

# Chapter 1

## Vegetal Agency

The threat to vegetal biodiversity posed by anthropogenic changes to Earth systems is prompting a renewed alertness towards beings that Western epistemology regularly dismissed as unmoving, inactive, unthinking, unfeeling and inanimate. It was on such grounds of treating plants as less developed than their animal or human counterparts that, as Michael Marder asserted in *Plant-thinking: A Philosophy of Vegetal Life*, they became ‘unconditionally available for unlimited use and exploitation’. Opening up the modern discussion of vegetal consciousness and plant agency, Austro-Hungarian botanist Raoul Heinrich Francé observed in his 1905 study *Germes of Mind in Plants* that ‘the plant possesses everything that distinguishes a living creature – movement, sensation, the most violent reaction to abuse and most ardent gratitude for favours’. Plants operate according to a specific set of principles based on their modular and distributed strategy for interacting with the world, which, as Stefano Mancuso noted in *Brilliant Green*, enables them to ‘breathe without lungs, nourish themselves without a mouth or stomach, stand erect without a skeleton and make decisions without a brain’. Plant neurobiologists have explored the particular ways in which plants detect light and dark, notice and react to touch, engage in sexual relations and deploy chemicals and scents to warn each other of danger, deter predators and attract pollinating insects. In contrast to animals, plants acquire everything they need to live from the earth, the air and the sun, moving to capture light and escape danger and even migrating in response to climate change. Vegetal agency is also demonstrated in their ability to start symbiotic relationships with other organisms, such as bacteria, fungi and insects, as well as humans, whose help they enlist in getting transported across the world.

68 The disembodied rationale of modern science, which maintained ‘mastery of intellect over body’ through an insistence on ‘(masculine) objectivity’ was at the core of the research project *Describing in movement/Observing through embodiment* (2020) by Romanian artist Alexandra Pirici. Challenging the traditional preference for the technique of drawing as a way of recording natural history, she proposed activating the entire body as a medium through which to perceive and learn about the world, devising a choreography for exploring the dynamics of plant life to expand the anthropocentric understanding of the notions of sociality, relationships and intelligence. A set of exercises dealt with vegetal phenomena such as crown shyness, when branches of different trees grow close to each other, negotiating space and access to light while avoiding direct contact. Another sequence was concerned with hanging or epiphytic plants, which, although they feed independently, need a support-body in order to grow, move and have access to light, seen in the wandering movement of the vine in relation to its assisting structure. Singling out dance as a means to reappropriate bodies that have been automated, alienated and enslaved by the capitalist system, feminist theorist Silvia Federici, in *Beyond the Periphery of the Skin*, has described it as ‘a process by which we relate to the world, connect to other bodies, transform ourselves and the space around us’. In that sense, Pirici’s choreographic exercises were also intended as a self-development tool for non-professional performers, a rehearsal for new forms of collaboration that hold out the potential to activate sensuous relationships in more-than-human worlds.

69 ‘The chemical language of plants is a complex form of communication, which our human senses are too dull to comprehend,’ observed artist and composer Christine Ödlund in relation to her work on translating plant conversation into music. The score of her electro-acoustic piece *Stress Call of the Stinging Nettle* (2010) was based on scientific observation of the reaction of stinging nettles to being attacked by butterfly larvae, whose leaf-chewing results in the release of a chemical distress signal by the plant. Collaborating with ecological chemists at the Royal Institute of Technology in Stockholm, Ödlund developed a method of olfactory synaesthesia that entailed sniffing concentrated samples of the scented nettle signals and matching each with a colour and an acoustic effect. Compressing biochemical changes taking place on nettle leaves over a period of days into a musical composition lasting minutes, the artist set out to convey the extended timescale over which communication between plants takes

SYSTEM OF SYMBOLS

SUBSTANCE & CHEMICAL STRUCTURE  
HEALTHY NETTLE

- 6-METHYL-5-HEPTEN-2-ONE
- 3-METHYL-5-N-BUTYLALDOXIME
- E,E-α-FARNESENE
- TRIMETHYLTETRADECATRIEN
- E,E-FARNESOL
- METHOXY-PHENYL-OXIME
- Z-3-HEXEN-1-YL ACETATE

STRESSED NETTLE

- Z-3-HEXEN-1-OL
- Z-3-HEXENYL ACETATE
- METHYL SALICYLATE
- E,E-α-FARNESENE

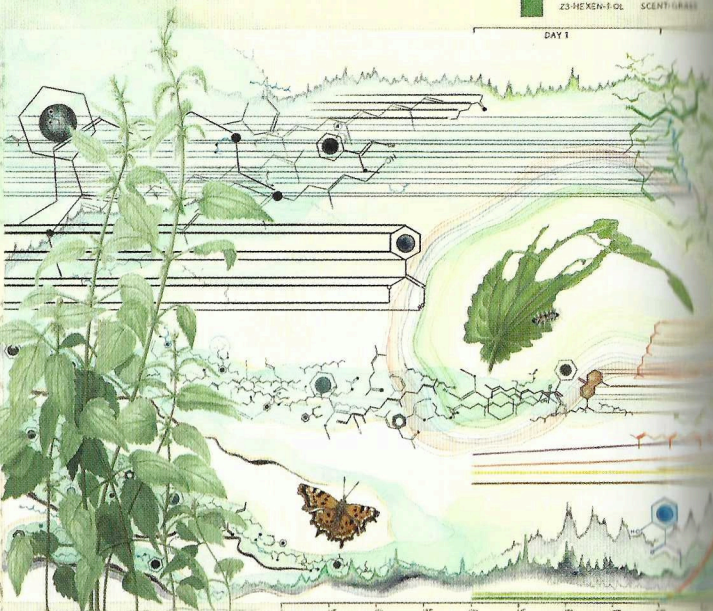
COWSLIP LIFE-CYCLE

- LINALDOL
- E,E-α-FARNESENE
- METHYL OCTANOATE
- METHYL DECANOATE
- METHYL DODECANOATE
- GERMACRENE D
- B-OCIMENE

CHROMATOGRAM

GAS CHROMATOGRAPHY-MASS SPECTROMETRY USED TO IDENTIFY AND QUANTIFY THE COMPOUNDS RELEASED BY PLANTS.

VOLATILE COMPOUNDS RELEASED BY HEALTHY NETTLES



PLANTS AND INSECTS



A COWSLIP IN THREE STAGES: BIRTH

- LINALDOL SCENT: PLEASANT
- E,E-α-FARNESENE SCENT: GRASS

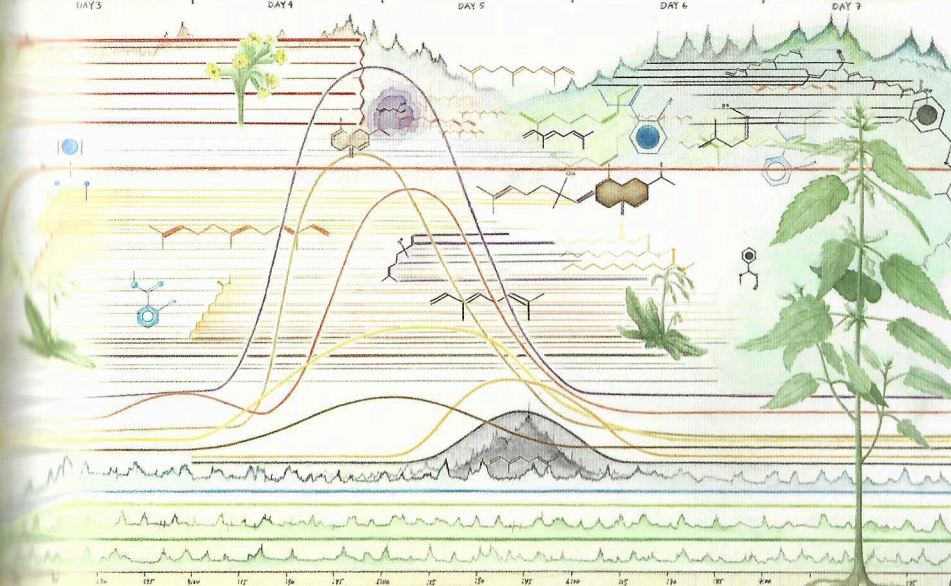
STRESS CALL OF THE STINGING NETTLE - ACCOMPANIED BY THE LIFE AND DEATH OF A COWSLIP

