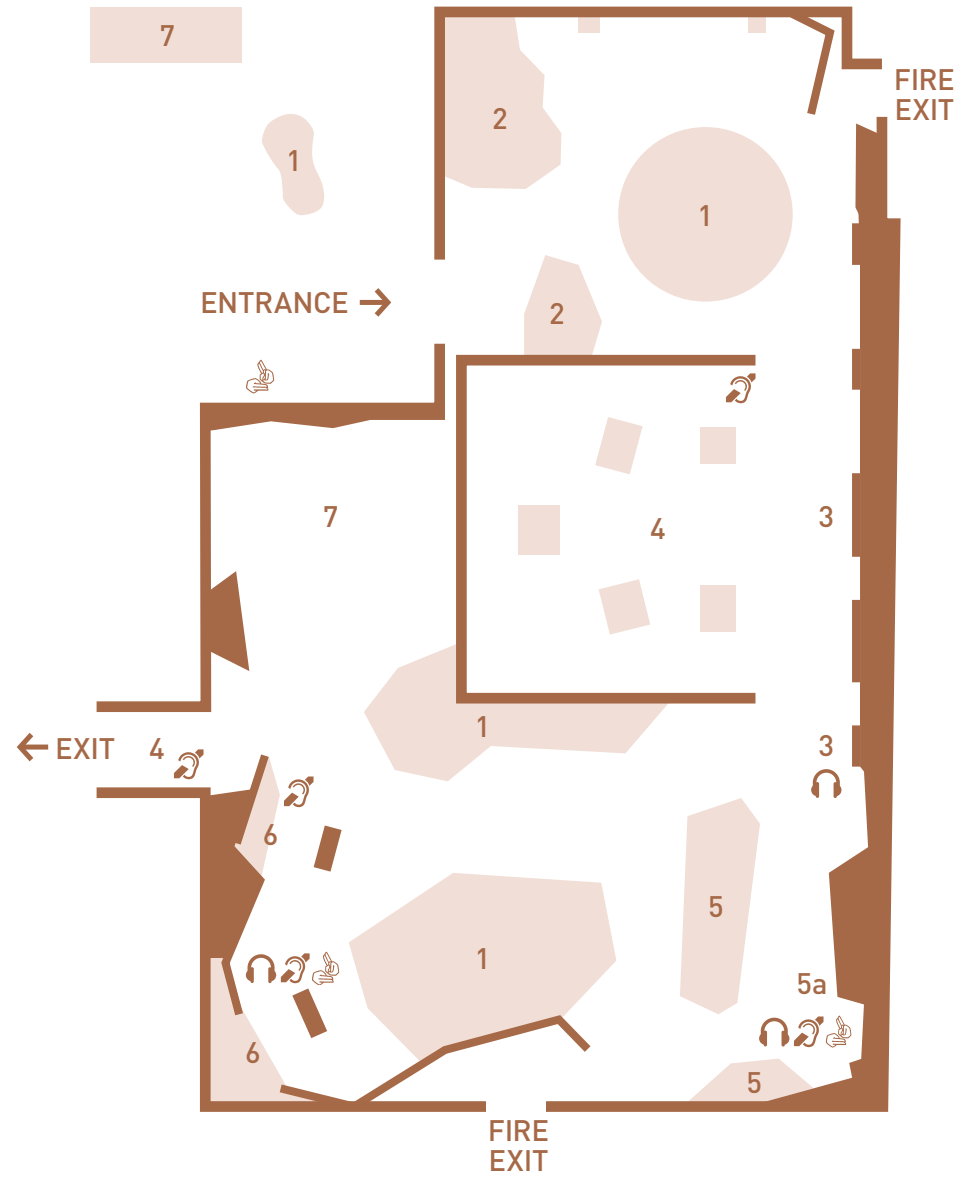


The background of the entire page is a light beige or cream color, overlaid with various dark brown shadows of plants and leaves. The shadows are semi-transparent and create a layered, organic texture. Some shadows show distinct root systems, while others show broad leaves and thin stems.

**wellcome
collection**

ROOTED BEINGS

24 March–29 August 2022



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INTRODUCTION

“The plants’ rootedness in a place, their fidelity to the soil, is something we can only admire, especially because our condition is that of an increasing and merciless uprooting.”

