates” in

³ Meredith A. Lane, “Roles of Natural History Collections,” *Annals of the Missouri Botanical Garden* 83, no. 4 (1996): 536–45.

⁴ Sarah J. Chicone, and Richard A. Kissel, *Dinosaurs and Dioramas: Creating Natural History Exhibitions*, Routledge, 2016.

their collections, needed to expand the scope and size of their inventories as their importance to the scientific world increased.

The expenses associated with the creation and curation of active collections meant that scientific institutions depended almost exclusively on the goodwill of patrons, private collectors, and individual donors to fund their research interests, support field expeditions and finance the physical expansion of their collectanea. Natural history museums also heavily relied on the donations of amateur naturalists and volunteer curators to fill their growing research collections with zoological and botanical specimens from around the world. While some public institutions occasionally sent out small groups of scientists, curators and taxidermists to omnivorously gather specimens from local areas, the costs associated even with these minor field operations often exceeded the pittance budgets of most museums. The staff who engaged in these general-purpose expeditions operated on shoestring budgets and were rarely, if ever, compensated for their time and efforts. To help ease the burden of expeditionary costs, for themselves and their scientists, museums sought the patronage of affluent sponsors. The urban gentry who financially supplemented these scientific institutions already had a vested interest in the natural world and the world as hunting trips, luxury camping, and big-game safaris were popular forms of recreation for the middle class.⁵ Furthermore, many of these patrons already had established relationships with museum curators and taxidermists through their habitat group sponsorship, another. It seemed only natural that these two worlds should unite. The virtues of combining collecting expeditions with the leisure trips of patrons was not lost on curators. However, though many museums welcomed the interest and patronage of influential donors, staff deliberately

⁵ Robert E Kohler, *All Creatures: Naturalists, Collectors, and Biodiversity, 1850-1950*, Princeton: Princeton University Press, 2013.

avoided working with them on expeditions for fear that their roles would be reduced from collectors of all life to assistants of the wealthy.⁶ Patrons too, had little interest in the scientific aspects of field collecting, preferring instead that their donations be used to purchase plaques on habitat dioramas housing some large animal they shot while on safari. It would take a special amalgamation of scientific interest, outdoorsmanship and financial resources to extend these peculiar partnerships beyond the natural history museum and into the natural world.

During the mid-twentieth century, the Natural History Museum of Los Angeles County partnered with two scientifically inclined nature lovers to help revitalize their expedition program, increase the size of their research collections and preserve a record of the world for future generations. Maurice Machris, the son of a wealthy oil baron, and Paquita Machris, the daughter of an affluent real-estate tycoon, used their substantial resources to fund and facilitate international collecting expeditions throughout the global south, from the stoney cliffs of the Galapagos Islands to the rushing headwaters of the Kenyan savannah. There is no record of when the Machrises were officially introduced to NHMLA's (Natural History Museum of Los Angeles County) staff; however, articles published in 1953 indicate that early relations between the couple and the institution revolved around specimen donation and research collections. Maurice Machris appears in a press clipping discussing the 71st annual meeting of the American Ornithologists' Union being held at Hancock Auditorium at the University of Southern California, directly across the street from the museum in October of 1953. Over 350 ornithologists from leading universities and scientific organizations across North and South America attended the convention, including Jean Delacour, Director of the Natural History

⁶ Kohler, *All Creatures*, 115.

Museum of Los Angeles County.⁷ Specimens collected by Maurice and Paquita during an expedition to Kenya earlier that year were reportedly on display during the proceedings. Among them “an African crowned eagle, Africa’s largest bird of prey, whose favorite food is small monkeys, and the rare huge egg of an aepyornis, a mammoth flightless bird that stood from 10 to 12 feet tall and has been extinct for 1,000 years.”⁸ Though the pair had doubtless met before, since specimens donated to the NHMLA by the Machrises were on view, the presence of both Maurice Machris and Jean Delacour at this convention marked a turning point in their relationship. From this moment on, the kindred spirits of NHMLA’s scientists, curators and researchers were forever linked to Maurice and Paquita Machris.