AS A STINGING NETTLE IS ATTACKED BY A POLYPHAGOUS LARVA

- Z-3-HEXEN-1-OL SCENT: GRASS

THE LIMNIA BUTTERFLY THAT FEEDS ON ITS LEAVES. THE PLANT SENDS OUT A CHEMICAL STRESS CALL

- METHYL SALICYLATE SCENT: YENKA THE CHEWING-GUM
- E,E-α-FARNESENE SCENT: APPLE



DEATH

- METHYL DECANOATE SCENT: FAT FRUIT
- METHYL DODECANOATE SCENT: STEARIN FRUIT
- GERMACRENE D SCENT: WOODY
- B-OCIMENE SCENT: PUNGENT

THE CHEMICAL LANGUAGE OF PLANTS

CHEMICAL PLANT-PLANT COMMUNICATION WHERE INTERACTION IS BENEFICIAL FOR THE RECEIVING PLANT (ALLELOBIOSIS), PLANT-DAMAGE CHEMICAL STRESS SIGNALING AND COMMUNICATION THAT AFFECTS THE GROWTH, HEALTH BEHAVIOUR OR POPULATION BIOLOGY OF OTHER SPECIES (ALLELOPATHY).

A NEIGHBOUR PLANT IS RECEIVING THE TRANSMITTED CHEMICAL MESSAGE AND STARTS REDISTRIBUTING ITS BIOSYNTHESIS FROM THE LEAVES TO THE ROOT SYSTEM.

69 Christine Ödlund, *Stress Call of the Stinging Nettle*, 2010

place. Botanical illustrations on the score referenced further scientific evidence of plant intelligence, such as the reaction of neighbouring nettles, which in response to the chemical warning channel their energy into their roots until the danger of marauding caterpillars has passed.

Challenging heteronormative assumptions in plant science brings a new understanding of the multiplicity of vegetal life, or, as theorist Teresa Castro has put it, 'to queer botanics is to recognize plant nature is queer nature'. Such an expanded understanding of queerness was at stake in Chinese artist Zheng Bo's filmic exploration of sexual intimacy with plants *Pteridophilia* (2016), in which naked men interact with three

species of fern in a Taiwanese forest. Experimenting with love and desire between not just species but biological kingdoms made the artist aware of the queerness of the sexuality of ferns, which over generations alternate between producing sperm and eggs and just making spores, in other words between a 'binary' and a 'singular' sexuality. Motivating these transgressive entanglements between queer men and ferns was the artist's sense of the pressing need 'to develop truly intimate relations with other species', which alongside activism deepens the solidarities on which the survival of all depends.

In her film *Eyes of Plants* (2019), Chilean artist Patricia Domínguez considered the healing power of plants against



70 Patricia Domínguez, *Eyes of Plants*, 2019

the backdrop of a syncretic world in which indigenous lands and beliefs collide with colonialism, extractivism and neo-liberalism. The troubling cross-pollination of indigenous cultures and colonial technologies is introduced in the film through shots of a pre-Columbian crying vase and computer-generated images of a bioprospecting drone, whose weeping electronic eyeball echoes the tearful eyes painted on the indigenous ceramic artefact. The artist's main focus was on mestizo rituals involving roses, a species that arrived from Europe with colonization but was absorbed by Central and South American cultures, who recognized in the high vibrations of the plant the energetic power to purify auras and heal personal and collective traumas. Domínguez adapted these traditional healing techniques to contemporary Chilean bodies that in her words are 'subject to neoliberalism, tiredness and cosmic debt'. Channelling the mixed ecological and cultural heritage of her home country, Domínguez pointed to the possibility of creating a globally understandable cosmology based on the ethnobotanical knowledge of the curative properties of plants.

Direct engagement with plants as a way to reconnect with human-plant knowledges and re-establish relations that have been lost through scientific handling and controls imposed by agricultural corporations was the methodology employed by Swedish artist Åsa Sonjasdotter in *The Order of Potatoes*.

Since 2010, her long-term project has entailed collaborative cultivation of potatoes in a self-organized and publicly accessible garden in Berlin in order to explore entangled natural and social histories of plant cultivation. In contrast to industrial breeding where 'human eugenics were deployed by representatives from the new, scientific field of plant breeding', pre-capitalist ways of growing plants were based, as the artist's research has shown, on 'skills developed through interspecies collaboration' in which 'plants and humans are both actors in the process of cultivation'. The work also incorporated the histories of potatoes, which until the 1600s were bound to the high altitudes of the Andes in South America, where thousands of wild and farmed varieties flourished before the colonial trade expediated their migration to other parts of the world. Responding to the risk that many varieties could become extinct as a result of bureaucratic regulations and the monocultural mentality of the food industry, Sonjasdotter set out to re-establish nurturing relations that take the 'potato perspective' into account.

Among the most distinctive properties of plants is their ability to produce an extraordinary variety of pigment molecules, which they deploy to attract the attention of animals that pollinate

71 Åsa Sonjasdotter, *The Order of Potatoes*, 2010





72 Woad and Japanese indigo, indigo-bearing plants best suited to a European climate, grown by Sigrid Holmwood, 2020

flowers and disperse seeds. By producing natural pigments, plants also made artists reliant on them for the colours on their canvases, giving rise to a particular form of cultural dependence on vegetal life. British-Swedish artist Sigrid Holmwood's project *Cultivating Colour* (since 2013) involved planting a pigment garden in the mountains of Sierra María-Los Vélez in Spain, making pigment as a public performance and researching the social history of plants. Referencing theorist Boaventura de Sousa Santos's call in *Epistemologies of the South* for 'ecologies of knowledge' as opposed to epistemological hierarchies, Holmwood interrogated the trajectory of Western modernity and art history through the figures of European peasants and pre-Columbian indigenous peoples. For instance, she wondered how the history of European painting would look if artists had had access to Mayan Blue, a pigment lost for five centuries either through the unintentional cultural ignorance of the colonizers or as a result of deliberate concealment by the Mesoamericans,

until it was recreated using traditional procedures in the 1990s. The main European source of blue was woad (*Isatis tinctoria*), a plant also taken to 'New Spain' to grow on the plantations and which the artist used to recreate the Mayan Blue as 'a decolonial gesture' that acknowledges the hybridity of the post-colonial condition.