Michael Marder, Ikerbasque Research Professor of Philosophy, University of the Basque Country UPV-EHU, Vitoria-Gasteiz

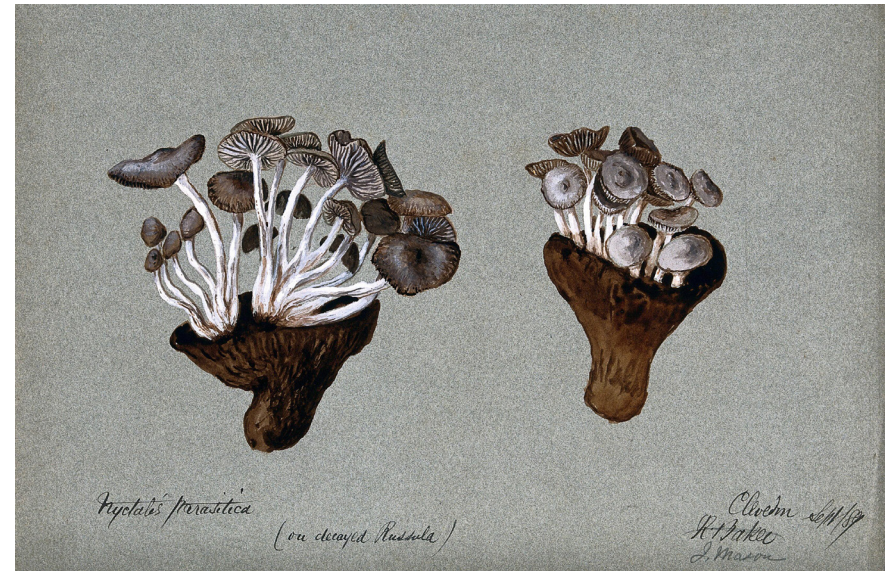
“I want to warn the white people before they wind up tearing the sky’s roots out of the ground.”

Davi Kopenawa Yanonami, shaman and spokesperson for the Yanomami people in Brazil

Plants, fungi and humans exist in a symbiotic relationship. They produce the oxygen we breathe while absorbing the carbon dioxide we release – every act of breathing is an act of deep communion with them. Plants are sensitive beings, attentive to the elements, connected to lifeforms around them rooted in the earth and soil, but constantly adapting to survive and flourish.

Rooted Beings honours the significance and agency of these ancient, complex and sensitive beings, moving beyond our perception of them as a passive resource, reimagining our relationship with plants, and what we might learn from them.

Our vegetal companions emerged from the water and colonised the land 450 million years ago. Only 300,000 years ago, *Homo sapiens* evolved and 13,000 years ago, humans began cultivating plants through agriculture in a reciprocal process of domestication. The cycle of ploughing, collecting and grinding grains shaped the foundations of the modern world.



Parasitic fungi (*Nyctalis* species) growing on decayed *Russula* fungi; R. Baker, 1889. Wellcome Collection

In turn, agriculture rooted human culture, as farming replaced the nomadic hunter-gatherer existence. Today, humans represent only 0.01 per cent of the world’s biomass, but our way of life has led to the extinction of many species. Our use of plants in food, medicine and trade values them as resources for our consumption, but damages the fragile entanglements between human and non-human lives that form our vital ecosystems. Geologists have named our epoch the ‘Anthropocene’, a period in which human activity, including climate change, has had a significant impact on Earth’s geology and ecosystems. Meanwhile, philosophers are calling for the ‘Symbiocene’, or period of reintegration between humans and the rest of nature to “enhance mutual interdependence and mutual benefit for all living beings



The Ground Opening: Mourning and Birth, Gözde İlkin, 2020 © the artist. Commissioned by the 13th Gwangju Biennale. Photo: Nazli Erdemirel

(which is desirable), all species (essential) and the health of all ecosystems (mandatory)”.¹

The exploitation of plants was amplified to a global scale during the scientific expeditions to Latin America in the 18th century, when European colonial administrations collected hundreds of botanical specimens. These were kept in botanical collections such as those held at the Royal Botanic Gardens, Kew. Indigenous knowledge was appropriated and codified in manuscripts, which are now held in museums including Wellcome Collection. Plants were separated from the cultural and ecological ecosystems they belonged to, devastating ecosystems and uprooting populations.

¹ Albrecht G. 2016. “Exiting The Anthropocene and Entering The Symbiocene,” *Minding Nature* 9

Rooted Beings is introduced by a series of embroidered textiles by Gözde İlkin, which present visions of creatures that transcend human, animal and plant categories. The exhibition is then loosely structured into three themes – Symbiosis, Colonial Violence and Indigenous Knowledge, and Wildness – which, like the roots of plants, are entangled with one another.

SYMBIOSIS explores our complex interdependence with the vegetal world, from our instrumental use of plants in medicine and agriculture to their role in the spiritual realm. It shows how plants themselves share resources via complex networks of mycorrhizal fungi and benefit from animal interactions, such as pollination.

