

# Lost Specimens from Neotropical Futures: Evolutionary Species of another Place and Time

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## Abstract

Anthropogenic pressures are impacting our planet with increasingly dramatic effect, especially here in the Tropics, where even the boundaries of the region itself are under threat. Evolutionary developments in all facets of life, from the physical and environmental to the digital and intellectual, unleash profound issues that affect us all. “Lost Specimens” is a result of my research and deep reflection on humans’ pervasive influence on all aspects of life, inspiring me to create hybridized species that are rooted in our planet but exist in parallel realities of an alternative space-time. The specimens presented in this paper come to us from a neotropics of the far future. Crafted from forest detritus, these meticulous artworks—a form of vegan taxidermy—are a satirical comment on the profound impact and environmental degradation our actions are having on biodiversity; so too are they intended to highlight the Age of Blur we currently find ourselves in, where once distinct binary distinctions such as true/false, analogue/digital, science/faith and now tropical/temperate are being provoked into redefinitions which reveal new interrelations.

**Keywords:** Lost Specimens, neotropical futures, hybridized species, forest detritus art, environmental protest art, vegan taxidermy, evolutionary futures

# LOST SPECIMENS

**Figure 1. Lost Specimens: Samsonus Six, Feather Shark, Oil Glider, Congregation Tick**



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2023 & 2024)<sup>1</sup>

**W**e humans are influencing all areas of the Earth on which we live. Be it in the water (both oceanic and limnic) and on land, as well as impacting flora and fauna, ecosystems, biodiversity, and the climate that affects us all, we have irrevocably changed the make-up of this planet. Whether you subscribe to the title “Anthropocene”, “a proposed geological epoch that describes the current period in Earth’s history when human activity has become the dominant force shaping the planet’s ecosystem” (Zottola & de Majo, 2022, p. 1), the “Plantationocene” that locates this period with the colonial devastation wrought across the tropics and beyond through plantations, slavery, and extractivism (Haraway, 2015), or the “Patchy Plantationocene” which recognises new emergent feral proliferations within these devastated landscapes (Chao, 2022)—or none of these, there is no doubt *Homo sapiens* are changing life forever, actions that will almost certainly leave a distinct, tell-tale seam in the fossil record.

<sup>1</sup> All individual Lost Specimen descriptions, illustrations and photos are under the full copyright of the artist, Helen M Mitchell. Text and images can only be used with written permission from the artist. For contact details visit: [www.HelenMMitchell.com](http://www.HelenMMitchell.com).

Rising temperatures on both land and sea are forcing many species to adapt, move, or die (Freeman et al., 2021). Humans' massive and rapid expansion, as well as our commodification of most all other species, has put enormous pressure on the Earth and its cycle of life. Current studies on how flora and fauna will cope with these changes reveal startling ways individual species are adapting (Palumbi, 2002). Tropical plants are already known to evolve faster than their temperate cousins (Wright et al., 2006) and so may already be better adapted to survive the fast-paced changes upon us. Some animals also exhibit this trait. According to Gretta Peci and George D. Jackson, as squid encounter warmer weather, their bodily functions speed up and they reproduce more often. As their population explodes, so does their genetic diversity, and this means more chances for genetic mutations in subsequent generations, specialising creatures to certain waters. Eventually, they become so unique that they are different species altogether (Peci & Jackson, 2007).

Environmental degradation due to our growing needs means species numbers are being decimated worldwide. As our population grows exponentially, so too does our food production, but irresponsible farming techniques, such as overuse of pesticides and herbicides, often cause inadvertent problems, like the increasing rate of suffocating algae blooms (Caro-Borrero et al., 2024). Habitat loss due to urbanisation is a major contributing factor, but so too is noise and light pollution, most famously for nesting sea turtles whose hatchlings are attracted inland instead of to the ocean due to night lighting (Vandersteen et al., 2020), but also for avian populations that have been recorded adjusting their acoustic signals in reaction to higher noise levels from encroaching towns and cities (Tolentino et al., 2018). Species with less plasticity of learning may be disadvantaged by this lack of ability to change. It has long been known that overfishing causes populations to crash worldwide, but it is becoming evident that targeted harvesting, such as trophy hunting, as well as poaching in general, also has direct genetic side effects. As ram weight and horn size are highly heritable traits in elephants, a study in Mozambique showed these pressures resulted in a highly reduced gene pool favouring animals with smaller, slower-growing tusks, resulting in a "strong selection that favored tusklessness amid a rapid population decline" (Campbell-Staton et al., 2021, p. 1). Even so-called ecotourism is a significant force driving this extraordinary time of adjustment. Whilst the economic boom of swimming with manta rays (O'Malley et al., 2013) encouraged protection of this iconic species within the Tropics, most notably in Indonesia, adverse side effects such as behaviour modification, boat strikes and other issues have been recorded (Venables, 2013).

Of the world's 20 most biodiverse countries, 15 (Bolivia, Brazil, Colombia, Costa Rica, the Democratic Republic of Congo, Ecuador, India, Indonesia, Madagascar, Malaysia, Mexico, Papua New Guinea, Peru, Thailand, and Venezuela) are predominantly tropical ecosystems. However, climate changes are forcing many species to find

suitable conditions elsewhere; some are even leaving the latitudinal boundaries of the Tropics for appropriate habitats elsewhere, whilst temperate species are retreating, resulting in a new global trend called “tropicalization” (Zarzychny et al., 2024), causing us to consider and reevaluate what the definition of tropical actually is.

Nature is sensitive and constantly in flux, and not all changes have been caused by humans, although most scientists agree the vicissitudes we are now experiencing are much faster than the natural order of things. However, new research shows that phenotypic plasticity seems to be playing a key role in the way species survive (Nogués-Bravo, et al., 2018). Take a resident of the urban parks in New York City, for example. A study of urban white-footed mice (*Peromyscus leucopus*) shows evidence suggesting that physiological stressors and/or diet are changing them at a biomolecular level, as they adapt to novel food resources. This finding is corroborated by recent evidence that urban *P. leucopus* have shorter upper and lower tooth rows than rural white-footed mice. Lower-quality food in the diet often requires increased chewing and is accompanied with larger occlusal surfaces and, subsequently, longer tooth rows (Harris & Munshi-South, 2017). This new phase of evolution and phylogenetic upheaval is Lost Specimens’ primary subject matter (Mitchell, 2023).