The history of vegetation on the Earth is much longer than that of humans, with plant historians estimating that it was the appearance of chlorophyll organisms 3.5 billion years ago that turned the planet green. In their work *Proxymities* (2019), Anca Benera and Arnold Estefan addressed the deep history of plants, examining the role of fossil pollen found in ocean sediments or sedimentary rocks in piecing together the puzzle of geological time. Due to their particularly resistant constitution, pollen grains and spores, as the authors of *Paleobotany: The Biology and Evolution of Fossil Plants* explain, 'have been extensively used as index fossils in biostratigraphy and in the correlation of rock units', as well as providing the proxy data for the reconstruction of past climates. Benera and Estefan's installation, made up of pollen grains, resin and desert sand in the shape of cylinders, referenced the sampling tubes from exploratory drilling for mineral extraction. However, instead of fossilized residues, the artists collected pollen from various desertification areas, such as Dăbuleni in Romania, 'where there is still some vegetation left, albeit not for long', pointing to the dire effects of climate change on the conditions for plant life in the geological present.

The art practices discussed in this chapter contest the deeply embedded misconceptions around plants in Western culture, epitomized by the use of 'vegetative state' to describe a condition of being incommunicative and insensitive to one's environment. Through music, dance, rituals, performance and acts of tending, artists have turned to sensorial means to reach across the bio-epistemological divide and draw attention to the distinctive characteristics of plants. As science converges with ancient wisdoms and indigenous knowledges of vegetal life, spurred on by the urgencies of climate change, vital awareness is emerging of our elemental dependence on plants for nourishment, oxygenating the air, energy and most medicines, as well as of their resilient agential power.

## Chapter 2

# Botanical Politics

The modern history of plant science has been strongly marked by political and economic interests, ever since botany was mobilized in the quest for 'green gold' during the long eighteenth century. As Londa Schiebinger wrote in *Plants and Empire*, botany 'worked hand in hand with European colonial expansion' to the extent that even the father of botanical taxonomy, Swedish naturalist Carl Linnaeus, 'taught that the purpose of natural history was to render service to the state'. Encouraged by imperial powers to unlock the botanical secrets of indigenous knowledge and capitalize on their medicinal and agricultural potential, botanists of the New World were also active in transplanting species across the globe. During the twentieth century, vegetal realms were drawn into the political arena in new ways. Under Soviet socialism, the Great Stalin Plan for the Transformation of Nature of 1948 gave state biologist Trofim Lysenko free rein to experiment with ideologically tinged theories such as 'floral collectivism', which saw trees planted in comradely clusters to protect against weeds and other class enemies. More recently, with the rise of neo-liberal global capitalism, pharmaceutical corporations have opened new frontiers for botanical extractivism, based on isolating and patenting compounds derived from traditional medicinal plants at the expense of the impoverishment of local communities and ecological disruption. Engraved in the political imaginary through floral inscriptions on national insignia, plants have also been utilized in state ceremonies and diplomatic protocols.

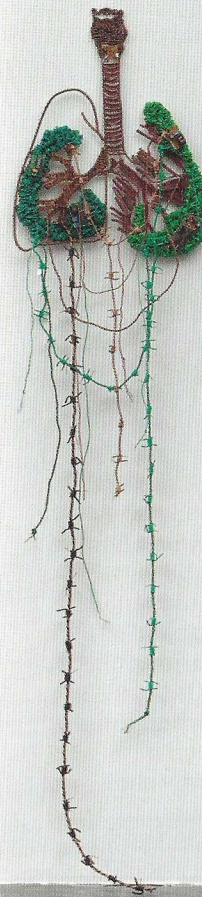
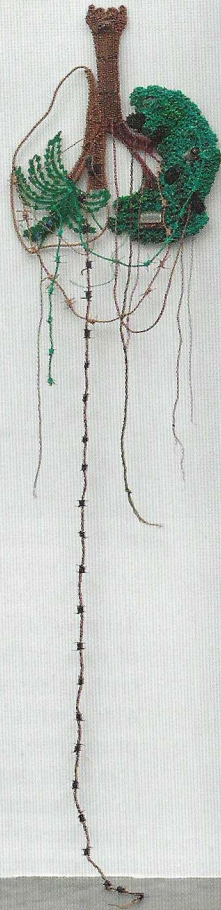
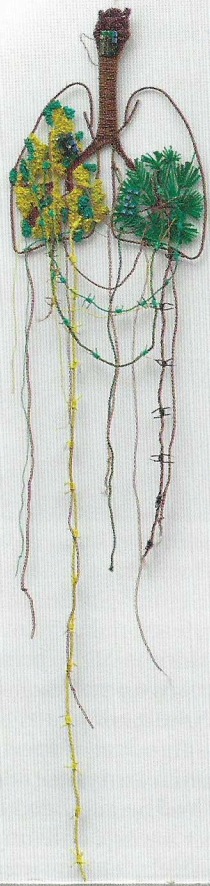
Exploring the correlation between plants and ideology, Zheng Bo's *Socialism Good* (2016) was a floral recreation in Chinese characters of the Communist Party slogan in the title, as a site-specific installation for the former CASS Sculpture Foundation in southern England. Flowers had previously been arranged to



73 Zheng Bo in collaboration with plants, *Socialism Good*, 2016

deliver this propaganda message during the national celebrations of 1991 in Tiananmen Square, notably also the site of the brutal repression of student-led democracy protests two years earlier. Along with issues around the instrumentalization of plants to propagate ideological slogans and suppress freedom of speech, the work made reference to official Communist Party attitudes to the natural world, which since the 1950s had been guided by Mao Tse Tung's dictums 'man must conquer nature' and 'make the high mountain bow its head; make the river yield the way'. As Judith Shapiro put it in *Mao's War Against Nature*, 'the conquest of nature and prosperity of humankind were believed to be at hand through the miracle of socialism'. By deploying the floral slogan in the wake of the domestic turmoil of 1989 and the near global collapse of the communist system, the Party sought to enlist vegetal beings to reassert the correct Chinese path to socialism. While in the original scenario the propaganda plants were kept in line within a tightly controlled horticultural setting, in the artist's version the flower beds were left unattended and weeds were allowed to grow between the Chinese characters, raising the prospect of ruderal resistance.

Trees that have been adopted as national symbols by neighbouring countries with long-standing border disputes featured in Indian artist Reena Kallat's series *Siamese Trees* (2018–19), in which electricity cables were intricately braided



74 Reena Kallat, *Siamese Trees*, 2018–19

together to form two inverted and conjoined trees in the shape of human lungs. She fused ratchaphruek from Thailand with Cambodia's palm to form Ratch-ya palm, Mexican cypress with US oak to form Cy-Oak, mango from Bangladesh with Indian banyan to create Man-yan, and North Korea's pine with South Korea's hibiscus to form Pine-iscus. The chosen sculptural material carries associations of cables as conduits for energy and information, but when woven into draping barbed wire coils is also symbolic of the obstacles to the free flow of people and ideas across borders. By superimposing geopolitical conflicts onto

botanical realms, yet through her intervention demonstrating the integrated ecology of natural habitats, the artist considered these conjoined forms as 'an allusion to nature's defiance of artificially imposed, man-made divisions on the ground, a poetic provocation from the past or a proposition for an imagined future where indeed they may reunite'. Just as trees in ecosystems communicate through underground root and fungal networks and oxygenate air through their crowns, the interconnected arboreal bodies in this work reach across national, cultural and political boundaries and point to vital interdependencies.



75 Kapwani Kiwanga, *Flowers for Africa: Cameroon*, 2020

75 Researching archival imagery of the transition of African nations from colonial rule, Paris-based Franco-Canadian artist Kapwani Kiwanga has uncovered the role of plants in various independence ceremonies. Her ongoing project *Flowers for Africa* started in 2013 during an art residency in Dakar, when she recreated floral arrangements corresponding to specific moments in Senegal's path to independence. Subsequently she developed a protocol to remake floral displays corresponding to the decolonial transitions of Rwanda, South Africa, Nigeria, Ivory Coast and eventually all fifty-four countries on the African continent. Drawing on archival photographs, Kiwanga worked with florists to reconstruct the elaborate bouquets, or in some cases simple boutonnières, with the fresh flowers and foliage then left to wilt and dry over the course of the exhibition. The deteriorating floral displays mirrored the creeping amnesia about colonial history and the waning of the optimism of the post-colonial era since, as the artist put it, 'just as the enthusiasm present during the period of independence has faded, pan-African dreams have been eclipsed by the everyday difficulties of the average African citizen'. Disclosing the botanical codes of floral diplomacy, the work showed how plants have been harnessed in the political symbolism of nation-building.