The Johnson Papyrus from 400CE, is thought to be the earliest existing fragment of an illustrated herbal used for medical purposes: an ancient example of our instrumental relationship



The Inner Ocean: The Passion Flower, Ingela Ihrman, 2019. Photo: Åsa Lundén / Moderna Museet-Stockholm



Untitled, Joseca, 2004-19. © Joseca. Photo: Fondation Cartier pour l'art contemporain, Paris

with plant life. Ingela Ihrman's passion flower sculpture is part of a series of blooming flower performances in which people pollinate the plant in a symbiotic act. The Jambudvipa diagram depicts the 'land of Jambu trees': the realm of human beings in Hindu, Buddhist and Jain cosmology. Jainism teaches that plants, animals and elements like air and water have souls – *jiva* – as well as humans.

COLONIAL VIOLENCE AND INDIGENOUS KNOWLEDGE

anchors the exhibition with a futuristic installation by Patricia Domínguez. This new commission uses South American and European collections at the Royal Botanic Gardens, Kew and Wellcome Collection to explore narratives of colonial and neo-colonial violence and to honour indigenous knowledge on healing and nurturing ecosystems. It is presented in dialogue with drawings by Joseca, a member of the Yanomami community in the Brazilian Amazon. The Yanomami people lead

a constant struggle to defend their lives, rights and protect their home from deforestation, mining and infectious disease. His detailed drawings illustrate the significance of trees as central to the ecosystem that supports us all.

WILDNESS collapses the artificial wall between nature and culture, challenging the hermetic conception of the human being as an independent entity. It invites us to relinquish control and 'rewild' our land and our minds, to allow biodiversity to recover and ecosystems to restore themselves, both inside and outside our bodies. Eduardo Navarro's newly commissioned drawings – which contain latent London Plane tree seeds – function as an emotional technology, a tool that allows us to develop trust, empathy and connection with non-human entities. Ingela Ihrman's seaweed sculptures suggest a link between ocean ecosystems and the amniotic fluid and gut flora in our bodies. The installation by Sop explores the



Untitled (Magic circle of projection of twigs at the base of the oak tree in the Den) Sop, 2021. Commissioned by Wellcome Collection

importance of a secret den in the wood near their house in London during lockdown, the importance of urban nature and the ‘uncultivated, unattractive spaces in-between’ as Sop describes them. Finally, RESOLVE Collective present a new commission that excavates layers of wildness in the city and encourages young people to explore their world as agents of the ecosystem.

In this guide you will find essays by researchers Cristina Nieto and Angelica Muñoz, which expand on some of these ideas. In *The Conquest of Terra Firma*, Cristina Nieto outlines the long history of plant life and calls for reciprocity in our relationship with plants – after all they have done for us. Angelica Muñoz’s poetic text, meanwhile, proposes a reverse journey of plant specimens and seeds collected during the colonial expeditions and celebrates a vision of the “Body, mind, the spiritual, animal and vegetal worlds harmonised: the pluriverse of the living.”

Rooted Beings invites you to embark on a meditative reflection on the vegetal world and what we can learn from it: to be rooted, attentive, flexible and caring – to attain vegetal enlightenment.

Bárbara Rodríguez Muñoz, Curator

“Trees understand crip time. My kin, I want to slow down to your rate. Human time is too fast for me. I choose you. My imprint is slight, but you have spoken to me and I receive your messages. I feel your age, your slow patience, the flexibility of your strength, from root through rings through fluttering leaves, renew, rot, renew.”

— Sop, artist, from *The Den 3*



We Wunt Be Druv / Tings Nuh Run We, RESOLVE Collective, 2022.
Commissioned by Wellcome Collection, De La Warr Pavilion and West Dean College of Arts
and Conservation

VEGETAL TRANSMUTATION

Eduardo Navarro and Michael Marder

Please use these performative instructions to explore the exhibition, the artworks and the space as a plant would.

Take a moment to draw a cosmic breath with your whole body, slower than any breath you have ever taken in your life.

Close your eyes. See and hear with your skin as you embody the density that emanates from within the seed of your thoughts. Register the vibrations rippling throughout the space around you and the radiant waves enveloping you. Caress the air with your hands, petting its flows with each fingertip. Feel how grounded, yet free, you are – stable, but supple.

Your skin is more than skin. It is at the same time an enormous leaf in which your whole body is wrapped, as well as a respiratory system and a number of sense organs, photosensitive and acoustically engaged.

Break out into light while staying connected to the dark and the obscure. Your fingers are roots and branches. There are more fingers branching out from your fingers in order for you to hug the earth and

the sky better, more thoroughly. One arm stretches tall; the other seeks deep in the soil. Span these extremes with your midsection: your chest, your trunk. Pay equal attention to both arms, orientations, worlds. Receive the kisses of the sun on your eyelids, ears, mouth, cheeks, fingers... Imbibe the cool moistness of the earth with the other arm and a part of your trunk. Become the crossing between the warmth that gently touches you and the coolness you soak up.

Your limbs rotate in every direction, weightlessly reaching out to light and to darkness. Grow little by little, both intensively in time and extensively in space. Contract, minimize yourself, decay. Grow from contracting; contract from growing.

