THE OLDEST LIVING THINGS IN THE WORLD

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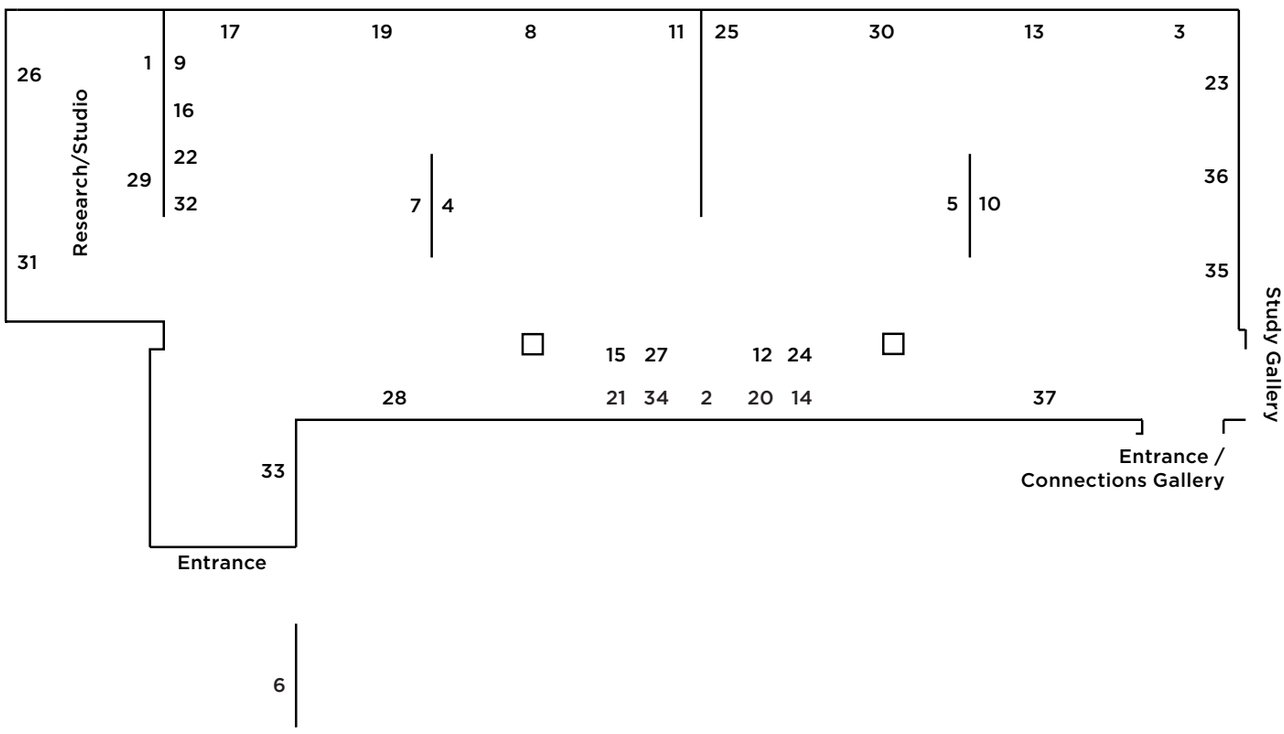

Exhibition Guide

ANTARCTIC BEECH

The Antarctic Beech that now live in Queensland, Australia used to populate Antarctica in its milder days...180 million years ago. As Gondwana broke apart and the south got colder, the Antarctic Beeches worked themselves northward to more suitable climes. Imagine the perseverance and the cooperation over generations it would require for some trees to make such a journey. Are we there yet? Their oldest surviving progeny are 13,000 years old. This particular tree is around 6,000.