The supportive role of plants in the anti-Apartheid struggle in South Africa was unearthed by Swiss artist Uriel Orlow in his installation *Grey, Green, Gold* (2015–18), which dealt with

76

the vegetable garden established by Nelson Mandela and other political prisoners incarcerated on Robben Island during the 1970s. Green stands here for the tiny patch of land in the grey prison yard cultivated by the ANC activists as an act of subversion against the racist regime, while gold is the colour of the strelitzia, a rare variety of a flower native to South Africa, popularly known as 'Mandela's gold' after he became president. *The Squirrel's Revenge* (2015–16), a photograph of the plant caged in chicken wire to protect it from marauding squirrels that were introduced into the country under British rule, alluded to the collision of botany and politics in colonial histories and decolonial struggles. Also belonging to Orlow's *Theatrum Botanicum* (2015–18), a body of work that examined the conflict between colonial botany and indigenous vegetal knowledge, was the experimental documentary *Imbizo Ka Mafavuke* (2017). Set in a nature reserve on the outskirts of Johannesburg, the film saw healers, activists, lawyers and the ghosts of colonial explorers, botanists and judges convene to revisit the 1940 court case against indigenous herbalist Mafavuke Ngcobo. The statement by a plant healer that 'plants and knowledge are not for us to sell' exposed the epistemological divide between the attempts of pharmaceutical corporations to use bioprospecting and genetic patenting to commercialize the biological resources of South Africa and the non-proprietary attitudes of local communities.

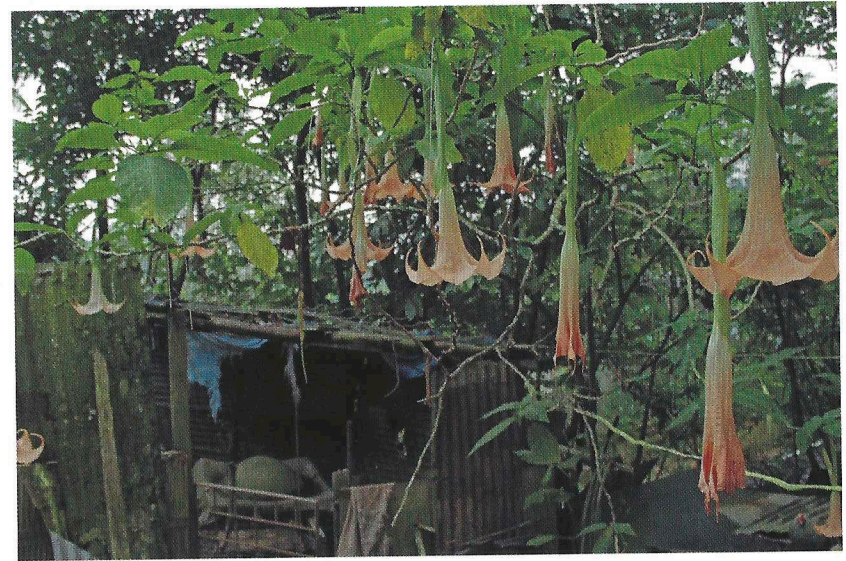
Medicinal plants used as abortifacients in the Caribbean during the era of colonial slavery were sites of contestation over

76 Uriel Orlow, *The Squirrel's Revenge*, 2015–16



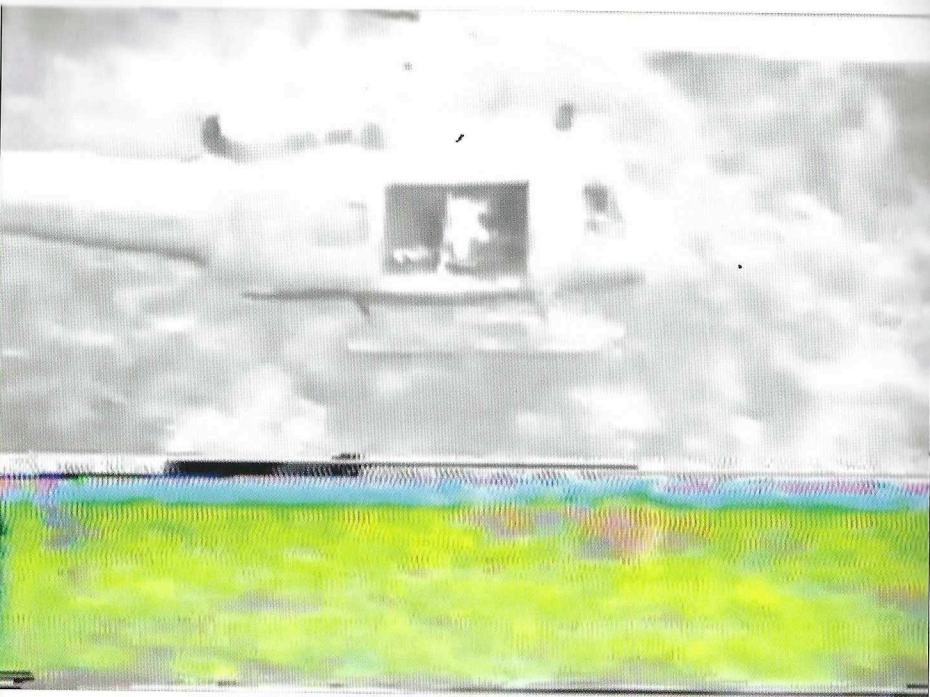


77 ABOVE Joscelyn Gardner, *Mimosa pudica (Yabba)*, 2009  
 78 OPPOSITE Beatriz Santiago Muñoz, *Farmacopea*, 2013



77 the ownership of women's bodies and access to indigenous knowledge of plant-based techniques of reproductive control. The series of watercolours *Creole Portraits III* (2009–11) by Barbadian artist Joscelyn Gardner depict the backs of women's heads with braided Afro hairstyles, from the base of which grows a species of abortifacient plant. The iron torture collars around their necks recall the punishment of women for their acts of reproductive resistance in refusing to provide a new generation of slaves. The artist also parodied colonial botany's categorization of these exotic species by using the Linnaean taxonomic system, along with the name assigned to each slave on the plantation, in the portrait titles. As Schiebinger pointed out in *Plants and Empire*, European botanists selectively chose not to collect information about this aspect of Caribbean medical practices, as it did not correspond to their political, economic, disciplinary or personal interests. In that way, by suppressing knowledge of such plant-based methods, Western science fostered 'bodies of ignorance' that came to 'mould the lived experience of European women' by restricting reproductive freedoms.