Evolutionary Speed Hypothesis (ESH) is a theory of how different rates of biological processes lead to different speciation rates and thus diversification in environments with different temperatures (Gillman & Wright, 2013). Integrated ESH (IESH) advocates including water availability, latitude, spatial heterogeneity, and population size in the equation, and both suggest that molecular evolutionary rates are higher among species inhabiting warmer environments, i.e., the Tropics. Lost Specimens suggests direct anthropogenic influence should also be included. Objectification of both animals and the environment is a highly problematic symptom of how our culture approaches the natural world, and this project seeks to highlight how these entrenched systems have permeated the Tropics, a direct result of colonization that includes all areas of both animate and inanimate life. Rather than respecting existing cycles, the region was plundered for its “exotic” gems, setting the stage and networks for such harvesting to continue to the present day and beyond, “asset-stripping” in the extreme, and the environmental degradation that comes along with it. So too was born an obsession with the collecting of specimens, possession via taxonomic nomenclature. This fetishization of “preserving” a moment in time under glass was perhaps more subtle but just as pervasive, the declaration of “discovery” adding insult to injury, opening the door for the resulting ecocriticism and narratives found throughout writings at the time and in postcolonial texts afterwards (Huggan & Tiffin, 2015).<sup>2</sup> The unique

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<sup>2</sup> There is now a call for the use of folk taxonomy, a return to labels from the Indigenous cultures rather than invading visitors, based on cultural principles, such as an organism’s appearance, habitat, or habits (Phaka et al., 2019). It is a system that provides information on the biology, ecology, and ethology of local taxa and can also be used to help develop Indigenous languages and increase participation in biodiversity issues and protection efforts.

“creatures” presented in Lost Specimens have evolved by adapting to the changes humans have inflicted upon the Earth’s ecosystems. Some are due to slow environmental changes over time, and others are the result of direct pressure from dramatic human-caused events. Coined *vegan taxidermy*, every Lost Specimen comes complete with a Latin name, common name and year “discovered”, along with a scientific description detailing their habitat, ecology, evolution, reproduction, and lifespan. Each tale weaves a story of how *Homo sapiens’* detrimental actions on our planet have resulted in mutations these animals have had to adopt to survive. Some are simple changes within a genus; others have gone through full speciation to become new, extraordinary creations.

**Figure 2. Scientific description revealed via engraved QR code**



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2021). Exhibited: Lost Specimens, T.R.H., Indonesia (2023); Vmes / In Between, Cankerjev dom, Slovenia (2024)<sup>3</sup>

Whilst more appropriate, let’s hope it signals a move to less possessive connotations, towards a future where no being controls any other. As everything in our world is connected, be it by weather patterns, communication or the finite amount of mass and energy being continuously redistributed in cycles between life and death, it seems only right we move towards a future that no longer tolerates possession in this sense, understanding it is “fool’s gold”.

<sup>3</sup> Several of the artworks have previously been shown in galleries, as well as published digitally on the artist’s online platforms. This article collates selected pieces set in the Tropics, to discuss the work’s themes in such an engaging area.

At this stage in our cultural history, we are also entering a time of intellectual turbulence. Long gone are the days when tales of the Loch Ness Monster or the Cottingley Fairies (photographs of “real fairies” generated by teenagers in 1917) could cause a media storm. Myths and legends have long been a staple of our highly socialized community structure; the oldest known representation of a mythical beast was a 44,000-year-old cave painting found in Indonesia, an animal-human hybrid called therianthropes (Aubert et al., 2019). Humans’ fascination with tales of the weird and other-worldly has always been something that brings us together, commercially exploited in the extreme by the likes of P.T. Barnum and his “American Museum”.

Titillating the public with his many oddities, such as the “retina of a Cyclops” or his 10-foot tall “petrified giant” called the “Cardiff Man”, arguably his most famous oddity was a “Feejee Mermaid” (Barnum, 1855), but this taxidermic fake (using the head and torso of a monkey attached to the tail of a fish) had a long history in Asian culture long before Barnum found such a specimen. First mentioned in 7<sup>th</sup> century Japanese literature, “Ningyo” (人魚) were apparently a common sight in the waters around the archipelago. Initially thought to help ward off evil spirits, but subsequently considered a bad omen by medieval times, there was a long-running belief that eating its flesh imparted youthful longevity, giving rise to the story of an 800-year-old nun, Yao Bikuni (Itakura, 2022).

**Figure 3. “Fiji Mermaid”**



Monaco’s Musée Océanographique (2023)

Visual hoaxes are well known throughout the art world, too. Aside from fakes made purely to deceive for financial gain, there is a long history of “fictive art practices” dating from the 17<sup>th</sup> century (LaFarge, 2021), provoking thoughts and ideas, along with shock, amusement, and sometimes anger at both the artist and the medium itself. Artists are uniquely placed to initiate dialogue within society at large (often inaccessible to science/academia but often in complement with traditional educational/informational outlets), and whilst this type of research and methodology makes up a lesser-known portion of the artistic canon, it can nonetheless access and express knowledge that goes beyond purely cognitive understanding. “As important as an academic community might be, there is also a larger public, including practicing artists, with whom the researcher is almost obliged to communicate” (Hannula, 2014, p. 167), making them themselves and what they do a vital node within the fabric of our society.

Conceptual artist Joan Fontcuberta has spent much of his career investigating the truth and authority of photography. In “Herbarium” (1982–85), he mixes inanimate objects with plant and animal matter to create “pseudoplants”, presenting authenticity by assigning them Latin names and photographing them in the style of classic botanical portraiture. His photographs of strange hybrid animal species for “Secret Fauna” (1985–90) are presentations within fictionally constructed worlds, a door into his mischievous imagination. His satirical and humorous work frequently highlights the way 2D imaging has been co-opted for propaganda and commerciality: “...many observed things are to be found in the eyes of the observers and not in the image observed” (Zabalbeascoa, 1993, p. 107), thus “photography no longer documents but metadocuments” (Fontcuberta, 2001, p. 24). More controversial are Eva & Franco Mattes, whose disruptive work not only exists in the fake but also challenges our ideas of truth, privacy, and decency. In “Darko Maver”, they invented a reclusive artist who was posthumously feted by several art institutions, most significantly the 49<sup>th</sup> Venice Biennale; their shows displayed “his” images of the life-sized sculptures he had supposedly created, depicting brutally murdered war victims deposited in public spaces throughout Yugoslavia, only to be revealed as photos of actual war victims the artists had found online, causing shock and disgust, and sparking huge debate. “After the show we publicly claimed we had invented his life and artworks. No sculptures ever existed; the images documenting his artworks were photos of real atrocities found on the internet” (Mattes & Mattes, 1998). Their point that “while artists are making shocking artwork, absorbed by the market, real violence is being perpetrated and ignored by a media-anesthetized world” (Blais & Ippolito, 2006, p. 123) is powerful.