The shared pleasures of outdoor field collecting, taxonomic discovery, and scientific inquiry were powerful binding forces that united the Machrises with curators at NHMLA. Though Maurice and Paquita Machris had participated in a number of safari-esque hunting trips over the years, their interest in the more scientific aspects of collecting set them apart from their contemporary counterparts. There existed among museum professionals a general feeling that commitment to expeditions for diorama specimens, both in the form of staff time and resources, had compromised commitment to scientific research.⁹ Scientists and research staff across the nation maligned what they saw as a direct challenge to scientific scholarship.¹⁰ While most museums were chastised for focusing too much on visitor engagement through the spectacle of the diorama, what some vocal critics called the “museums as Disneyland” approach, the NHM found a fine balance between collecting for scientific research and their diorama program. The

⁷ “Ornithologists Gather for Five Day Session,” *The Los Angeles Times*, October 31, 1953.

⁸ “Ornithologists Gather,” October 31, 1953.

⁹ Chicone and Kissel, *Dinosaurs and Dioramas*, 20.

¹⁰ Chicone and Kissel, *Dinosaurs and Dioramas*, 20.

Machrises, unlike other museum patrons who seemed more interested in habitat group specimens, mirrored this balancing act with their own expeditions. Maurice's presence at the annual meeting of the American Ornithologists' Union signals an as-of-yet unfulfilled yearning to converse with experts in the zoological fields he was interested in. Curators at the NHMLA likely offered a refuge from the mundane questions Maurice and Paquita Machris regularly fielded from their scientifically disinclined social circles. James Coop, a columnist from the Los Angeles Times, described a conversation in which he overheard a party guest jokingly ask, "What does a person wear in Africa?" This African safari-themed party celebrating the return of the Machrises from the aforementioned expedition to Kenya took place just a few days after Maurice attended the convention.

Following this event, whether a catalyst or by coincidence, the Machrises widened their social circles to include NHMLA's curators and scientists. As an amateur practitioner of taxonomic science, Maurice Machris was likely drawn to Jean Delacour, and other curators, for their expertise and access to research museums around the nation. Delacour astutely surmised that although NHMLA's administration provided a "means of keeping the museum in good order," funds for new acquisitions...depend largely upon the generosity of friends."¹¹ This mutually beneficial alliance, in which the Machrises gained access to scientific institutions and experts, and the museum's curators gained access to enthusiastic patrons, grew into a sincere partnership that combined the pleasures of working with friends, collecting specimens, and making taxonomic discoveries.

¹¹ Delacour, Brazilian General Account, *Contributions*, 3.

In general, museum patronage and expedition sponsorship greatly benefited taxonomic science as it “put more naturalists in the field, created more valuable natural history collections, and contributed more to our understanding of the world’s biodiversity than any system of patronage since the grand imperial voyages of the age of exploration.”¹² Despite the demands it put on curators, participation in field collecting expeditions allowed scientists to have more agency in selecting the specific specimens they wanted in their museum’s collections and in choosing which areas of the world they visited. It also allowed curators to transform their professional roles from keepers of collections to active collectors. Curators felt that it was important to address “sequence gaps” in their collections to give future scientists accurate representations of as many lifeforms as they could. Although the NHMLA was blessed with an impressive number of local biological specimens, Delacour noted that many regions of the world were still biologically unexplored and therefore severely underrepresented in museum collections. Additionally, despite the abundance of American species in many museums “west of Chicago,” only eastern museums could boast biological collections that rivaled those in Europe.¹³ Delacour believed that “Los Angeles, with its County Museum, [was] particularly well-placed to establish a primary collection” of the world’s flora and fauna on the west coast.¹⁴ In partnering with the Machrises, curators at the NHMLA gained access to an almost unlimited number of resources and funds to help accomplish this ambitious goal. Though their partnership extends beyond the preview of a single collecting trip, as it covers more than a decade’s worth of travels, one particular expedition stands out among the others as the most taxonomically beneficial to the sciences and the museum’s research collections.

¹² Kohler, *All Creatures*, 117.

¹³ Delacour, Brazilian General Account, *Contributions*, 3.

¹⁴ Delacour, Brazilian General Account, *Contributions*, 3.