78 In her film *Farmacopea* (2013), Beatriz Santiago Muñoz problematized the transformation of the Puerto Rican landscape as a consequence of the government's agenda to turn the country into a desirable travel destination. The title of the work referred to the catalogue of plants used by indigenous people for medicinal, hallucinatory or other purposes, with the artist paying special



79 Hannah Meszaros Martin, *Falta de Luz*, 2020

attention to the disappearance of *Hippomane mancinella* or the manchineel tree. Locally known as ‘the little apple of death’, it is considered one of the most toxic trees in the world, since just sitting beneath it can cause sickness for days. While in the past the tree was responsible for many losses of life, nowadays it is incredibly rare, following the efforts of the Puerto Rican government to eradicate it and render the landscape harmless. As a result, the Caribbean island has, in the artist’s words, been transformed into an ‘undifferentiated tropical place for tourism, service and folklore’, at the expense of biodiversity and native knowledges of local botanical uses. Endangering the richness of indigenous plant cultures, the loss of vegetal species is driven not only by climate change and agricultural encroachments, but also by the commercial and political project of sanitizing the forest to make it amenable for the travel industry.

Relying on the forensic methodology of collecting evidence from fieldwork, photography, films, remote sensing and ethnology, Hannah Meszaros Martin has investigated the eradication of the coca plant via aerial fumigation in Colombia. Ever since the growth of the coca plant was outlawed by the

79

United Nations in 1961, states have been granted the power not only to destroy coca when harvested illegally for drug production, but also ‘to kill it in the wild’. In her film *Falta de Luz* (2020), Martin drew on archival footage to juxtapose the history of the use of the herbicide glyphosate to target marijuana crops in the mountainous national parks of Georgia in the 1980s and that of the US-backed counter-narcotics campaign to systematically eradicate the coca plant in the forests of Putumayo in southern Colombia two decades later. By interweaving temporalities and geographies, the artist merges the memory of uncontaminated landscape with the legacy of the chemical poisoning of land, water and bodies. Uncovering the ecocidal violence of plant eradication in Colombia, the work underlines the extent to which, in the artist’s words, ‘the war on drugs is also a war on the natural world’.

80

The questionable neutrality of the scientific project of seed archiving, the role of climate change in causing social and political upheaval and the clash between the paradigms of industrial agriculture and community permaculture were all at issue in Palestinian artist Jumana Manna’s film *Wild Relatives* (2018). Her account began with the International Centre for Agricultural Research in Dry Areas (ICARDA)’s 2015 decision to request the return of the specimens it had deposited in the Svalbard Global Seed Vault. This unprecedented move was prompted by the war in Syria, which forced ICARDA to abandon its own seed store in Aleppo and move its research across

80 Jumana Manna, *Wild Relatives*, 2018



the border to Lebanon's Bekaa Valley. The film followed the seeds' journey from the Arctic doomsday vault to the displaced agronomical centre, where they were awakened and duplicated, and then their return to Svalbard for safe keeping. It drew attention to the global practice of seed archiving, which is only necessary due to the reduction in biodiversity caused by the switch to monocultural agriculture. The film also questioned the role of scientists in breeding thirsty crops that drained Syrian aquifers, making the country more vulnerable to severe droughts that fuelled the Arab Spring protests of 2011. As the permacultural methods of Lebanese farmers featured in the film demonstrate, it is the 'wild relatives' of industrially farmed crops, rather than their genetically modified cousins, that are best equipped to withstand the extreme conditions brought by climate change.

Artists in this chapter have revealed botany as distinctly embedded in the political projects of colonialism and decolonial struggles, as well as the tendency to elevate certain flower and tree species to a privileged place in the pantheon of national representation. Pharmaceutical companies' exploitation of plants as a genetic resource, the manipulation of seed varieties to suit the interests of monocultural agriculture and the criminalization of plant species as a health, security or economic threat in state-led ecocidal campaigns are shown as manifestations of the extractivist mindset. While climate change has heightened the political stakes around the ownership and control of plants, vegetal resistance is expressed through their capacity to overrun horticultural settings and make unexpected interspecies alliances.

## Chapter 3

# Self-Management of Plants

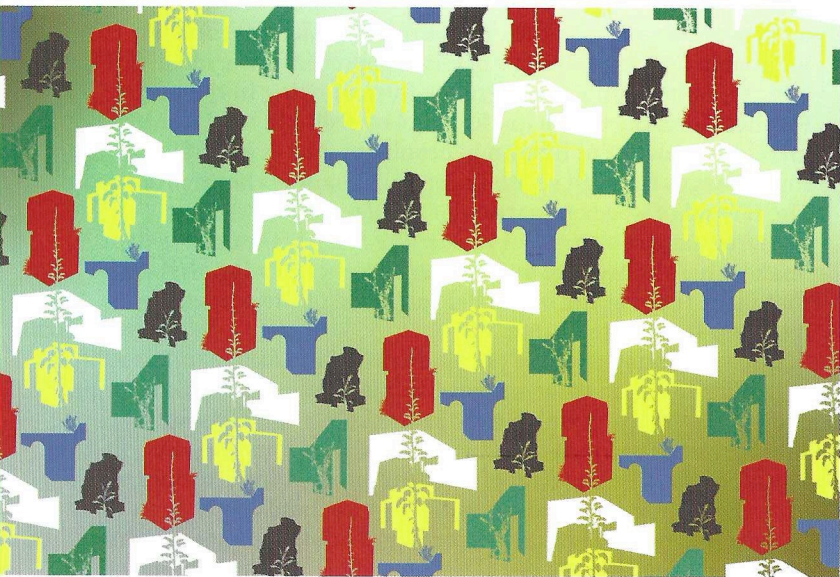
In 2008, a landmark decision in Swiss constitutional law affirmed the 'dignity of plants as living beings', establishing the principle that causing 'arbitrary harm to plants is morally impermissible'. However, by declining to protect plants from destruction for a 'rational reason', this partial expansion of planetary jurisprudence did not go so far as to question their instrumentalization. Equally, in seeking to apply the humanistic notion of individual dignity to beings of vegetal physiology, the decision squeezed plants into the narrowly anthropocentric categories of the Western legal tradition. By contrast, phytocentric approaches to vegetal wellbeing proceed from the understanding that plant life is 'complete exposure, in absolute continuity and total communion with the environment', which for theorist Emanuele Coccia in *The Life of Plants* represents 'the most intense, radical, and paradigmatic form of being in the world'. Furthermore, the emancipation of plants should not be seen merely as a matter of human benevolence, but as a condition that emerges through vegetal agency in shaping the environment. The refusal of weeds in particular to 'play by our rules', as Richard Mabey observed in *Weeds: The Story of Outlaw Plants*, 'makes them subversive and the very essence of wildness', traits that place them in the botanical vanguard of the planetary response to climate change.

81 The self-management of post-industrial flora as a manifestation of resilience was at stake in Igor Eškinja's project *Do Plants Dream of the Future?* (2020), which took as its subject the vegetation that thrives in the post-socialist ruins of the Croatian port city of Rijeka. The capacity of weeds to prosper in proximity to humans, opportunistically populating new landscapes such as decaying factory buildings, roofs and other neglected urban infrastructures, was for the artist an indicator of their 'enormous

vitality and force, resourcefulness and energy in occupying and transforming space and life'. Eškinja uncovered the botanical and environmental history of the city, from the expulsion of nature with the beginning of industrial development and urbanization in the nineteenth century to the return of biodiversity to industrial sites abandoned since the 1990s, through the flourishing of self-seeding plants. Referring to the nineteenth-century vogue for wall coverings decorated with floral and exotic botanical motifs, the artist produced a series of wallpapers patterned with weed specimens now living in the industrial areas of the city. For cultural anthropologist Bettina Stoetzer, the 'ruderal worlds' that emerge spontaneously in inhospitable urban environments point to 'often unnoticed, cosmopolitan yet precarious ways of remaking the urban fabric'. By deliberating about a phytocentric future, Eškinja raised the question of whether ruderal plants, through their vigour, subversiveness and adaptability, might stand as signposts for the empowerment of cities in transition.