Nor is subversion and fakery unknown to the world of science. Fungus expert Richard William George Dennis (1910–2003) not only wrote hoax articles about fungi found in East Africa that did not exist but even placed faux specimens in the Fungarium at Kew

Gardens, labelling them “*incertae sedis*” (taxonomic groups and relations unknown or undefined) and claiming “that a fungus was whatever a mycologist decided it to be; any object was made a fungus through the signature of a mycologist alone,” a very Dadaist attitude, indeed (Smith, 2023, p. 1).

In an age where our norm is the constant bombardment of information with questionable authenticity and a life lived behind the mask of an avatar online is a viable opportunity, Susan Sontag’s very valid concerns of photography’s violation of both its subject and its viewer—where an “aesthetic consumerism to which everyone is now addicted [as] Industrial societies turn their citizens into image-junkies...the most irresistible form of mental pollution” (Sontag, 1978, p. 24)—now seem like the good old days. Rather than assuming an all-out “infocalypse” (Schick, 2024), where we’ll have to navigate the biggest information and communication meltdown in history, I suggest we are in an epoch of “blurification”: the lines between real and artifice, analogue and digital, tropical and temperate, and science and faith have become unclear; even the concepts of time and our understanding of the significance of information are under investigation. Perhaps moving away from restrictive binary absolutes will herald a more flexible, sympathetic and understanding existence.

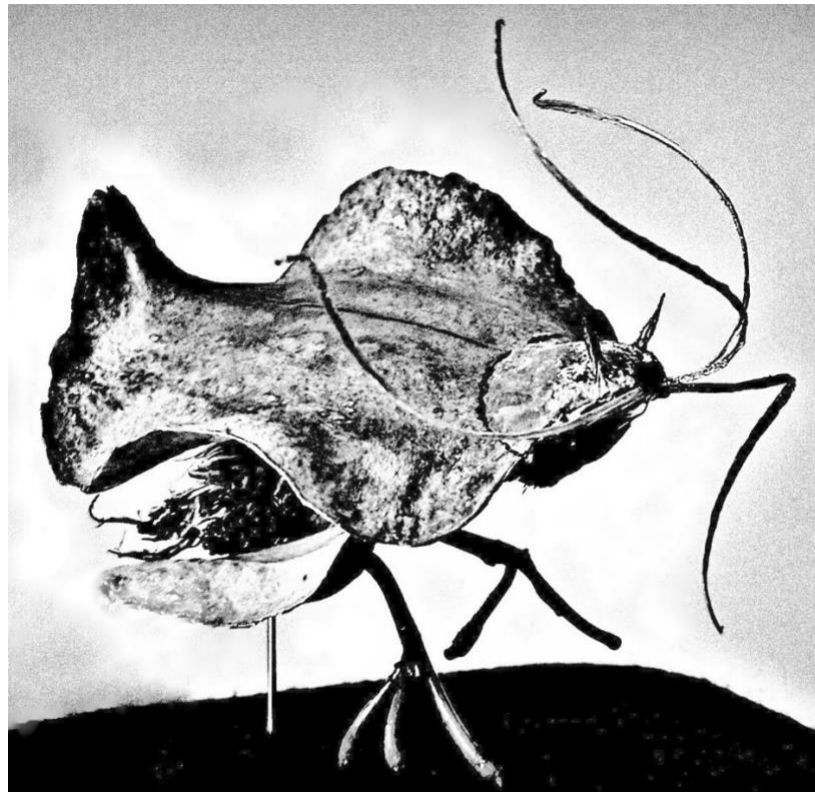
As an artist, my intention is not to deceive; rather, each Lost Specimen is intended to both disturb and delight, environmental protest art conferred via curiosity in these enchanting creations, where notions of the present are entangled with evolutionary possibilities of the future. It is the sign of our times that the very notions of “true” and “false” have become irrelevant, that our own perception and subjective experiences are now the only reliable understanding that applies, and for some, are the integral building blocks of our existence: “From communication to the basis of genetics, from thermodynamics to quantum gravity, the notion of information is gaining ground as a tool for understanding. The world should not be understood as an amorphous ensemble of atoms—but rather as a game of mirrors, founded on the correlations between the structures formed by *combinations* of these atoms” (Rovelli, 2017, p. 226).

Juxtaposing old-fashioned worlds of taxidermy with unsettling notions of the future, perhaps art viewers will rethink the truth behind these presented origins and ask: How are they real? In what tropical evolution could they exist? How will all our interconnected futures unfold?

### **Species from a Future neoTropics**

The following selection of specimens are from various regions of a future neoTropics. The scientific information about each specimen is readable from the QR code on their exhibition showcases. Each is first presented in black and white with their essential

taxonomic information listed below. This is followed by observational notes regarding their description and habitat, including the environmental and climatic challenges the species endured during the time of great planetary changes. There is also a section on reproduction, which demonstrates the varied ways in which the species adapted to ecological niche habitats.