Focus on the soles of your feet as they absorb energy from planet Earth with every breath. Concentrate on the crown of your head, receiving the energy of the atmosphere. More like a tree crown, it is no longer a head. Think as you are breathing and perceiving – with your whole body,

skin, limbs, lips, tips and edges. Do not hoard thoughts in your brain. Instead, let them circulate, like sap, in every part of yourself.

You are in an endless state of communion and infinite contemplation with other natural elements and beings. Can you see with your skin and hear with your arms? Can you think together with the air and the sun and the soil? Can you dream with your feet? Imagine with your fingertips?

Perhaps, there are other plants sharing the space with you. Acknowledge these vegetal beings as you gradually move around in a wordless communicative practice. Experiment with the language of gestures, of physical expressions and forms. A choreography of touching without touching: the language of plants.

Move in the place where you are and sense the place moving along with you, growing and contracting rhythmically. Care for your place and for your attachment to it. You do not

have your place; the place embraces you in itself. Render it equally welcoming, open to others.

Experience your place as always the same and radically different, ramified and attuned otherwise in each instant. What does it mean for you to be at home there?

Your breathing is in constant dialogue with your surroundings. Breathe in your depths, with the lungs, and on the surface, with the skin. Re-establish the ties between inner and outer breathing to sustain a respiratory conversation with the world. Root in your body through this double breath.

Inhale the space, exhale the sky.

You are tending to your impulses, decisions and actions on a horizontal plane, letting them become a holistic garden. Nurture it with your breath and the humid density of the obscure ground, from which they spring.

As you are very slowly dying, while also staying alive, your body

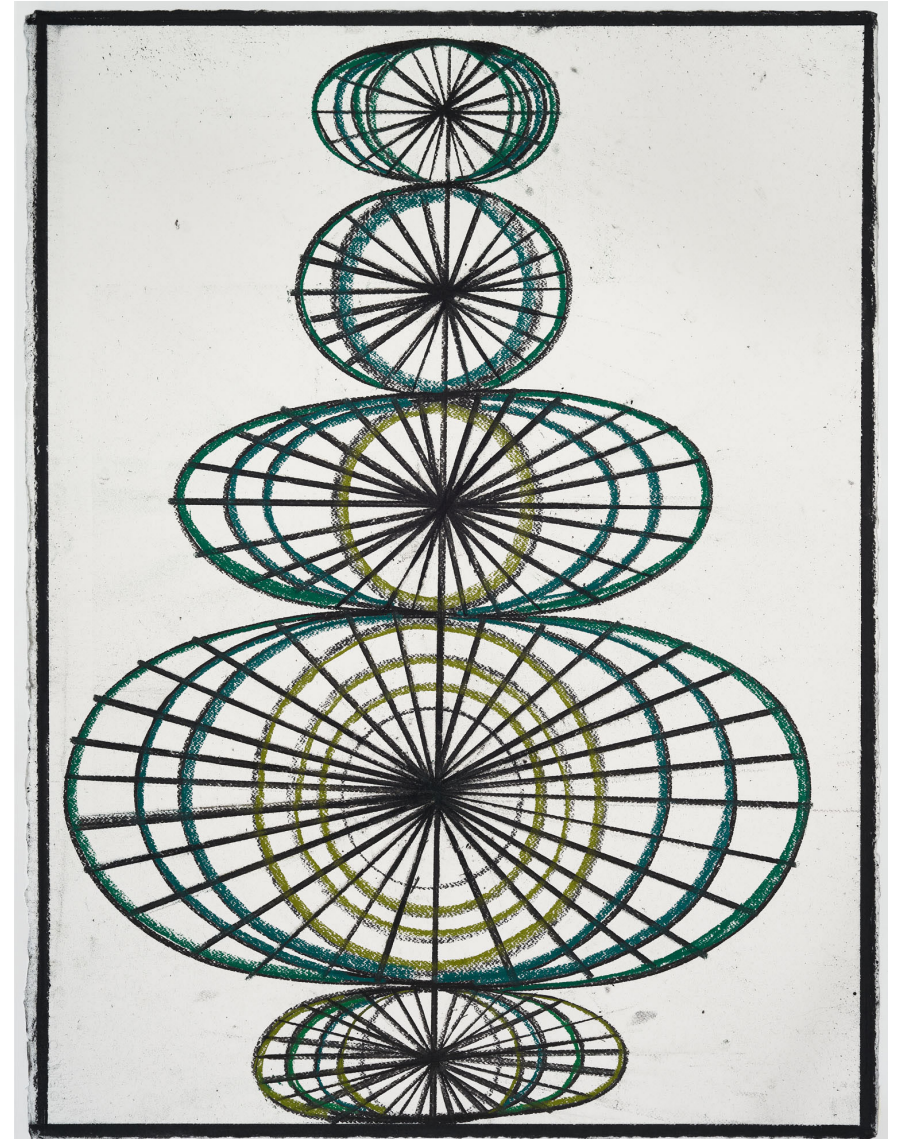
becomes the soil you are living in.
You are perpetually feeding yourself
and others in a delicate equilibrium.