The plants that thrive in urban wastelands and abandoned development sites were also investigated by Danish artist Camilla Berner in her exhibition 'Still Alive' in Seoul in 2016, which asked how such sites are perceived by 'self-organising nature' itself. One photographic work in the show was prepared in Copenhagen and referenced the Korean flower arrangements

81 Igor Eškinja, *Untitled (Hartera)*, 2020



known as a *hwa-hwan*, traditionally made for celebrations such as weddings or birthdays, using roses, lilies or other colourful flowers. In the artist's version however, the assembly was meticulously put together with wildflowers, weeds and grasses collected from a post-industrial site intended for future gentrification. In Seoul, Berner researched the floral vegetation of similar locations, creating bouquets from these often overlooked, yet hardy and adaptable plants that also communicate the specific socio-economic circumstances of the site from which they originated. One such spot was the last remaining building site in the affluent commercial city district of Gangnam, which Samsung and Hyundai were competing to buy at the time, and therefore the artist could only reach the vegetation that was spreading under its fences. She placed each bouquet in a matching vase made by the Royal Copenhagen porcelain company, using the genre of still-life painting to interrogate the comparable position of wild plants in Danish and Korean culture. Appending a detailed list of species used in the composition of each *Plant Collection* challenged further their marginalized status in horticultural circles.

82

Reflecting on the extraordinary transformation of China's built environment in recent decades that have seen a ravaging spread of urbanization, Zheng Bo's intervention on the roof garden of the newly erected Sifang Art Museum in Nanjing entailed creating a refuge for weeds collected from the changing neighbourhood. By planting a *Weed Plot* (2016) for plants endangered by constantly advancing construction sites, the artist drew attention to the encroachment of ultra-modernity that disrupts people's connection with other species, pointing out that 'a hundred years ago you didn't need to go to a museum to reconnect with weeds'. The rapidity with which the conditions for vegetal life are being destroyed in the country's hi-tech urban sprawl is suggested by the fact that China currently pours more concrete in two years than the United States did over the whole twentieth century. The role of ruderal plants in the political imaginary is a recurrent concern in Bo's practice, on the one hand focusing on the issues of overlooked and marginalized, yet resilient and disobedient elements in the system, while on the other questioning inclusivity and eco-equality for all humans and non-humans.

Engaging with wild plants found within a twenty-minute walk of her studio in rural Goa, Indian artist Nandita Kumar anticipated a future in which forgotten plants could be reintegrated into the lives of local communities blighted by monocultures. Her interactive installation *The Unwanted Ecology* (2017) consisted of a glass jar containing dried samples of twenty plants denigrated as weeds, each of which was electronically

83



82 Camilla Berner, *Plant Collection no. 1030 Tongui-dong, Jongno-gu, Seoul 11.08.16, 2016*



83 Nandita Kumar, *The Unwanted Ecology, 2017*

matched with a sound frequency. As visitors approached the jar, altering the atmospheric humidity, the sound levels emitted from this ‘technologically reincarnated organism’ also changed, re-enacting, in the artist’s words, ‘missed or invisible encounters between plants and people’. Alongside this sensorial attempt to rekindle appreciation for neglected plant species, the installation included a book with information about their nutritional and medicinal qualities, ethnobotanical knowledge that risks being lost as local healers disappear. Kumar also emphasized the resilience of these vegetal survivalists in the face of the high temperatures and drought conditions that are degrading the landscape as global warming intensifies.

The resilience of wild plants was also the subject of Annalee Davis’s collaborative project *(Bush) Tea Plots* (2019–20). The work focused on the ecological damage caused by the monocultural farming of sugar on Barbados and wild plants’ capacity to absorb toxins and restore harmony to an environment scarred by the physical and psychological legacies of slavery. Reflecting on the resurgence of wild botanicals she observed on walks through the abandoned sugarcane fields behind her studio, the artist used a glass planter to make visible the biological action of uncultivated vegetation in nourishing and restoring layers of soil made barren by monocultural production. Davis also referred in the work to the hidden history of bush tea practices, in which healers used West African medicinal knowledge to provide herbal cures and spiritual relief to their communities. These medicinal plants came mostly from the small plots given over to slaves to grow their own food, which became in the words of Jamaican writer Sylvia Wynter a ‘source of cultural guerrilla resistance to the plantation system’. These wild herbs represent for the artist an ‘apothecary of resistance’ with the ability to counteract the devastating effects of the plantation system on the life of the island, while challenging at the same time reliance on imported pharmaceuticals during the post-plantation era.

Non-extractivist approaches to medicinal plants were at the core of Uriel Orlow’s work *Learning from Artemisia* (2019–20), which took as its case in point the plant *Artemisia afra* that grows in various parts of Africa. Despite the fact that the herbal infusion of this indigenous plant is known to be effective in the treatment and prevention of malaria, it is not recommended as a medication by the World Health Organization, which tends to favour drugs produced by the pharmaceutical industry. The project was originally realized in the context of the Lubumbashi Biennale, where the artist worked with a women’s cooperative of artemisia growers to plant a small garden, with a local painter to create an accompanying mural and with a band to perform



84 Annalee Davis, *(Bush) Tea Plot – A Decolonial Patch for Mill Workers*, 2020

a song about the beneficial qualities of the plant. In his research, Orlow juxtaposed anti-malarial drugs patented on the basis of pharmacological extraction of the component artemisin from the Chinese variety of the plant, to which the parasites that cause the illness are increasingly resistant, with the tea brewed from the whole plant in a sustainable and non-intrusive way. Against the background of colonial history and the post-colonial economy of the Democratic Republic of Congo, which has been coloured by various forms of extractivism, the artist proposed to learn from *Artemisia afra* about a non-exploitative relationship with the natural world and to reimagine modern medicine through forms of plant solidarity.

85 French artist Suzanne Husky drew on her background in landscape gardening to realize *Jardin à la française sauvage* (2013), a work that entailed reinventing the seventeenth-century French formal garden in the chateau park of Domaine de Chamarande as an experiment in botanical wilderness. The layout of her floral labyrinth referenced the history of French horticulture in the age of Louis XIV, when, as Chandra Mukerji asserted in *Territorial Ambitions and the Gardens of Versailles*, gardens were a microcosm designed to showcase the military and political power of the Sun King, and a ‘model of material domination of nature’ in which land was ‘surveyed and measured and stamped as something under human control’. However, in



85 Suzanne Husky, *Jardin à la française sauvage*, 2013

Husky's ecocentric version, plants were chosen not for their self-aggrandizing effect, but based on the 'needs of the soil, the cycle of life and the relation of spaces with their environment', with the selection of wild grasses and perennial meadow flowers intended to provide a habitat and winter food resource for birds and insects. Challenging the political and aesthetic instrumentalization of vegetal life, the wildness of this French formal garden is also a premonition of a future in which only plants able to adapt to a changing climate will survive.

The wellbeing of plants in a world transformed by human interventions resides in their emancipation from being poisoned with chemicals, uprooted for urban development, meddled with genetically, or displaced from home soils and endangered by climate change. Rekindling appreciation for neglected vegetation that has found its ecological thriving spot in the wreckage of deindustrializing cities, artists in this chapter have confronted horticultural prejudices against uncultivated and self-managed plants. As global warming endangers the supply chains and social systems of the hi-tech world of carbon capitalism, the flourishing of ruderal vegetation in harsh, human-altered environments also carries a message about the potential for decentralized and non-coercive models of climate adaptation.