The 1956 Machris Brazilian Expedition was unique among other NHMLA expeditions as it helped collect many of the world's vanishing zoological and botanical specimens for current and future generations of scientists. Delacour himself noted that no other expedition could "compare with the Brazilian expedition of 1956, which [was] among the widest in scope undertaken in recent years" by the museum. Since curators at the NHMLA were extensively involved in planning Machris funded expeditions, it is not unreasonable to believe that Delacour himself influenced many of the areas he and his curators visited, including the chosen region for the Brazilian expedition. The museum chose the immense territory of the Rio Tonantins, in the state of Goias, as it offered the best chance for useful work and the most zoological and botanical promise. Though it was improbable that any part of the world would still yield any sensational novelties in the way of vertebrates, many important insects and plants, no doubt, remained undiscovered.¹⁵ Furthermore, little of the distribution and variation of mammals, birds, reptiles, amphibians and fishes, in this area were accurately known. Delacour believed that it was "urgent to establish the inventory of its wildlife as it [was] likely to be damaged by civilization in the near future," echoing the concerns of prominent scientists before him.¹⁶ Frederic A. Lucas, Director of the American Museum of Natural History, held similar beliefs on the destruction wrought by man, once remarking that "it is not, perhaps, generally realized how extensive and how rapid are the changes that are taking place in almost the entire fauna of the world through the agency of man."¹⁷ Though changes have "perpetually taken place in the past through the operation of natural causes, and race after race of animals has disappeared from the globe," there was a distinct difference between the methods of nature and man, "that the extermination of

¹⁵ Delacour, Brazilian General Account, *Contributions*, 4.

¹⁶ Delacour, Brazilian General Account, *Contributions*, 4.

¹⁷ Mary A. Andrei, *Nature's Mirror: How Taxidermists Shaped America's Natural History Museums and Saved Endangered Species*, University of Chicago Press, 2020.

species by nature is ordinarily slow, and the place of one is taken by another, while the destruction wrought by man is rapid, and the gaps he creates remain unfilled.”¹⁸ For many scientists, preserving echoes of nature in their collections, and indeed the preservation of wildlife itself, was an intellectual duty to their fellow man. These beliefs highlight the complex roots of many institutions of culture and education, whose founders often regarded it as their mission to provide a defensive line against the deleterious effects of “civilization.”¹⁹

Natural history museums were obliged to collect, catalogue, and systematically survey every biological lifeform on the planet before it disappeared from people’s collective memories or was destroyed by human activity. The unsettled nature of the Rio Tocantins area was simultaneously enticing to scientists and urban developers.²⁰ Delacour declared that the region would “no doubt soon be heavily settled, just as similar areas to the south [had] been.”²¹ Progressive damage was already evident, as many areas had been widely burned to increase field size for grazing livestock. Plans to build a new federal capital there were also well underway.²² This unabated urban construction and agricultural activity went largely unchallenged, and in fact was encouraged, by the Brazilian government as standards for wildlife protection were less stringent during the mid-twentieth century. Since the 1960s, the concern over biodiversity loss has politically crystallized in the creation of “red lists,” catalogs of endangered species that are usually protected by legislation warning against the hunting or harvesting of specific animals,

¹⁸ Frederic A. Lucas, "Animals Recently Extinct or Threatened with Extermination, as Represented in the Collections of the U. S. National Museum," in *Report of the United States National Museum*, 1889, 609–649.

¹⁹ Andrei, *Nature's Mirror*, 13.

²⁰ Delacour, Brazilian General Account, *Contributions*, 4.

²¹ Delacour, Brazilian General Account, *Contributions*, 4.

²² Delacour, Brazilian General Account, *Contributions*, 4.

and against large-scale alteration of their habitats.²³ At the time of the 1956 Machris Brazilian expedition, no such legislation existed, though it is doubtful that any protective measures would be able to stand against the ravages of climate change. Scientists at the Natural History Museum of Los Angeles had no idea just how pernicious biodiversity loss would become in the near future, but they did understand that mankind posed an existential threat to the delicately balanced ecosystems of the world. Since only a few birds had been collected in the Rio Tocantins area, and there had been no ontological research, preserving as many lifeforms as they could from this region made sense to the museum's scientists. The specimens collected during this expedition, however, were not all destined for the NHM's progeny of scientists, as some were set to reside in the collections of scientists at the Museu Nacional do Brasil (MNB).