1 *Antarctic Beech #1211-2717*
(6,000 years old; Lamington National Park, Queensland, Australia)

ANTARCTIC MOSS

Extending just beyond the Antarctic Peninsula in the Southern Ocean, the chances of setting foot on Elephant Island are remote on a good day. This 5,500-year-old moss bank lives right around the corner from where the Shackleton Expedition was marooned 100 years ago. South Georgia Island, 700 nautical miles from the Antarctic Peninsula, is a veritable paradise of animals, vegetation, and exposed geology. The 2,200-year-old moss on South Georgia was my younger, "back-up moss," living right around the corner from where the Shackleton Expedition was reunited with civilization after several years' survival post-shipwreck. A marine biologist protected me from aggressive fur seals as I photographed.

2 *Antarctic Moss #0212-14A05*
(2,200 years old, Antarctic Convergence, South Georgia Island.)

3 *Antarctic Moss #1202-7B33*
(5,500 years old; Elephant Island, Antarctica)

4 *Medusa kelp in Hercules Bay, South Georgia Island*

5 *Overland to Shackleton's Grave #0312-16A05, toward Grytviken, South Georiga Island*

6 *Elephant seal guarding Shackleton's grave*

BAOBAB

I drove around South Africa's Limpopo province for a week with a Baobab expert, who also took me to four ancient individuals. Baobabs get pulpy at their centers and tend to hollow out as they grow older. These hollows can serve as natural shelters for animals, but have also been appropriated for some less scrupulous human uses: for instance, as a toilet, a prison, and a bar. The Pafuri Babab lives within the boundries of the Kruger game preserve and requires an armed escort to visit. The Glencoe survived a lightning strike; it was partially uprooted, but those roots adapated into branches and the tree survived.

7 *Glencoe Baobab #0707-3307*
(2,000 years old; Limpopo Province, South Africa)

8 *Pafuri baobab #0707-1335*
(Up to 2,000 years old; Limpopo Province, South Africa)

BRAIN CORAL

I first learned to scuba dive in order to photograph this coral, which is about 60 feet underwater and about 18 feet across. Corals and sponges are the only animals that surpass the 2,000-year minimum required to be part of the Oldest Living Things project.

9 *Brain Coral; crest # 0210-4805*
(2,000 years old; Speyside, Tobago)

BRISTLECONE PINE

Bristlecone pines are the oldest unitary organisms in the world, known to surpass 5,000 years in age. In the 1960's a then-grad student cut down what would have been the oldest known tree in the world while retrieving a lost coring bit. A cross section of that tree was placed in a Nevada casino.

10 *Bristlecone Pine #0906-3033*
(Up to 5,000 years old; White Mountains, CA)

CHESTNUT OF 100 HORSES

Legend would have it that the Queen of Aragon got caught in a severe thunderstorm en route to Mount Etna. She and one hundred of her knights—and, presumably, their horses—all took shelter under the expansive canopy of a chestnut tree. The tree still bears chestnuts.

11 *Chestnut of 100 Horses & Fresh Lava #0412-1031*
(3,000 years old Sant'Alfio, Sicily)

CREOSOTE BUSH

King Clone, as the 12,000-year-old creosote bush is sometimes known, was discovered in the 1970's in the Mojave Desert. It is only ten miles from another ancient clone - the Mojave Yucca. Both have remarkable circular structures, both are adapted to the Mojave's extreme temperature range (from -20ºF up to 120ºF) and both live on what is now designatied by Bureau of Land Management as all-terrain vehicle "free play" area.

12 *Creosote Bush #0906-3905*
(12,000 years old; Mojave Desert, CA)

EUCALYPTUS

This critically endangered eucalyptus is around 13,000 years old, and one of fewer than five individuals of its kind left on the planet. The species name might hint too heavily at its location, so it has been redacted.

13 *Rare Eucalyptus (species redacted for protection) #1211-2233*
(13,000 years old, New South Wales, Australia)

GIANT SEQUOIA

While related to the Redwoods, the Giant Sequioas are generally older individually than their cousins to the north. There are four trees in Kings Canyon and Sequioa National Park that are known to be older than 2,000 years, though there are certainly many, many more. General Sherman is 2,200 years old, and the oldest confirmed age in the park is the Cleveland Tree, 2,890 years old.