## Chapter 4 Plants on the Move

The nationalist and anti-globalist agendas that prevail in populist political currents have been transposed onto botanical realms, in which plants with different geographic histories get labelled as non-native or invasive and subjected to public campaigns of eradication. The notion of native purity has, however, been corroded by climate disruption that is bringing in its wake the unstoppable resettlement of species across the planet, while the ecological crisis has sharpened the critique of the subdiscipline of biology that deals with invasive species, disputing the assumption that redistributed species pose a vital threat to native flora and fauna. In an article published in *Nature* in 2011, entitled 'Don't judge the species on their origins', a community of ecologists led by Mark A. Davis demanded the abandonment of the 'native-versus-alien species dichotomy', putting forward the corrective view that such external changes to local ecosystems actually tend to increase their biodiversity. Advocates of the 'new wild' accept that responsibility for deliberate or accidental assistance in the migration of species is a consequence of social, political and economic interference with the natural world. Intervening in the entangled domains of politics, science and ecology, artists have challenged the demonization of so-called invasives. They have uncovered complex histories of their planetary journeys and engendered collaborative scenarios in which the pioneering agency of non-native plants is released to restore and revivify devastated post-industrial environments.

In *Inheritors of the Earth*, ecologist Chris D. Thomas observed that the biotic exchanges set in motion by Columbus are effectively 'reuniting the biological world' to form a 'virtual continent' or 'new Pangaea', dissolving the distinction between native and non-native plants. The history of this process was

## Chapter 5

# Arboreal Worlds

One of the earliest campaigns in the history of modern environmentalism was motivated by care for trees and, significantly, was initiated by artists. In 1852 the painters of the Barbizon School, led by Théodore Rousseau, drew up a petition to Napoleon III of France to demand the Fontainebleau Forest be protected from the harvesting of wood for industrial purposes and disruption from an influx of Parisian day trippers. In response a decree was issued declaring that areas of the forest of special interest to artists should be 'left unmanaged', in other words, protected from exploitation. Since petrol-powered chainsaws replaced the felling axe, the disappearance of forest habitats has only accelerated, with biologist David George Haskell noting in his diary *The Forest Unseen* that 'logging kills many of the inhabitants of the woods, and their populations take decades, sometimes hundreds of years to recover'. The extractivist and instrumentalizing approach towards trees associated with industrial modernity stands in sharp contrast to traditional and indigenous attitudes towards forests. Indigenous ecologist Robin Wall Kimmerer notes that the 'ethic of reciprocity was cleared away along with the forests', calling in her book *Braiding Sweetgrass* for 'acts of restoration, not only for polluted waters and degraded lands, but also for our relationship to the world'. In the spirit of their nineteenth-century predecessors, contemporary artists have addressed the causes and effects of deforestation and the exposure of trees to worsening droughts and fires, drawn attention to their contested role in mitigating climate change and advocated for the revival of a culture of care and respect for interconnected arboreal worlds.

Anca Benera and Arnold Estefan's black-and-white film *No Shelter from the Storm* (2015) depicted two lonely figures

traversing a mountainous terrain of scarred woodland while whistling the mournful melody of the popular American anti-war song 'Where Have All the Flowers Gone?'. The particular poignancy of the tune derived from the fact that the lyrics originated in a pre-war Ukrainian Cossack folksong and the footage was shot on the borderlands between Romania and Ukraine during a time of recent armed conflict on the territory of the post-Soviet country. Through the sound of distant chainsaws the work also directed attention to the current wave of extreme deforestation in these Carpathian woodlands, where allegedly a timber mafia funnels illegally cut trees from old wood forests into the supply chain of the world's biggest furniture company. In the film the poetic melody reverberating across ravaged hillsides crystallizes the sobering insight that, while in the past forests provided refuge in times of need, today they only stand as reminders, as the artists put it, of the 'human condition of our age'. Recalling ancient laws according to which the uprooting of trees was 'a declaration of total war without a chance for reconciliation', Michael Marder has emphasized the function of trees in providing shelter in times of need and pointed to the severity of uprooting communities who are 'prevented from seeking meaning and refuge (even) in the vegetal world'. The assault on forest, made possible by opportunistic alliances between extractive capitalist and oligarchic political interests, is transforming landscapes, ecosystems and communities, leaving no place to shelter from the planetary peril of climate change.

The vulnerability of the Mata Atlântica, the green corridor that hugs Brazil's Atlantic coast, to deforestation and development was addressed in Rio-based Catalan artist Daniel Steegmann Mangrané's installation *Living Thoughts* (2019). The work consisted of dozens of hand-blown glass containers shaped like branches suspended in mid-air and dispersed in the exhibition space, with orchids, ferns, cactuses, mosses and bromeliads growing out of the transparent trunks. One of the most biodiverse environments on Earth and home to more than 8,000 endemic plant species, the forest has already been reduced to seven per cent of its original area through the spread of intensive agriculture and the growth of the megacities of São Paulo and Rio de Janeiro, while transferring the responsibility for care of indigenous lands to the Ministry of Agriculture has signalled the loosening of already meagre measures of environmental protection. Steegmann Mangrané brought into focus the resilience and adaptability of epiphytic plants, which derive nutrients and moisture from the atmosphere rather than the soil and are helped by fellow forest beings to find a niche

among the branches. More vividly still, through the absence of the support trees on which epiphytes depend, he drew attention to the precariousness of dense forest ecosystems that are dematerializing before our eyes, leaving behind a fragmentary patchwork of isolated botanical specimens.

Amar Kanwar's *The Sovereign Forest* addressed conflicts between local communities, government and corporations over the control of agricultural lands, forests, rivers and mineral resources in the Indian state of Odisha, which have accelerated in the era of neo-liberal globalization. The centrepiece of the work is *The Scene of Crime* (2011), a forty-two-minute film composed of short sequences shot in territories acquired by the state government and mining corporations for industrial sites. In the artist's words, it offers 'an experience of landscape just prior to erasure', since 'every location, every blade of grass, every water source, every tree' is slated to disappear. An atmosphere of menace hangs over the slowly changing footage of depopulated rural landscapes, in which plant species, river sources and micro-geographies are named and recorded as evidence. Due to the fact that the region has the largest accessible reserves of bauxite in the world, international steel

91 Daniel Steegmann Mangrané, *Living Thoughts*, 2019



92 Amar Kanwar, *The Scene of Crime*, 2011



93 Ursula Biemann and Paulo Tavares, *Forest Law*, 2014

corporations have adopted a long-term strategy, factoring into their calculations the delays caused by community resistance and the time required to cultivate amenable politicians and corrupt local bureaucracies. The threat to the sovereignty of the forest can therefore be considered, as Kanwar revealed, a premeditated crime.

A close reading of *The Natural Contract* by French philosopher Michel Serres, the declaration on the Rights of Nature in chapter seven of the Ecuadorian Constitution (2008) and the legal cases of forest rights brought by the indigenous people of the Ecuadorian Amazon are all intertwined in the installation *Forest Law* (2014) by Ursula Biemann and Paulo Tavares. Among the protagonists speaking to camera in the two-channel video work was the leader of the Sarayaku people, who gave an account of collective actions to protect the forest from the incursions of extractivist industry. These included establishing peace camps and using the recent expansion of planetary jurisprudence to encompass the rights of nature to challenge the activities of mining companies in international courts. Legal disputes over the burying of explosives in a part of the forest viewed by the authorities as 'empty', but which for the Sarayaku is a sacred zone reserved for the repopulation of

animal species, represent an irreconcilable clash between the capitalist mentality and indigenous understanding of the living forest. In the face of concerted attempts by corporate capital and state power to exploit the oil, mineral and timber wealth of the forest, the film drew attention to the struggles of the Sarayaku people in defending their ancestral territories and arboreal worlds.