Both museums were represented by a diverse group of scientists, field experts, and curators whose taxonomic expertise ensured an accurate and extensive collection of specimens. Director of the Natural History Museum of Los Angeles County, Jean Delacour, led the expedition with Maurice and Paquita Machris. Dr. Kenneth Earl Stager, Curator of Ornithology and Mammalogy, Dr. Fred Stone Truxal, Curator of Entomology, and Dr. Elmer Yale Dawson, a visiting Smithsonian Botanist with close ties to the museum, all made up the scientific forces of the NHM's expeditionary team. Additional members included, Harry F. Burrell, a motion picture photographer and cinematographer, Mr. Milton Heyer Sperling, the expedition's maintenance man and an executive of the Richfield Oil Company, Mrs. Elizabeth Brown Sperling, the expedition's cook, Dean Torrence, assistant to Mr. Machris, and Douglas Shepard, the camp's general helper. The Museu Nacional do Brasil was represented by Dr. Antenor L. Carvalho,

²³ Ursula K. Heise, "Lost Dogs, Last Birds, and Listed Species: Cultures of Extinction," *Configurations* 18, no. 1, 2010, pp. 49–72.

Curator of Herpetology and Ichthyology, Joao Moojen, Curator of Mammalogy, Herbert F. Berla, Curator of Ornithology, and Joaquin Pereira, Assistant Curator of Ornithology. A number of field hands were also listed as members of the expedition team, though none were ever identified by name. Historically, expedition teams were comprised of a varied group of experts, including botanists, chemists, geologists, geographers, engineers, cartographers, and painters, from similar ethnographic and geographical backgrounds.²⁴ Though museums often exchanged specimens with one another for research purposes, international, and moreover intercontinental, cooperation on expeditions was quite uncommon. Even today, museums are reluctant to share the spoils of expeditions as habitat loss and rising costs have made collecting more difficult.²⁵ The Machris Brazilian expedition stands apart from other expeditions undertaken by the NHM, and museums generally, in that it was an intercontinental expedition in which scientists and administrators at both institutions seemingly held equal control over the project.

With an expedition team in place and ready to collect specimens for their museum's respective collections, planning for the expedition could begin in earnest. Extensive planning, by way of itineraries, equipment lists, base camp selection and potential routes, was undertaken by the NHMLA to ensure a balanced approach to any and all opposing values that extensive collecting would likely unearth. This in-depth process was not unique to the Brazilian expedition. Planners often had to decide how far expedition parties would venture beyond the safety and established infrastructure of local towns and urban cities. Unsettled regions might yield species that were new to science, but such areas were also difficult to access and thus risky

²⁴ Rocío Bruquetas, "The Search for the Perfect Color: Pigments, Tints, and Binders in the Scientific Expeditions to the Americas," *The Journal of interdisciplinary History* 45, no. 3 (2015): 367–387.

²⁵ Joseph A. Cook and Jessica E. Light, "The Emerging Role of Mammal Collections in 21st Century Mammalogy," *Journal of Mammalogy* 100, no. 3 (2019): 733–50.

places for collectors to venture. Before embarking on the Brazilian expedition in March of 1956, the NHMLA sent a representative of the crew named Dean Torrence, assistant of Maurice Machris, to Rio de Janeiro in July of 1955 to confer with Dr. José Cândido Carvalho, Director of the Museu Nacional do Brasil, and made all necessary arrangements for the upcoming expedition.²⁶ While there, Torrence also took aerial photographs of the route that the expedition planned to follow, including the “newly constructed roadways, which made much of the area accessible to motor vehicles for the first time.”²⁷ Upon his return, expedition equipment packed in four trucks and two trailers, was sent by boat to Sao Paulo. Two of the trucks, built to Maurice Machris’ specifications, were equipped with trap-door tops to permit collecting and the operation of motion picture cameras while traveling. The custom-built trailers carried a 5,000-watt generator, refrigerator and deep freeze, and a water purification unit. Additional items were shipped to Brazil by way of the SS Trader and the Pope and Talbot steamship lines before the expedition crew set out, including insect proof tents, “scientific collecting equipment”, aluminum boat, motion picture cameras and a 3-month supply of food.²⁸ In total, preparations for this expedition cost the Machrises \$67,663 in 1956, about \$750,850 today.²⁹ In February of 1956, Dr. Dawson, serving as a representative for the group, preceded the crew to make contacts and arrange for the entry of the equipment. The remaining expedition crew members departed six weeks after the equipment arrived in Rio de Janeiro amid a congratulatory whirlwind of articles and newspaper headlines celebrating the expedition’s forthcoming collections and scientific discoveries.