Common Name: Cyclone Clam

Scientific Name: *Omophraneta hermetica*

Specimen Length: 76mm

Specimen Sex: Male

First Described: AD 2032

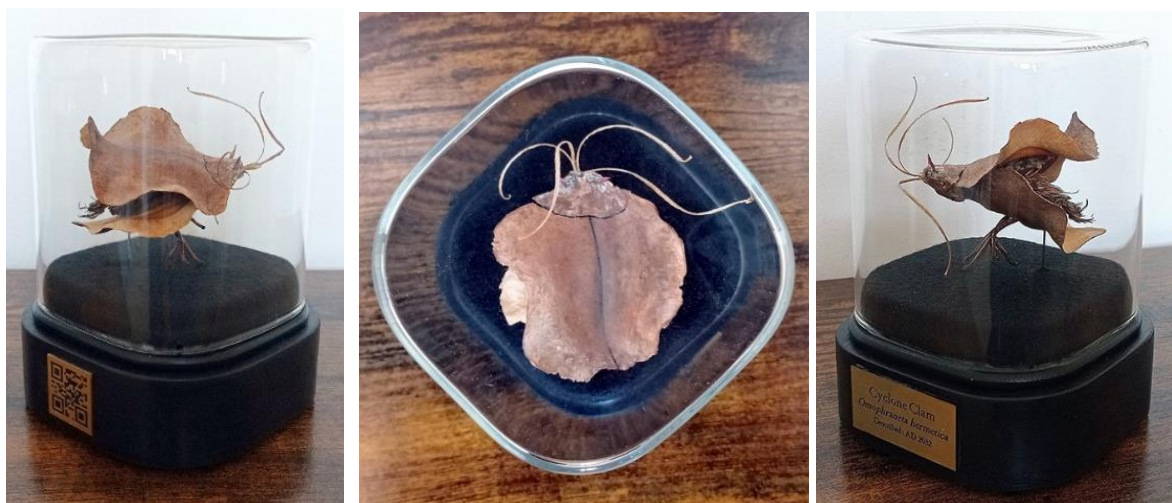
Description and Habitat: Although commonly called a Cyclone Clam, this very interesting animal is not a bivalve, or related to molluscs in any way. It is, in fact, an insect, a direct descendant of *Periplaneta americana*, or the common brown cockroach. Native to Africa and the Middle East, *P. americana* is thought to have been introduced to *Omophraneta*, a genus of American ground beetle, during the 17<sup>th</sup> century, on colonists' ships that were passing through Africa for commercial activities, including the Atlantic slave trade. Isolated in an enclosed environment for long periods of time, and over many generations, the beginnings of hybrid speciation took place, the first step

in a short process of evolution resulting in *Omophraneta hermetica*. Sparsely distributed throughout the world, it is most prevalent across the Tropics, particularly in areas with high storm frequency rates, its ability to seal completely watertight enabling *O. hermetica* to withstand the vicious hurricanes frequently ripping through its territory. First described in AD 2032, it was discovered in the ruins of Manila, the ancient capital city of the landmass formerly known as the Philippines, that was destroyed in AD 2030 by Hurricane Hades. Initially thought to be a common clam species (*Ruditapes philippinarum*), closer study revealed an exoskeleton so well evolved, it has an almost instantaneous closure mechanism and rapid but very fine overgrowth capabilities, sealing any and all vulnerable areas: legs lie flat into cavity recesses on its ventral side, mouthparts retract into its head, and a gelatinous adhesive exudes all along the exterior edge of its elytra, the hard wing casings that clamp down flush with the outer shell of the abdomen. Its four highly informative antennae curl up tight into their scape, or antennae bed, although depending on the severity of the storm, these are often lost, causing the individual to go into a period of dormancy, self-induced hibernation until its antennae have grown back, indicating environmental conditions have calmed enough to emerge. This can take up to four weeks, and is an interesting evolutionary tactic allowing this hardy insect to survive in such hostile conditions.

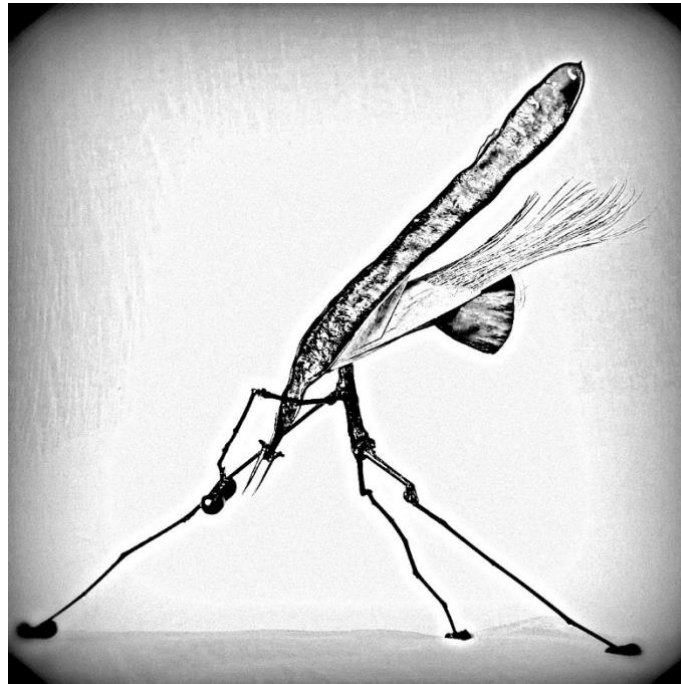
Reproduction: After finding a suitable housing carcass, male Cyclone Clams release pheromones to attract a female and then wait. As this process is very weather dependant, their breeding season is short, during the relatively dry few weeks of summer; it is imperative a mate is found within a few days, otherwise the offspring risk being drowned. Once a female has chosen a partner, the male inserts his aedeagus into the female's genital opening to transfer sperm which is stored in the female's reproductive tract and used to fertilize eggs. The female then lays as many as 600 eggs into a chamber next to the carcass, from where the larvae will hatch and feed on it as they go through three instar stages before pupating as adults.

Life span: Up to four years.

**Figure 4, 5, 6. Cyclone Clam**



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2024)



Common Name: Garbage Patch Itsumade

Scientific Name: *Ixobrychus plastica itsumadae*

Specimen Length: 196mm

Specimen Sex: Female

First Described: AD 2058

Description and Habitat: The Garbage Patch Itsumade’s ornithological ancestor, the Little Bittern, was originally native to the Old World, breeding and highly migratory throughout Africa, Europe, Asia and Madagascar, but this bird-insect hybrid has evolved to successfully inhabit the oceanic garbage patches found throughout the world’s seas and has now become endemic to these vast areas. No longer migratory, they travel by hitching a ride on oceanic flotsam, their four legs and float-like feet giving them sufficient stability to walk on top of the most compact parts of the enmeshed trash.