The indifference of the constructors of modernist infrastructures to the living organisms and natural entities obstructing their path of economic growth and technological progress was at issue in Hungarian artist Kitti Gosztola's series of ink drawings *Right Tree Right Place* (2013–14).

94

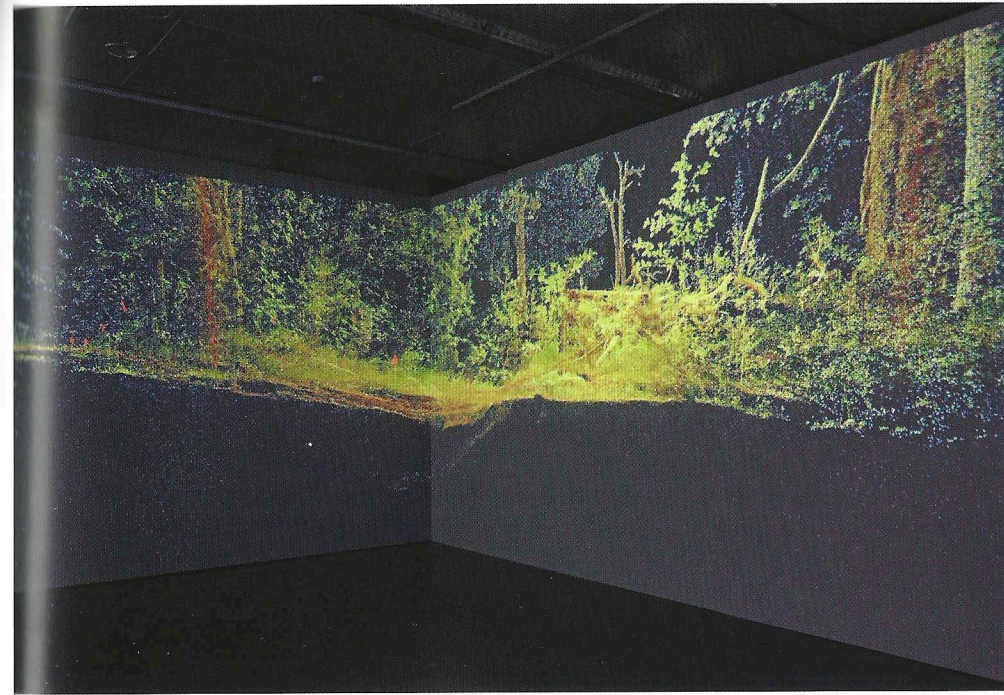


94 Kitti Gosztola, *Picea abies*, 2013

The title of the work derived from a headline on the website of an energy company, posted in a section about what kind of trees should be planted underneath electricity cables. Showing what happens when trees find themselves in the 'wrong place', the artist depicted specimens that have had large parts of their canopy surgically removed because they block power lines, roads and other urban infrastructure. Gosztola's series of mutilated tree portraits are framed in a way to repeat the geometric shape of the brutal cut, using the same wood as the specific tree, with a small brass plaque indicating its Latin name. The irregular framing tangibly amplifies the sense of woundedness, with the artist cautioning that this is not merely 'an aesthetic issue', since the intervention almost always 'leads to the slow death of the tree'.

Taking as a case study the management of trees in New York City, Cooking Sections' performative lecture and exhibition project *Offsetted* (2019) questioned the logic of 'environmental gentrification' and the economic interests embedded in this 'urban forest'. Referring to the 2017 New York Street Tree Map, which counted 678,183 specimens growing in the city, the artists disclosed that the underlying reason for this cartographic undertaking was 'to provide tools for the developers'. Namely, by using a Tree Carbon Calculator, the authorities were able to estimate each tree's capacity for stormwater interception, air pollution removal and CO<sub>2</sub> reduction, and therefore put a price tag on them, so that developers or industrialists who are obliged to mitigate their environmental damage can pay to offset the harmful effect of their activities. In that way the trees have become 'objects of transaction', with an estimated value of \$109,625,536.06, which means the city management could actually benefit from environmental destruction. By drawing attention to the transformation of trees into tradable assets while unsustainable economic practices continue uninterrupted and the systematic causes of climate change are ignored, Cooking Sections raised the question of the de-financialization of the environment and the right of trees not to serve as carbon offsets.

Further complicating the picture of trees as oxygen producers and carbon sinks, Latvian artists Rasa Smite and Raitis Smits drew attention in *Atmospheric Forest* (2020) to the fact that trees breathe and therefore also emit carbon dioxide. Carbon is also released back into the atmosphere when trees die through drought, forest fires or accelerating biological processes, which underpins the journal *Nature's* announcement on its cover in March 2020 that 'the ability of tropical forests to sequester CO<sub>2</sub> is in decline'. Smite and Smits's



95 Rasa Smite and Raitis Smits, *Atmospheric Forest*, 2020

multimedia installation visualized and sonified findings about the relationship between forest and climate, based on the research they conducted in Pfywwald, an ancient Swiss Alpine forest, where they analysed the effects of drought on weather conditions in the valley. Evidence about the interaction between climatic conditions and pine-tree emissions suggested specifically that stressful situations, such as extended dry spells, influence the production of resin and trigger the release of volatile organic compounds that are responsible for the characteristic scent of the forest. By visualizing the data collected from observations of pine trees during one growing season, the artists revealed the connection between environmental factors and arboreal physiology, showing that with climate change the forests are likely to turn more fragrant in the future.

The challenges posed by climate chaos defy narrowly technocratic approaches that instrumentalize trees as climate sinks, requiring instead a change in societal attitude to arboreal beings that involves looking also to indigenous knowledge and practices of forest life. The forest drawings



96 Abel Rodríguez, *Terraza Alta III*, 2018

of Mogaje Guihu, who westernized his name to Abel Rodríguez after being forced by armed struggle to flee to Bogotá from his ancestral lands in the Colombian Amazon, depict the rainforest as a biodiverse and interconnected world thriving with life. In contrast to the botanical illustrations made by colonial explorers, whose scientific categorization paved the way for economic exploitation, Guihu made his drawings from memory. In works such as *Terraza Alta III* (2018), he represents the forest from the inside, drawing on long years of learning its ways and botanical knowledge acquired through oral tradition. Dual annotations in both his native Muinane language and Spanish record the sensuous complexity of the indigenous relationship to forest plants, which fulfil a multiplicity of roles by providing nourishment and materials for clothing and homebuilding, as well as being used for healing and in spiritual rituals. As anthropologist Eduardo Kohn put it in *How Forests Think*, getting food in the forest ‘involves people intimately with one of the most complex ecosystems in the world – one that is chock-full of an astounding array of different kinds of interacting and mutually constituting beings’. By sharing

such forest knowledge with non-indigenous people, the artist confronted the extractivist attitudes to the natural world codified in scientific botany, while making visible the chains of mutual reliance on which planetary wellbeing depends.

It is becoming increasingly clear that the biogeochemical dynamism of forests unleashed by breaking the ecological contract has made them unpredictable participants in the drama of climate change. Ruthless deforestation, short-sighted profiteering and the financialization of the climate crisis have been addressed by the artists discussed in this chapter, who highlight the endangerment of our common terrestrial home. They also explore the tension between the environmental protection of trees through an expanded planetary jurisprudence and the opportunism of state and commercial actors. As the artists have shown, moving towards ecological transformation entails reawakening the sense of connection with urban trees and forest worlds and rekindling attentive and reciprocal relations to silvine beings.