²⁶ Delacour, Brazilian General Account, *Contributions*, 6.

²⁷ Delacour, Brazilian General Account, *Contributions*, 6.

²⁸ Report on Major Expeditions, Directors Files.

²⁹ Brazilian Expedition Plans, Life Sciences Department Records.

Newspaper articles covering the expedition's imminent departure highlighted the importance of obtaining specimens and objects from the biologically unexplored places of the world, all while exciting the public about the scientific and anthropological promise of research collections. A growing interest in natural history museum collections, both public and private, made the mass promotion of expeditions of paramount importance to scientific institutions. The Machris Brazilian expedition was promoted in newspapers throughout Los Angeles as a systematic anthropological and biological operation that would crystallize a growing interest in the biogeological diversity of South America. Articles proclaiming that the NHMLA's scientists were set "To Explore [the Brazilian] Wilds" and "Hunt Animals in [the] Amazon" made headline news and stoked the public's interest in the biological material these intrepid explorers would bring back. Portrayals of expeditions in newspaper articles used mass extinction and biodiversity loss as narrative backdrops to reflect mid-century anxieties over modernity and the destruction of man.³⁰ Though these anxieties were masked with the promise of adventure narratives and exciting exhibitions displaying exotic animals from distant lands, newspaper articles held these fears directly up to the general public. They were announcements that simultaneously declared humanity was preserving what it had destroyed and protecting what it had already lost.

Though the menagerie of specimens collected by the expedition's scientists acted as small simulacrum of the Eden humanity had forsaken, they were essential to establishing an accurate and accessible catalogue of species for researchers across North and South America. As habitat loss continues to cause the deletion of many species throughout the global south, the archived material in museum research collections is often all that physically remains of their

³⁰ Heise, "Lost Dogs, Last Birds," 60.

evolutionary legacy. Those specimens, much like fossils for paleontologists, become the primary source material for generating data modern scientists use to answer questions about forgotten ecologies of the past.³¹ When assembled in context, these specimens act as biological surveys wherein researchers can examine the environmental impacts of human activity in spaces that no longer exist outside of these collections.³² Additionally, the phylogenetic studies that are done by systematists using the same collections provide the historical context for the evolutionary emergence of the organisms within those habitats. Natural history research collections are the unexpected chroniclers of the decline of native species, the current and past distribution of taxa, and of relationships between organisms, which live in interconnected, interoperable habitats.³³ These institutions guard against the forces of entropy and protect the heritage represented by some two billion specimens in natural history collections around the world.³⁴

Of the approximately four-hundred million to five-hundred million that reside in natural history museums across the United States, about sixty-thousand specimens are connected to the 1956 Machris Brazilian expedition. Conflicting external and internal reports, the latter of which is assuredly more accurate, suggest that fifty-thousand insect specimens, six-thousand five-hundred bird specimens, two-hundred and thirty study skins and mammal pelts, and one-thousand-two-hundred different species of plant life.³⁵ In addition to the specimens collected specifically for the collections at the NHM, a variety of “reptiles, amphibians and fishes were

³¹ Cook and Light, “The Emerging Role of Mammal Collections,” 743.

³² Lane, “Roles of Natural History Collections,” 537.

³³ Lane, “Roles of Natural History Collections,” 537.

³⁴ Lane, “Roles of Natural History Collections,” 540.

³⁵ Report from Director William Lee to Board of Directors title “The Business of Major Expeditions,” 1966, NHM.ARC.003, Directors Files, box 56, folder 9, items 04–10, C. William Lee Collection, NHM Archives and Special Collections, Natural History Museum of Los Angeles County, Los Angeles, CA.

collected for the Museu Nacional.”³⁶ New varieties of animal and plant life were immediately identified by NHM scientists while on the field. Etymologist Fred Truxal, discovered over a dozen new species of insects, among them the *Belostoma machrisi* and the *Buena machrisi*, which he named in honor of Maurice Machris.³⁷ ³⁸ Botanist Elmer Yale Dawson, discovered a new species of plant life, and named it *Pseudopilocereus machrisi* in honor of the Machrises.³⁹ Though these specific specimens were identified while on the field, and named after the Machrises, they in no way capture the significant amount of taxonomic knowledge that was brought into the world of natural history museums as a result of this sole expedition.