Named after the eerie Itsumade bird from Japanese folklore (so called for its horrible cry of “Itsumademo?” which means “Until when?”, the birds appearing to ask: “How long will this suffering go unnoticed?”), *Ixobrychus plastica itsumadae* is crepuscular, skulking for food during the twilight hours and is normally solitary. It feeds on small insects, algae, amphibians and microplastics caught within the highly complex garbage patch structure.

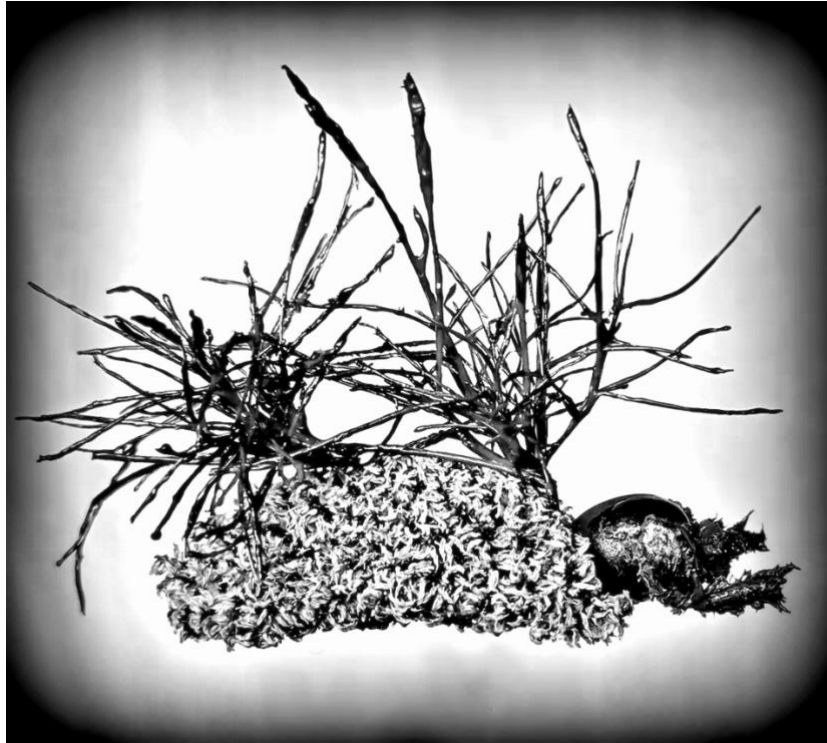
Reproduction: The male claims a territory in the spring, advertising his presence with its distinctive screeching call, and the monogamous pair remain together for at least one breeding season. Eggs are generally laid in as densely vegetated an area as can be found, glued to a submerged article by their protective gelatinous outer layer. Females typically carry 10-20 eggs, the shell composition made up of approximately 60% plastic-based compounds enabling them to survive being suspended in water for extended periods or ejection from the nest, as often happens during frequent hurricane conditions. The eggs are incubated for 17–19 days, and the nymphs are fledged after 25–30 days, having gone through five instar, or moulting, stages.

Life Span: Approximately eight years.

**Figure 7. Garbage Patch Itsumade**



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Common Name: Indonesian Terrestrial Nudibranch

Scientific Name: *Nudibranchia terrestris* (Indonesia)

Specimen Length: 68mm

Specimen Sex: Female

First Described: AD 2035

Description and Habitat: *Nudibranchia terrestris* are found all over southeast Asia, having evolved from species of marine nudibranchs (shellless marine molluscs) in areas of Indonesia where thousand-year-old mangrove forests were cut down. As well as being massive carbon sinks, such primary forests store many other ancient chemical compounds which were released as the extremely nutrient rich soil permeated the surrounding marine environment. As these chemicals were ingested and absorbed, new and strange subspecies evolved.

Both marine and terrestrial nudibranchs have their lungs on the outside of their body, (their scientific name *Nudibranchia* means naked gills, and describes the flamboyant tentacle-like cerata on their backs), which are also sensitive to movement, smell/taste and temperature.

They also derive their colouring from the food they eat, which helps in camouflage, and most retain any poisons derived from their diet to secrete as a toxic defence against predators. Most use undulating movements of their body to slowly crawl along their chosen surface, but the terrestrial varieties are more active, even known to drop from great heights to reach prey below. Rather than being purely carnivorous, *Nudibranchia terrestris* have become omnivorous in their evolution from sea to land, also absorbing chemicals from their surrounding environment (often from construction materials and plastic waste) and are extremely poisonous to the touch; death rate to humans can be as fast as 30 seconds, causing instant respiratory failure.

Reproduction: Like their cousin the marine nudibranch, they are simultaneous hermaphrodites and can mate with any other mature member of their species. Whilst they spend most of their adult life on land, they go back into the sea to lay their eggs, usually several thousand (but on rare occasions up to a million) within a gelatinous spiral that resembles a flower. After hatching, the tiny infants look almost identical to their adult counterparts, and they start their migration to land almost immediately.

NB. Last year saw the first known swarming of this species off the southeast coast of Bali, where unprecedented numbers (hundreds of thousands) slowly penetrated the island of Nusa Ceningan, killing several people whilst they slept. Local islanders refer to them as *Siput Zombies*, or *Zombie Slugs*.

Lifespan: Varies widely, from less than a month to several decades depending on food resources.

**Figure 8, 9, 10. Indonesian Terrestrial Nudibranch**



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 Exhibited: Lost Specimens, Tamarind Resort Hotel, Indonesia (2023)



Common Name: Mimic Heliconia Assassin Fly

Scientific Name: *Leptogastrinae mimicae belikonios*

Specimen Length: 184mm

Specimen Sex: Male

First Described: AD 3106

Description and Habitat: Living amongst stands of heliconia plants, this uniquely camouflaged insect no longer has wings, having been modified through evolution to mimic the flowers around them. Once a preferred location has been chosen, *L. mimicae belikonios* embeds its claw-like feet into the succulent stalks of its host plant, barely moving as it waits for unsuspecting prey, such as insects and small frogs coming to drink rainwater pooling in the flower's bracts. If in short supply, however, these aggressive predators are known to attack larger animals, such as bats and geckos, using the hypopharynx in the tip of their proboscis to eject neurotoxins that rapidly immobilizes their victim, and proteolytic enzymes that dissolve its flesh, allowing the assassin fly to slowly ingest the meal over time. This intrepid predator has even been known to attack hummingbirds.