14 *General Sherman #0906-1628*
(2,200 years old; Sequoia National Park, CA)

HONEY MUSHROOM

Armillaria Ostoyae, also know as Honey Mushroom or the Humongous Fungus, is a predatory fungus killing certain species of trees. With the help of maps and GPS coordinates from mycologists, I chartered a plane and set out to find the "death rings" - the patterns in which the fungus kills its victims by infiltrating the space between the bark and the wood and slowly strangling its host to death by blocking the flow or water and nutrients. It is hard to identify the rings with an untrained eye, but the fungus, which lives almost entirely underground, is below.

15 *Armillaria Death rings #0907-XXXX*
(2,400 + years old; Malhuer National Forest, OR)

16 *Armillaria #1106-2232*
(2,400 years old; Malheur National Forest, OR)

HUON PINE

Fire destroyed much of this clonal colony of Huon Pines (as seen in this photograph) on Mount Read, Tasmania, but a substantial portion of it survived. The age of the colony was discovered by carbon dating ancient pollen found at the bottom of a nearby lakebed, which was genetically matched to the living colony.

17 Dead Huon Pine adjacent to living population segment #1211-3609
(10,500 years old, Mount Read, Tasmania)

JAPANESE CEDAR

I made this image of Jomon Sugi, an ancient tree requiring a two-day hike on a remote island in Japan, while making landscape images about the relationship between humanity and nature. Over a year later I got the idea to bring together my interests in art, science and philosophy to create "The Oldest Living Things in the World," which I've been working on ever since.

18 *Jomon Sugi, Japanese Cedar #0705-002*
(2,180 to 7,000 years old; Yaku Shima, Japan)

LICHEN

I journeyed to Greenland where I met up with a Danish evolutionary biologist — who was also on the Siberian Actinobacteria team — searching for 3,000-year-old map lichens, which grow approximately 1cm every 100 years. We also worked with a team of archeologists using "lichenometry" as a tool to date Norse ruins in the region. They unearthed the gravesite by the Igaliku Fjord. Map lichens have also been used in astrobiology studies pondering the beginings of life on Earth. They were sent into outer space and exposed to outer space conditions for ten days. They returned completely healthy and in tact.

19 *Greenland Fjord*

20 *Lichen R. Geographicum #0808-04A05*
(3,000 years old; Alanngorsuaq, Greenland)

21 *Norse gravesite, Greenland*

LLARETA

What looks like moss covering rocks is actually a very dense, flowering shrub with clusters of tiny green leaves sprouting from densly packed branches. Llaretas happen to be a relative of parsley, living in the extremely high elevations of the Atacama Desert.

22 *La Llareta #0308-2B31*
(3,000+ years old; Atacama Desert, Chile)

23 *Llareta #0308-2B33*
(Atacama Desert, Chile)

24 *Llareta leaf clusters #0308-2498*
(Atacama Desert, Chile)

25 *Llaretal #0308-2B22*
(Including 3000+ year-old individuals; Atacama Desert, Chile)

LOMATIA TASMANICA

Growing in South West Tasmania, the 43,600-year-old lomatia is the only single genetic individual of this species left on the planet. What you're seeing here are clippings propagated for research at the Royal Hobart Botanic Garden. This lomatia is triplod, and therefore infertile, but has survived by cloning itself for 43,600 years. That renders it simultaneously critically endangered and theoretically immortal.

26 *Lomatia Tasmanica #1211-0398 (43,600 years old, propagated clippings; Royal Tasmanian Botanical Garden, Hobart)*

OLIVE TREE

An olive tree thought to have germinated back in the Greek Dark Ages, 3,000 years ago, still lives on the far western side of the long, narrow island of Crete. Despite its great age, the tree still bears fruit. Its branches are culled every four years to crown Olympic athletes with olive wreathes.

27 *Fallen olives #0910-4A04*
(Approx. 3,000 years old; Ano Vouves, Crete)

PALMER'S OAK

Situated in plain sight against some primal-looking geology not expected in Riverside, California, the 13,000-year-old Palmer's (in the upper right of the image), lived through the die-off of giant condors, mastodons, and saber-toothed tigers that once roamed Southern California. It now lives amongst the detritus of discarded meth labs and a cement factory.