Feel the slow rotations of the cycle
of life. In tandem with it, let fresh
sprouts, bulbs and seeds in the space
gradually take over. Nourish and
support them from below. Allow the
subtle movements of air and visible or
invisible winged creatures to carry your
seeds and pollen like messages across
time. Disseminate yourself, holding
nothing back.

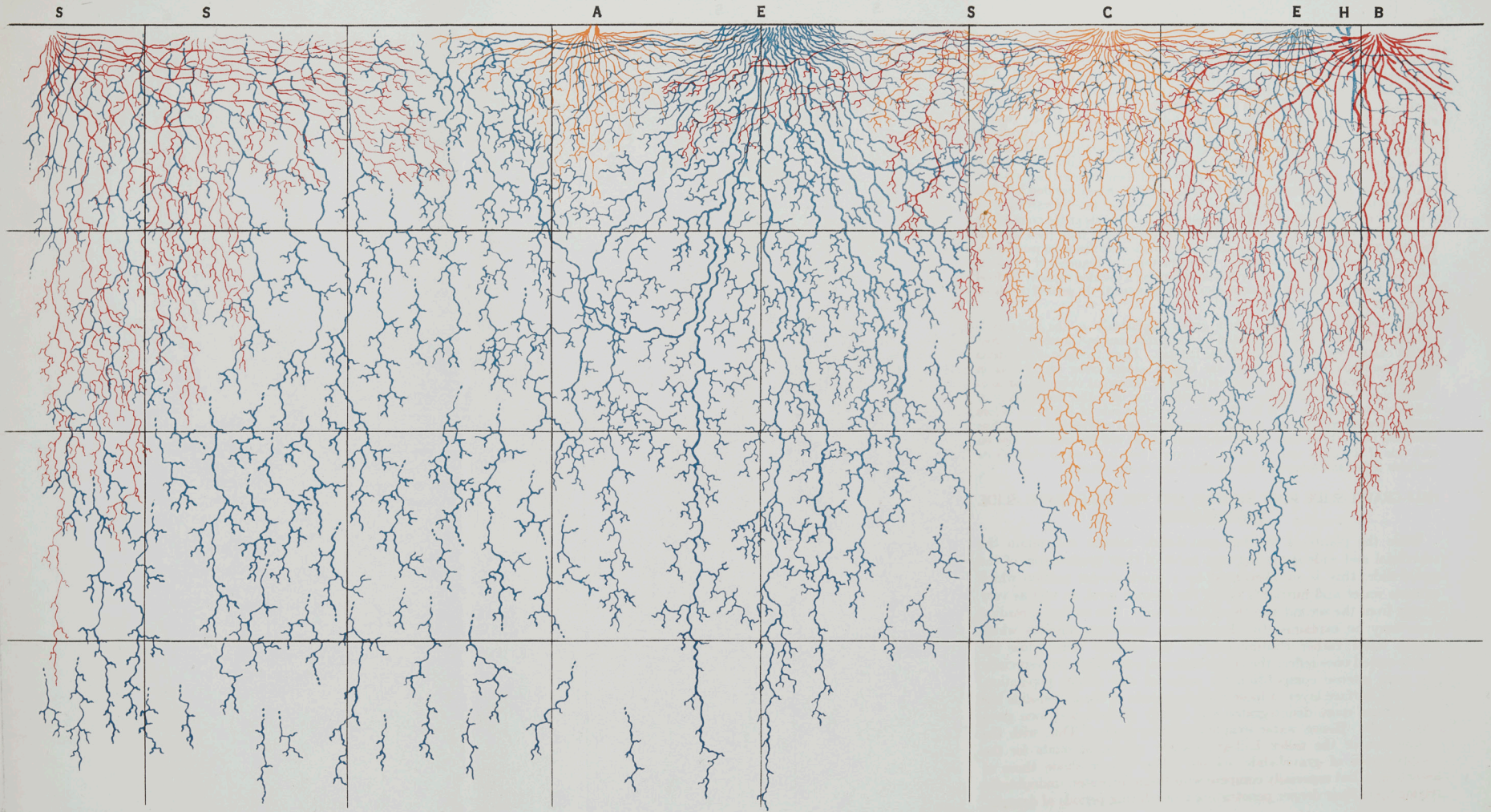
Repeat outside the space, weightlessly
reaching out to light and to darkness.