In the period of just a few hundred years, most of *Leptogastrinae mimicae belikonios*' diverse taxonomic ancestral line *Asilidae* died out due to the same climate change-related virus widely accredited with causing the extinction of bees in the early to mid 21<sup>st</sup> century, and it is thought this

subspecies' survival was due in part to its immobility, as the virus causes microbiological issues to wing mechanics.

Now populating the entirety of the American Tropics and the Pacific Islands westward to Indonesia, the Heliconia Fly is thought to have originated from the jungles of Sulawesi, having been introduced to South America during the mass development of the Amazon region that occurred in the late 23rd century, inadvertently packed with locally extinct hard woods and plants that were being reintroduced to the area. Invasive and highly fecund, the result was the obliteration of all bat species that made their home in the leaves of the heliconia, most notably the Honduran white bat (*Ectophylla alba*), that made nests by cutting the side veins of the leaf to make it fold like a tent, and the neotropical disc-winged bat (*Thyroptera tricolor*), whose suction pads on its wings allowed it to cling to the leaves, as the Mimic Heliconia Assassin Fly found them easy, unsuspecting prey.

Reproduction: Long since flightless and relatively immobile, male and female Heliconia Flies live in close proximity to each other so they find a mate with ease, although courtship and mating are an awkward affair that can last from 30 minutes to two hours. The female then finds a warm, moist area of soil in which to lay the fertilised eggs, which hatch into larvae, then progress to the pupa stage, completing their development in approx. 20 days. Once a fully developed adult emerges, it will crawl back up the heliconia stand to join the rest. Entomologists are still trying to fully understand how inbreeding has evolved to be a benefit rather than a detriment.

Life Span: Approximately 12 months.

**Figure 11, 12, 13. Mimic Heliconia Assassin Fly**



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2021)  
Exhibited: Lost Specimens, Tamarind Resort Hotel, Indonesia (2023)



Common Name: Parasitic Flutter Wasp

Scientific Name: *Ampulex volitartio*

Specimen Length: 84mm

Specimen Sex: Female

First Described: AD 2137

Description and Habitat: *Ampulex volitartio* is a recently discovered species of super-insect, being in constant evolutionary flux due to its ability to change at an extremely fast rate. Currently it has a single eye-bed, a bulbous protrusion covered by many optic globes, each made up of hundreds of light-sensing structures called ommatidia. Rather than antennae, on either side of the upper thorax there are stands of setae. Although their primary function is as a substrate from which pheromones are both dispersed and detected by many tiny sensors during courtship, the setae also act as a means of limited flight, causing this interesting insect to move along in fluttering jumps, inspiring its common name: Parasitic Flutter Wasp.

Reproduction: A direct descendant of the Jewel Wasp, *A. volitartio* is also an endoparasitoid of the common cockroach, its enslavement a major part of their reproduction strategy. Often just a fraction of the size of her victim, this dangerous wasp begins attacking a cockroach by fluttering above whilst aiming its right stinger at its prey's thorax, injecting venomous compounds that paralyze the cockroach temporarily so the wasp can aim her next sting with more accuracy into areas of the ganglia, thereby entering its central nervous system. This elicits a long-term behaviour modification termed hypokinesia, turning stung cockroaches into lethargic and compliant (but not

completely paralyzed) hosts, a living food supply for the wasp's offspring, as well as transportation device and guardian.

Once the female wasp has found a suitable burrow, the roach curiously allows the wasp to mount its head before taking her to the new den. There, she will use the left stinger to oviposit a single egg into the host, which serves as its food source throughout the offspring's development. She will then leave, knowing the roach will not only stay until her young has fully developed, but defend the den from other predators, whilst being eaten from the inside out. How the neurotoxins instigate this type of defensive behaviour is still not fully understood. The larvae develop through three instar stages, consuming internal tissues selectively, including body fat and skeletal muscle, but sparing the gut and Malpighian tubules so as to postpone death until the new wasp emerges. The developmental timing to pupation is similar between males and females, but cocoon volume and mass, as well as pupation duration, are sexually dimorphic, dictating sex before eclosion. Only the females produce venom.

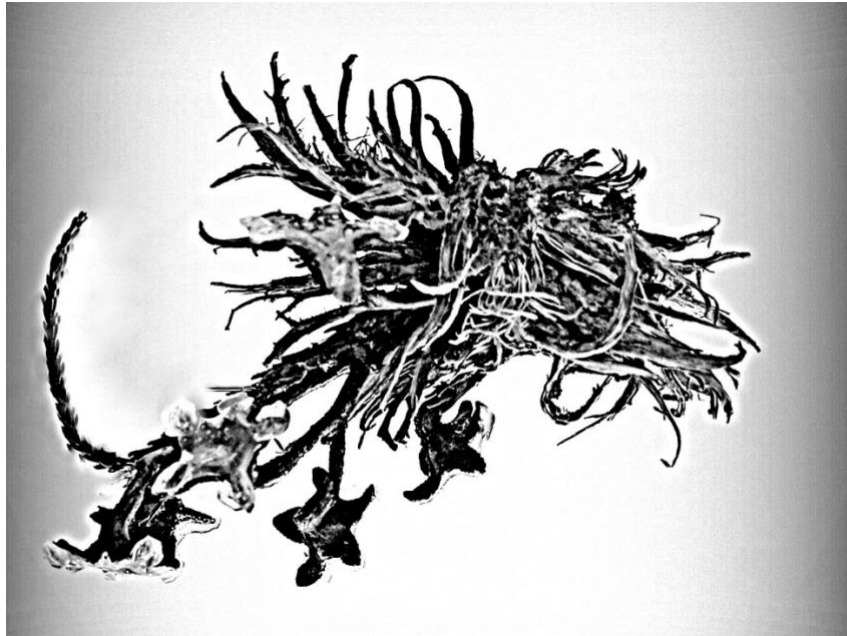
Life Span: Similar to cockroaches, currently approx. 18 months.