28 *Lower Slope Leading to Palmer's Oak #0311-0828*
(13,000 years old; Riverside, CA)

POSIDONIA OCEANIA SEA GRASS

At 100,000 years old, the Posidonia sea grass meadow was first taking root at the same time some of our earliest ancestors were creating the first known "art studio" in South Africa. It lives in the UNESCO-protected waterway between the islands of Ibiza and Formentera.

29 *Posidonia Oceania Sea Grass #0910-0753*
(100,000 years old Balearic Islands, Spain)

QUAKING ASPEN

What looks like a forest is technically only one tree; each trunk is actually a stem coming from one giant, interconnected and genetically identical root system. That system has been self-propagating for approximately 80,000 years. Like all clonal colonies it is, in theory, immortal, constrained only by favorible external conditions.

30 *Pando, Clonal Colony of Quaking Aspens #0906-4711*
(80,000 years old; Fish Lake, UT)

SENATOR TREE

The Senator Tree, a 3,500-year-old bald cypress living near Orlando was burnt down in January 2012 by some kids who had snuck into the park to do meth inside the hollow berth of the tree, and started the fire while "trying to see the drugs better." One later posted about it on Facebook, leading to her arrest.

31 *Charred remains of the Senator Tree, Bald Cypress,*
killed January 16, 2012 (3,500 years old; Seminole co, FL)

SIBERIAN ACTINOBACTERIA

This digital optical microscopy image made at the Neils Bohr Institute, where the sample is kept frozen and must be handled using sterile lab procedures. It may be the oldest continuously living thing on earth. It is doing DNA repair below freezing, which indicates it has been alive in the Siberian permafrost - not dormant - for half a million years.

32 *Siberian Actinobacteria #0807-tV26*
(400,000 – 600,000 years old; Niels Bohr Institute, Copenhagen)

SPRUCE GRAN PICEA

This 9,950-year-old tree is like a portrait of climate change. The mass of branches near the ground grew the same way for roughly 9,500 years, but the new, spindly trunk in the center is only 50 or so years old, caused by warming at the top of this mountain plateau in Western Sweden.

33 *Spruce Gran Picea #0909-11A07*
(9,550 years old; Fulufjället, Sweden)

STROMALITES

Straddling the biologic and the geologic, stromatolites are bound cyanobacteria; organisms that are credited with oxygenating the planet via photosythesis begining 3.5 billion years ago, setting the stage for the rest of all life on Earth. The Carbla Station stromatolites are between 2,000 and 3,000 years old, and are the oldest living colony on the planet, though other living and fossilized beds can be found all over the world.

34 *Microbial Mat*
(2,000 - 3,000 years old; Carbla Station, Western Australia)

35 *Stromatolites #1211-0316*
(2,000 - 3,000 years old; Carbla Station, Western Australia)

UNDERGROUND FOREST

This little-known phenomenon occurs in bushvelt regions prone to a lot of fire. Several species of trees have adapted to take their entire structures - branches, trunks, roots - so that they are almost entirely underground and out of harm's way. This particular individual has since been destroyed due to a changed traffic pattern.

36 *Underground Forest #0707-10333*
(13,000 years old; Pretoria, South Africa)

WELWITSCHIA MIRABILIS

The Welwistchia is primitive conifer living only in parts of coastal Namibia and Angola where moisture from the sea meets the desert. Despite appearances, it only has two single leaves, which it never sheds. National plant of Namibia.

37 *Welwitschia Mirabilis #0707-6724*
(2,000 years old; Namib Naukluft Desert, Namibia)

Sussman hand-titles each work in a nod to scientific field notes. The titles are comprised of: the organism name, date photographed plus catalog number, followed by the age and location.

All images are archival pigment prints on photo rag paper. Most prints are made from 6x7 medium format negative film and printed on Hahnemuhle 308 paper, and are available in the large-sized editions of 5, and in mixed, small-sized editions of 10. For more information contact me@rachelsussman.com.

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