Eduardo Navarro, artist and Michael Marder,
Ikerbasque Research Professor of Philosophy,
University of the Basque Country UPV-EHU,
Vitoria-Gasteiz, 2020

Performed in the exhibition by Monica Gagliano,
evolutionary ecologist and public science
communicator, with British Sign Language
interpretation by Rubbena Aurangzeb-Tariq



Photosynthetics, Eduardo Navarro, 2020. Commissioned by Wellcome Collection and La Casa Encendida, in partnership with Delfina Foundation



Quadrat-bisect in the half-gravel slide. The face of the trench was cut along the front of the quadrat shown in Plate 26 A: S, *Solidago oreophila*; A, *Allium cernuum*; E, *Elymus triticoides*, fragments of which are represented in blue; C, *Calamagrostis purpurascens*; H, *Heuchera parvifolia*; B, *Besseyia plantaginea*.

THE CONQUEST OF TERRA FIRMA

Cristina Nieto

The long vegetal history on earth begins with a series of organisms that made use of the energy of the sunlight to convert inorganic substances into organic matter, by capturing carbon dioxide and releasing oxygen during the process. Outside of their original aquatic habitat, photosynthesis became essential for terrestrial life. Today, we cannot conceive of life without oxygen and are increasingly aware of the fact that carbon dioxide could do away with us altogether.

A long journey was required before the form of life we now know. Photosynthetic eukaryotes (cells with nuclei), armed with chloroplasts, conquered all the environments in which light and water were present, such as oceans, rivers and lakes. They adopted many different forms and functions and scattered throughout freshwater and saltwater, but that wasn't enough. Of this great photosynthetic family, one privileged lineage managed to escape the waters and thrive on land: terrestrial plants.

Those primitive plants, the brand-new occupants of a freshly conquered world, faced a hostile environment. Adapted for growth in

the water, which served as a shield against the sun, they developed pigments that protected them from the sun's ultraviolet rays. They constructed a vegetal wall that gave them stability and allowed them to develop asymmetrical structures and alter their morphology in accordance with their needs. They did not forget to manufacture their own vascular tissue, whose role as a 'pipeline' for water and nutrients enabled them to scale another rung on the ladder of evolution. They covered themselves with cuticles – which served as sheltering shields against their enemies – developed stomata and breathed in relief. They also wove a complex and highly precise network of vegetal hormones with which to respond to the stimuli they constantly received. Finally, they designed an infinite variety of hardy seeds that allowed them to multiply from generation to generation. Fortunately, not everything was a struggle. Terrestrial life facilitated a beneficial association between plants and fungi. Such symbiosis helped to improve the absorption of nutrients from the soil and made it easier for plants to conquer the land. Then came the best of evolutionary developments: flowers. These green organisms painted their sexual

organs in bright colours in order to attract pollinators, thus ensuring reproduction.

The rest is well known. The birth of agriculture made it possible for human populations to change their way of life, which led to the appearance of the first civilisations. As autotrophic organisms, plants are the basis of the trophic chain and make up the vast majority of the planet's biomass. They are biofactories of oxygen and sinks for carbon dioxide and other pollutants. Domesticated, they have provided us with an almost unlimited variety of leaves, seeds, roots, fruits and flowers, all tailored to our needs. Plants temper the climate, they feed us, heal us and take care of one another. They are possessed of a sense of community, and they protect each other, as in the case of sunflowers, which turn their leaves to one side or the other to keep out of one another's way.

The second part of the story is a little less hopeful for humans. Throughout the Anthropocene, in our role as super predators, we have widely overtaxed the generosity of plants, and our way of life has led to the extinction of many species. We know

for certain that the future belongs to plants, which will continue to populate the *terra firma* after we have disappeared and may even be relieved when we are gone. After all they have given us, the time has come for humanity to nurture them. Reciprocity with the vegetal world is the only path for us to take to become truly 'rooted beings'.

Glossary

eukaryotes: The cells of animals, plants and fungi, which contain a nucleus and are enclosed by a membrane.

chloroplast: A cell organelle occurring in green seaweed and plants that carries out photosynthesis.

vascular tissue: A system of conduits made up of the xylem, which transports water and nutrients from the roots to the leaves, and the phloem, which distributes the nutrients resulting from photosynthesis among the rest of the vegetal organs.

stomata: Small pores occurring in the leaves and stems of plants, which

serve for the exchange of gases with the external environment and regulate the loss of water of vegetal tissues.

autotrophic: An organism that is able to produce its own food through the use of the energy of light or of inorganic chemical reactions. These organisms are also called primary producers since they do not require living sources of carbon or energy.

trophic chain, or food chain: The flow of energy and nutrients that begins with photosynthesis and moves between the different species of an ecosystem. In a biological community, each series of organisms that feed off the preceding level and serve to feed the succeeding level.