By the late fifties, over fifty-eight new varieties of plant life were identified by scientists at the NHM, the Smithsonian Museum and the Museu Nacional do Brasil, and countless other new species were identified in the fields of Ornithology, Etymology and Ichthyology across these and other research institutions.⁴⁰ Taxonomic databases containing a catalogue of the world’s collected specimens, like the Global Biodiversity Information Facility and the Integrated Taxonomic Information System, identify just shy of two dozen new species named in honor of the Machrises.⁴¹ ⁴² In fact, the number of specimens discovered and named after the Machrises

³⁶ Report from Director William Lee, Directors Files.

³⁷ Fred Truxal, “The Machris Brazilian Expedition: Entomology General,” *Contributions in Science* 1 no. 12, (1957): 3-27.

³⁸ Arnold S. Menke and David R. Lauke, “The Machris Brazilian Expedition: Entomology: Belostomatidae (Hemiptera),” *Contributions in Science* 2 no. 55, (1957): 3-8.

³⁹ Elmer Y. Dawson, “The Machris Brazilian Expedition: Botany General,” *Contributions in Science* 1 no. 55, (1957): 3-8.

⁴⁰ Search. GBIF. (n.d.-b).

https://www.gbif.org/occurrence/search?collection_code=birds&country=BR&institution_code=lacm&year=1956%2C1956&advanced=1.

⁴¹ *Integrated Taxonomic Information System (ITIS)*. Integrated Taxonomic Information System (ITIS) | U.S. Geological Survey. (n.d.). <https://www.usgs.gov/tools/integrated-taxonomic-information-system-itis>.

⁴² Search. GBIF. (n.d.-b).

https://www.gbif.org/occurrence/search?collection_code=birds&country=BR&institution_code=lacm&year=1956%2C1956&advanced=1.

grew to such an extent that several new Latin terms, including machrisae, machrisi and machrisiana, appeared in the “names of several dozen new discoveries, including several water bugs,” birds, fish, and plants. By the early sixties, more than one-hundred and twenty-five new varieties of life were identified thanks to Machris funded collecting projects, at least half of which were from the 1956 Brazilian expedition.⁴³ Though it is tempting to believe that these new varieties of life were identified by scientists on the field, with a leather-bound notebook in one hand and a gun in another, most of the species were identified long after the expedition came to an end, and crates full of collected specimens were delivered to the NHM.

Knowledge of biodiversity, and more importantly, the dissemination of that knowledge, is the ends to which natural history museums were established, expeditions were launched, and biological lifeforms were plucked from their native habitats. As an intercontinental expedition, the 1956 Machris Brazilian expedition made it clear to outside observers that the cooperation of research institutions and museums was of paramount importance to the NHM, the MNB and the Machrises. Rather than safeguarding their collections, NHM shared the spoils of the expedition with various other national institutions, including the Smithsonian Natural History Museum.⁴⁴ In fact, a quick search through the Smithsonian’s Collection Records reveals a number of donated specimens from the NHM and the Machrie’s themselves. In addition to this, archival records show an intense friendship between the two museums, facilitated in part by various curators and scientists who participated in the Brazilian expedition, including Kenneth Stager, Elmer Dawson and Director Jean Delacour. Dawson, a Smithsonian Fellow at the time of the expedition, left a

⁴³ Jack Olsen, “They Kill Them with Kindness,” *Sports Illustrated*, July 10, 1961.
<https://vault.si.com/vault/1961/07/10/they-kill-them-with-kindness>.

⁴⁴ *Smithsonian National Museum of Natural history*. SI NMNH - Museum Collection Search. (n.d.).
<https://collections.nmnh.si.edu/search/>.

small collection of correspondence in the institution's archives. The institution also holds a complete collection of *Contributions in Science*, a scientific journal specifically created by the Natural History Museum of Los Angeles County, and funded by the Machrises, to disseminate information about new species and scientific discoveries stemming from the 1956 Brazilian expedition. The first journal, titled "The Machris Brazilian Expedition: General Account," was published a few months after the expedition, and was the first of over a dozen publications focused entirely on the expedition. Specimens collected during the 1956 Brazilian expedition weren't housed in national and international research collections to slowly be forgotten by time, instead, these specimens went on to have scientific afterlives, as taxonomic objects for biodiversity research and contextualized subjects within scientific journals and publications.