NB: It is thought the initial evolution of Flutter Wasps was slow to progress until cockroaches themselves had a sudden burst in population numbers at the end of the 21<sup>st</sup> century, when its natural predators (amphibians like toads/frogs, and small mammals such as mice/shrews) and most other insect populations crashed. Now that cockroach numbers have become swarm-sized worldwide, *Ampulex volitatio*'s numbers have increased alongside, although it remains to be seen if its parasitic nursery strategy will still be effective, as the cockroach's ever growth in size (currently up to 9.7cm in length with a wingspan of up to 20cm) evolves to accommodate the changing chemical makeup in the air supply and environmental conditions.

**Figure 14. Parasitic Flutter Wasp**



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2021)  
Exhibited: Lost Specimens, Tamarind Resort Hotel, Indonesia (2023)



Common Name: Samsonus Six

Scientific Name: *Gekko samsonus*

Specimen Length: 17.9cm

Specimen Sex: Male

First Described: AD 2098

Description and Habitat: The reptile Samsonus Six evolved in the mid-21<sup>st</sup> century from an outbreak of deformed six-legged tokay geckos indigenous to The Great Asian Delta, the area formerly known as Thailand. Swarming the swampland, they are highly fecund, managing the increasing extreme temperatures of the region by cleverly making use of their extra pair of legs, standing alternately on three at a time to avoid scolding the underside of their feet. They may not be covered in hundreds of tiny hairs like those of their ancestors *Gekko gekko*, but the underside of each foot still uses *Van Der Waals force*, fluctuations in charge distributions between neighbouring molecules that fall into synch to create an attractive force, now deployed amongst the cooling gelatinous texture more suited to this waterlogged environment.

*Gekko samsonus* was discovered by *Homo sapien* explorers re-entering the Nonthaburi Delta, once an area completely devoid of humans after the Great Anthropogenic Decline of Asia in AD 2059. Initially thought to be blind, all its sensory ability, intelligence and feeding capabilities are in its “mane” of highly advanced vibrissae, hence its namesake Samson, a character of extreme strength from the ancient little-known text, The Bible. Ingestion of sustenance and all forms of information,

along with the excretion of pheromones when looking for a mate or marking its territory, all move via its wild wieldy head, possible because brain, feeding and receptor cells sit side by side along each highly mobile tentacle.

Although poisonous to humans, *G. samsonus* are highly predated upon, the main food source for the many larger reptiles filling the swamps, as well as a few remaining terrestrial species and the highly abundant birdlife. Tests have shown its skin is highly salubrious, loaded with minerals and important vitamins absorbed from the surrounding nutrient-rich waterways. Like their ancestors, Samsonus Six are also able to utilize reparative regeneration after the loss of their tail when escaping attack, a new appendage fully reformed after 28 days.

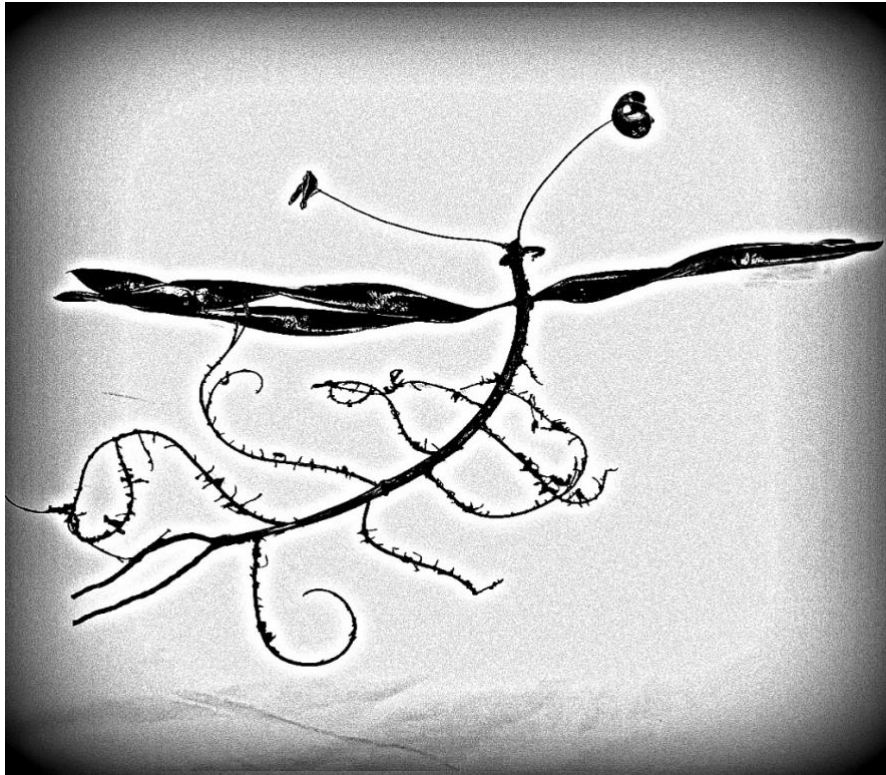
Reproduction: *Gekko samsonus* are oviparous, and after sexual reproduction the female will lay up to 1000 eggs over a period of several months, many at a time, depending on conditions. Due to perpetual rain and frequent flooding, finding a safe dry area is treacherous, but if successful, the eggs will incubate for up to three months before hatching into one-inch juveniles. Sexual maturity is usually reached at about one year.

Life Span: 30-35 years.

Figure 15, 16, 17. *Samsonus Six*



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2023)



Common Name: Burnt Titan Stick Insect

Scientific Name: *Acrophylla titan cremate*

Specimen Length: 281mm

Specimen Sex: Female

First Described: AD 2078

Description and Habitat: Descended from the Titan Stick Insect (*Acrophylla titan*) this phasmid has evolved to be perfectly camouflaged in the burned-out areas of forest commonly found in Australia and Indonesia where it lives. Usually black in colour, with either brown or mossy green highlights, females are easily identified as they are larger than the males, with a maximum recorded length of 30cm. Males have wings and are able to fly, whereas females do not. Having evolved to thrive on the wide variety of pollutants released by wildland fire, such as greenhouse gases carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), they also ingest photochemically reactive compounds such as carbon monoxide (CO).

Reproduction: *A. titan cremate* breed all year round. During the mating process, the male connects his abdomen to the lower part of the female's egg compartment. Mating can take up to 40 minutes and is repeated several times. The female's abdomen will swell with approximately 200 eggs (an individual will produce 2000 to 3000 eggs in its lifetime) and when ready, will flick each one to the

ground. Covered with a nutritious fleshy layer under a protective hard, fireproof exterior, each egg is kept safe until they hatch, although incubation rates are heat dependent, ensuring they only emerge when fire has died down and conditions are optimal.