Anthropocene: The period during which it is deemed that human activity began to have a global impact on terrestrial ecosystems. Some authors define it as beginning with the advent of agriculture, while others place its starting point at the time of the Industrial Revolution towards the end of the 18th century.

Cristina Nieto, Researcher, Centro de Recursos Fitogenéticos-INIA, 2020



Doctrine of signatures: plant resembling a bee, unknown maker, 19th century after 17th century woodcut by Giambattista Della Porta. Wellcome Collection

PERCEPTIVE ACTIVITY

Angélica Muñoz

I

Plants shed the sheets of paper
regaining moisture, volume and colour.
Regaining their life.

Labels peel off; descriptions and classifications
are erased.

Latin nomenclature disappears: Brugmansia, Datura,
Banisteriopsis caapi, Psychotria viridis, Cinchona
officinalis, Mandragora autumnalis.

Seeds abandon the boxes in which they are
preserved.

Plants abandon the botanical garden.

Herbariums and Natural History collections
empty out.

The empire's ships leave their harbours in conquered
lands and sail in reverse.

Seeds return to the hands of those who were forced
to sow them.

The monoculture of imported species vanishes.

Enslaved labourers return to their homeland and
recover their freedom.

The ravaged fields are once again populated by
a multitude of native species.

The usurped lands return to the care of ancestral
communities.

The exogenous seed leaves the geography where
it does not belong, where it is foreign and unknown,
where it is un-respected.

The species are not discovered.

Routes of dispersal dissolve.

The plant does not reach the pharmaceutical
industry; it is no longer a commodity, nor sold,
nor patented, nor trademarked.

The colonial plantation system crumbles.

Modern Western botany loses its hegemony.

Christian sources no longer Satanise the traditional
medicinal uses of plants.

Ritual and magical bonds to the plant kingdom
are no longer reduced to myth, folklore or mere
representation.

Their sacred rites and ceremonies are not debunked
as irrational or primitive or savage.

The persecution of ancestral spiritual authorities
ceases.

The expansion of the empire wanes.

II

Seeds germinate in their native soil.

In the warmer regions of Central and South America,
in the western Amazon,

in the temperate and humid mountainous regions,
along the Andes in Colombia to northern Chile and
even the southeast of Brazil, in the misty forests,
in southern and central Europe and around the
Mediterranean.

Vegetal beings grow.

Healing, powerful, propitiatory or punitive, visionary,
sacred, symbolic, wise: magical plants.

Those who know them call them Angel's Trumpet,
Borrachero, Toá...; Toloache, Mihayi, Huacacachu...;
Quinine or Peruvian Bark; Yage, Ayahuasca, Caapi
and Chacrana...; Mandrake.

Medicine.

They open portals of knowledge and healing
to traditional medicine men and women, taitas,
grandmothers and grandfathers, healers, dreamers,

feelers, knowers, curacas and machi.

Spiritual authorities that are recognised, accepted and respected by their communities.

Thanks to their manifold powers, visionary plants serve as antidepressants, anaesthetics, aphrodisiacs and fertility enhancers.

They favour the favourable, counter evil, differentiate between sacred and profane spaces, invoke supernatural forces, benign or evil, and provide protection.

In the form of punishment, they are capable of annulling the will, producing pain or discomfort, bringing poverty, causing madness and even death.

Medicinal plants are collected with respect for the protective spirit of their native land.

The sacred plant is extracted only as much as is needed to serve the healing purpose.

The people retribute by protecting the plant and protecting its sacred territory.

The bond between the plant, human and non-human worlds is reciprocal.

Knowledge of their powers reaches the present through dreams, careful observation and initiatory practices.

III

Ritualised space and time, as well as music and song, enable the alliance with vegetal beings to communicate with the questioning world.

The sacred plant modifies direct perception: filling its gaps and enriching it.

Healers embark on 'magical flight', they attain remote vision, they interpret the signs, omens, imperatives; they

diagnose and cure.

Complementarity governs the bond between plant, human, and invisible worlds.

Each becomes a mirror of the other.

Female and male forces combine and form alliances, the same among plants, humans and more-than-humans.

Body, mind, the spiritual, animal and vegetal worlds harmonised: the pluriverse of the living.

A scanner captures the image of a plant along with a coloured card and a ruler.

The plant now circulates in the abstract space created by 1s and 0s.

It can be enlarged, shrunk or even downloaded.

They say that observing the plant reveals its properties to the suitable reader.

In heavily westernised cultures, visionary plants are primarily perceived as toxic drugs.

But the difference between a poison, a medicine and a psychoactive drug is only the dose.

The same substance is considered legal or illegal depending on the cultural context and the historical moment.

Appropriation.

Biopiracy and large-scale extractivism, the new forms of colonialism that silence numinous knowledge and subjugate peoples.

Ancestral authorities are imprisoned, even murdered, for defending their territories.