Beyond offering contextual and taxonomic information on past and present biota, research collections have and continue to contribute to the conservation of the world's wildlife in a multitude of ways.⁴⁵ Public understanding and awareness of conservation efforts, for vertebrates in particular, is inextricably tied to the idea of the "endangered species." For better or worse, the Red List of Threatened Species, known to the layperson as "the endangered species list," has become the primary tool with which the public assesses the effects of biodiversity loss.⁴⁶ The International Union for Conservation of Nature's (IUCN) Red List, "stands as the authority on the current conservation status of Earth's flora and fauna and is used by scientists and regulators alike to address challenges associated with conserving Earth's natural resources."⁴⁷ The "endangered species list" is determined through the analysis of various

⁴⁵ Adam W. Ferguson, "On the Role of (and Threat to) Natural History Museums in Mammal Conservation: An African Small Mammal Perspective." *Folia Zoologica* 69, no. 2 (2020): 1–23. <https://doi.org/10.25225/jvb.20028>.

⁴⁶ Ferguson, "On the Role of Natural History Museums," 4.

⁴⁷ Ferguson, "On the Role of Natural History Museums," 4.

sources, ranging from the taxonomic data of a particular species to the identities of those responsible for any assessments performed on specific specimens. Although much of this can be found in scientific journals and published studies in academic literature, for many taxa, a great deal of “the information used to assess individual species’ conservation status stems from data collected for and housed within” natural history museums.⁴⁸ The taxonomic data (i.e., the specimen’s individual characteristics, identifiers, history, environment, ecological ranking etc.) taken exclusively from research collections, document range expansions, species occurrence, potential geographic barriers, and habitat destruction. These collections also reveal the impacts humanity has had on the delicately balanced ecologies of the world, through studies on climate change, genetic diversity, disease, physiology, and the loss of biodiversity. The billions of specimens stored in natural history museums around the globe grant scientists unparalleled access to the world’s biota, help them accumulate important taxonomic data, and aid them in their efforts to impart knowledge about vulnerable species and conservation efforts to a largely uninformed public.

The spatially extensive and temporally deep collections of natural history museums periodically increase in value as more and more species and habitats are lost to the impacts of human activity. Jean Delacour’s concern about habitat loss in the Amazon has since come to pass, with approximately forty-one percent of the original forest area destroyed for agricultural purposes.⁴⁹ Much of the Rio Tonantins region, where NHM and MNB established their two base camps, has also been destroyed by local urbanization and industrialization. Rainforest conservationists estimate that between 0.2 and 0.3 percent of rainforest species are lost annually,

⁴⁸ Ferguson, “On the Role of Natural History Museums,” 4.

⁴⁹ Jose Manuel Ochoa-Quintero, et. al., “Thresholds of Species Loss in Amazonian Deforestation Frontier Landscapes.” *Conservation Biology* 29, no. 2 (2015): 440–51. <http://www.jstor.org/stable/24482651>.

assuming that one percent of the rainforest is destroyed per year, and roughly 10,000 species face extinction.⁵⁰ In the midst of a global climate crisis that has already led to an unimaginable loss of life in the American tropics, museums expeditions and their resulting specimen collections, have become an invaluable source for scientists and historians to understand the impacts of human activity on the world's biogeological diversity.

In the seven decades following the 1956 Machris Brazilian expedition, humanity has ushered in a sixth mass extinction, bringing with it the disruption and destruction of countless ecological environments and biological lifeforms. The zoological and biological specimens collected during this expedition, and all expeditions generally, are often the only chroniclers of their evolutionary stories and environmental histories. As keepers of these specimens and stories, natural history museums have emerged as a primary source for identifying and protecting the planet's biological diversity through the safeguarding of collected biota and the dissemination of taxonomic knowledge. Among the thousands of institutions, and countless expeditions, the NHM's 1956 Machris Brazilian expedition is an extraordinary example of early conservation efforts, intercontinental cooperation, and a hitherto unseen distribution of knowledge.

⁵⁰ "Amazon Assessment Report 2021," Science Panel for the Amazon, 2021.

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