Life Span: Males six to eight months. Females up to 18 months.

**Figure 18, 19, 20. *Burnt Titan Stick Insect***



First published on [Instagram.com/lostspecimens/](https://www.instagram.com/lostspecimens/) and [www.HelenMMitchell.com](http://www.HelenMMitchell.com) (2020)

Provoking such conversations is very important at this critical time in the Earth's history. As the environmental humanities scholar and professor Thom van Dooren posits, we have an obligation "to bear witness [as] an act of faithfulness to individuals and species whose worlds we, collectively, have destroyed" (Van Dooren, 2021, p. 1). Many of the tales told in this project are dystopian in the extreme; however, not all the examples are so dark. The Asian Tropics are a rich, fecund soup of weird and wonderful animals; so too is the guild of Lost Specimens. This endeavour was always intended as environmental protest art, a way to initiate discourse, to shine a light on our behaviour, how it affects all our ecosystems and encourage change; but so too is it a story of hope. In his continuing endeavour to keep these issues at the forefront of our cultural dialogue, Van Dooren seems to agree: "I don't think recognizing, respecting, and living with loss are things that ought to be done in opposition to hope—or at least they ought not to. Rather, they are themselves grounded in other kinds of hopes, even if it is only the hope that within the awful confines of the contemporary moment, we might cultivate the best modes of relationship and accountability with others that are still available to us" (Chao, 2021, p. 1).

Like many of their real-life counterparts, these mythical beasts have overcome the pressures to not only survive but also to thrive. Some not only adjusting to potential problems but evolving to benefit us all, as in the case of Miasma Milly.



Common Name: Miasma Milly

Scientific Name: *Prociphilus pollutius*

Specimen Length: 66mm

Specimen Sex: Male

First Described: AD 2267

Description and Habitat: Having evolved to feed on environmental pollution, this tenacious aphid thrives in particularly noxious habitats, ingesting toxins as its main food source, the by-product of which is excreted all over its body to produce a distinctive shaggy covering resembling the lichen commonly known as oak moss. *Prociphilus pollutius'* feeding mechanism is so proficient, it is considered an ESS (Environmental Status Signifier), and an individual's size and growth rate is in direct correlation with surrounding air, water, and land quality. Colouration varies widely depending on the chemicals consumed and temperature of their location, but opportunistic camouflage mimicry has also been observed.

It is not known if a specific event caused this indicator species to evolve—it is more likely the result of the many environmental disasters suffered by Indonesia—but the oldest DNA samples found were in the tropical forests of Borneo, leading to speculation that the huge disruption and frequent chemical release events during the construction of the new capital city in East Kalimantan may have been a catalyst. Whatever the reason, the continual environmental pollution endured globally over the 20th and 21st centuries allowed Miasma Milly's range to become worldwide, and it is now considered an essential tool in both monitoring and keeping our planet clean.

Reproduction: *P. pollutius* is only considered mature once its wings are fully formed, and in the wild all adults move to a new location to mate. The females lay egg mats of approximately 700 individuals, the nymphs forming large fungal-looking masses, which helps protect them from predators (usually cockroaches and some avian species) as their bodies are still relatively toxin-free at this stage, and therefore digestible to most other animals.

Lifespan: Variable, depending on food supply. Preservation records show that in the 22<sup>nd</sup> century they were known to live up to 25 years, the largest recorded reaching 16cm in length and 300gm in weight, but now environmental pollutants are rare, they are much smaller, some measuring only a few millimetres.

**Figure 21, 22. *Miasma Milly***



First published on Instagram.com/lostspecimens/ and www.HelenMMitchell.com (2021). Exhibited: Lost Specimens, T.R.H., Indonesia (2023); Vmes / In Between, Cankerjev dom, Slovenia (2024) <sup>2</sup>

## Concluding towards a Futuring

I have been asked if *Lost Specimens* is part of the current “neo-surrealism” trend permeating the art arena (Niveditha, 2023); that is for others to decide. I consider this rumination an extension of my travels throughout the Tropics; my creative process, a very personal line of research that wanders through my past artistic practices and present conservation efforts; so too my education into the future, an ever-evolving inquiry into science, history, philosophy and culture, hand in hand with Nature itself. *Lost Specimens* seeks to shine a light on the changes rampant in this fascinating area, from site-specific impacts to the topicalization blurring the boundaries of the zone itself, opening the door to a deeper understanding of ourselves. Our “Human First” mentality is a detriment to all living entities, but evolution takes time, and the majority of us barely notice how much other species are affected. Whether you believe many-worlds exist (a theory in quantum mechanics suggesting the co-existence of parallel universes with every eventuality and possible outcome) or just our own, considering how we respond to and within the more-than-human communities in which we live should be at the forefront of our cultural discourse. All existence is interconnected to some degree; the very blurification of these boundaries not only affects how we survive, but the very essence of our being. Therefore, we should seek to protect, respect and treat all entities with the care they deserve; it will be to our demise if we do not. Holding this mirror up to ourselves, we may dare to look, clearly observe, and perhaps perceive further than ever before.

**Figure 23. *Lost Specimens: Vmes / In Between Exhibit, May-June 2024***



Mala Gallery, Cankarjev dom, Ljubljana, Slovenia (2024)

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## Acknowledgements

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Many thanks to Peter Basset for his very large contribution with technical assistance throughout this project, and Susan Beebe, for her expertise and advise on Latin.

**Helen Mitchell** graduated with a BA(Hons) from Nottingham University, UK, in 1992. Helen's artistic vocation was put on hold for a career as a celebrity fashion stylist in America, whilst continuing to paint in her spare time. In 2006, she decided on a complete lifestyle change, becoming a semi-nomadic professional volunteer, thereby exploring other cultures, a choice that would forever change her view of the world. From working with exiled Tibetan refugees to teaching in schools and helping in animal shelters all over the globe, she eventually settled down to focus on ocean science and conservation, a sublime adventure into the weird and wonderful world of marine life that informs her current, and now full-time, artistic project: Lost Specimens.