Their communities are displaced.

Indigenous peoples reclaim their right to the ritual use of sacred plants.

Ritual and medicinal uses of plants are also forms of resistance.

The digital paradigm, ruled by unbridled neoliberalism, brings new disease, trauma and malaise.

We create new totems and new rituals.

The body is reunited with its ancestral memory and its contemporaneity through sacred plants. Alliances are woven between the organic plant, digital and body technologies.

The system is hacked.

Angélica Muñoz, Researcher of contemporary artistic practice

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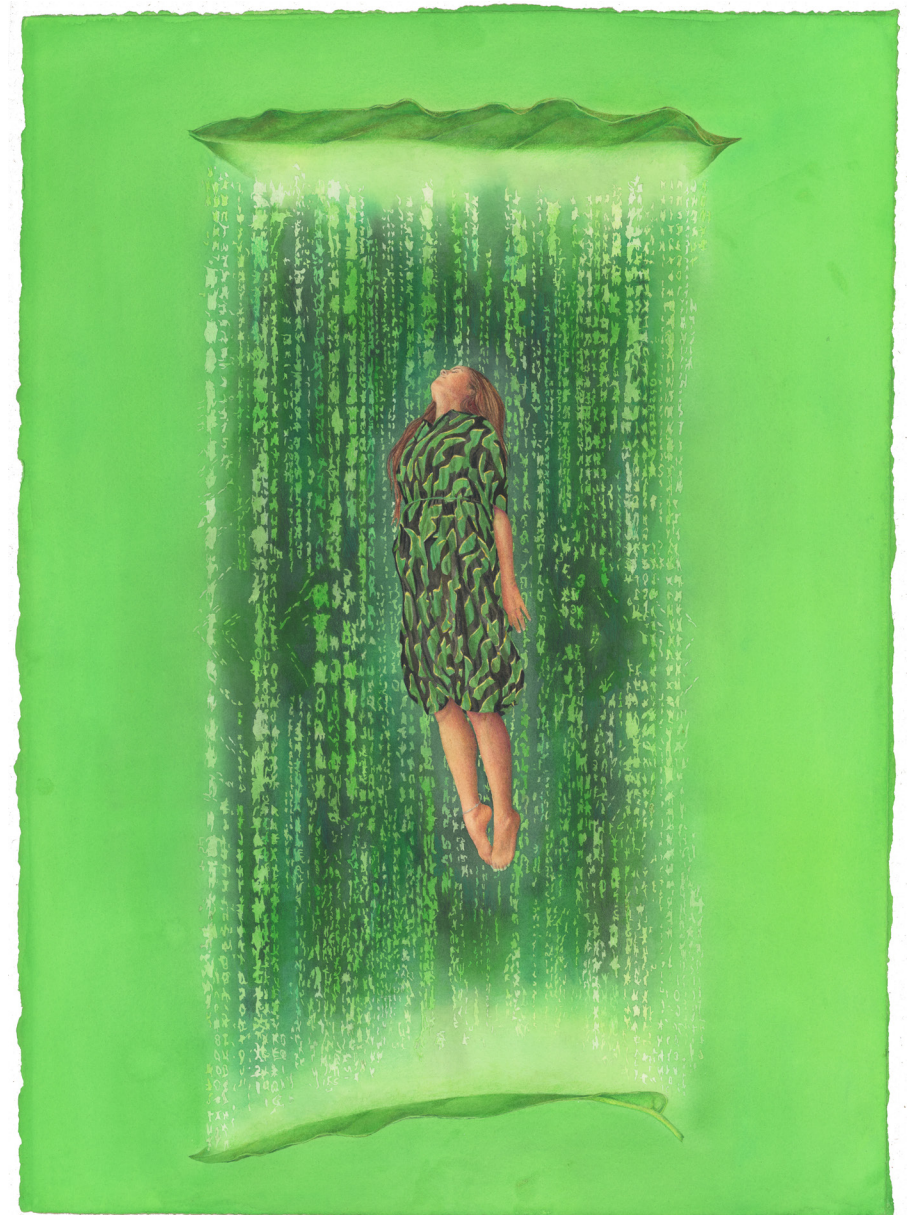
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Matrix Vegetal; reorder my hologram in its best version, Patricia Domínguez, 2020. Commissioned by Wellcome Collection and La Casa Encendida, in partnership with Delfina Foundation

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Rooted Beings is a collaboration between Wellcome Collection and La Casa Encendida, Madrid. Commission partners: Delfina Foundation, De La Warr Pavilion, West Dean College of Arts and Conservation.

A newly commissioned anthology of radical nature writing accompanies the exhibition. *This Book is a Plant: How to Grow, Learn and Radically Engage with the Natural World* is a handbook to a new way of seeing plant life around you. RRP £14.99 available online and in your local bookshop.



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