The Wretched Earth: Botanical Conflicts and Artistic Interventions

Editors' Introduction

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We begin with the recognition that the Earth is wretched. This is not a metaphor. It is literally our ground. The Earth is wretched because its soil – that thin layer of earth at the surface of the planet upon which we depend for life – is contaminated, eroded, drained, burnt, exploded, flooded and impoverished on a worldwide scale. Our title evokes Frantz Fanon's seminal book *The Wretched of the Earth* (1961), which called upon the wretched of the earth (*les damnés de la terre*) to rise up against imperialism in all its forms and create a new world that would depart from the hypocrisies and violence of European humanism. As Jennifer Wenzel and other scholars of postcolonial environmental humanities have pointed out, despite his profound anthropocentricism and utilitarianism with regard to the natural world, Fanon's work is crucial for recognising that, as he states, the land is 'the most essential value': 'European opulence […] has been nourished with the blood of slaves and it comes directly from the soil and from the subsoil of that under-developed world'.[1] That fundamental insight forms part of a long line of anti-imperialist critique that includes Justus von Liebig, the nineteenth-century German soil scientist and 'father of the fertilizer industry', whose work greatly influenced Marx's writing on soil and ecology and who identified British agriculture and imperialism as a policy of robbing the nutrients and resources of the soil of other countries.[2]

This special issue presents new research on, and in some cases generated through, contemporary art practices that both explore and intervene in the cultures, politics and systems of representation, as well as their attendant desires and violences, generated through human interaction with the soil. Our proposition is that, in order to fully understand Fanon's diagnosis

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[1] Frantz Fanon, *The Wretched of the Earth*, Constance Farrington, trans, Grove Press, New York, 1968, 96, 101–02, cited in Jennifer Wenzel, 'Reading Fanon Reading Nature' in *What Postcolonial Theory Doesn't Say*, Anna Bernard, Ziad Elmarsafy, and Stuart Murray, eds, Routledge, London, 2015, p 188. With thanks to Rob Nixon for pointing us to this reference. See also Elizabeth DeLoughrey and George Handley, 'Introduction: Toward an Aesthetics of the Earth' in *Postcolonial Ecologies: Literatures of the Environment*, Elizabeth DeLoughrey and George Handley, eds, Oxford University Press, Oxford, 2011, pp 3–39, at p.3; and Anne McClintock, *Imperial Leather*, (London and New York: Routledge, 1995.

In addition to Wenzel's, DeLoughrey and Handley's reading of Fanon, notable studies within a growing field that we might designate as 'postcolonial environmental humanities' include: Rob Nixon, "Environmentalism and Postcolonialism" in *Postcolonial Studies and Beyond*, ed. Ania Loomba et al (Durham: Duke University Press, 2005), 233–251; Elizabeth DeLoughrey, Jill Didur, Anthony Carrigan, eds., *Global Ecologies and the Environmental Humanities: Postcolonial Approaches* (London: Routledge, 2015); Upamanyu Pablo Mukherjee, *Postcolonial Environments: Nature, Culture and the Contemporary Indian Novel in English* (Basingstoke: Palgrave Macmillan, 2010); TJ Demos, *Decolonizing Nature: Contemporary Art and the Politics of Ecology* (Berlin: Sternberg, 2016).

[2] See John Bellamy Foster, *Marx's Ecology: Materialism and Nature* (New York: Monthly Review Press, 2000), especially p 164.

of 'the wretched *of* the earth', we must understand more deeply the extent this is due to the fact that the earth itself is wretched, and that part of this condition has been the destruction of 'ecological' relations *with* the earth. The phrase 'the wretched earth' signals our ongoing engagement with anti-colonial and anti-imperialist writers such as Fanon, but also the need to go beyond their reconfigured humanism to think about the multiple human and non-human co-habitations that constitute the soil and, more broadly, our more-than-human commons.[3]

In terms of its etymology and legal structures, colonialism, from the Romans onwards, has been inextricably bound with practices of cultivation, both culturally and agri-culturally.[4] Colonialism has always entailed the cultivation of lands as well as that of bodies and minds, through the imposition of a dominant (colonial, neo-colonial, modernist and now neoliberal) form of culture – one that was, and continues to be, deemed to be superior, more rational and Enlightened, of higher value and that is opposed to the 'nature' it seeks to construct and harness. As such, to use the words of the postcolonial literary scholar Pablo Mukherjee, 'colonialisms and imperialisms, old and new' must be understood 'as a state of permanent war on the global environment'[5] – including on the soil, both as a planetary entity and, in the words of María Puig de la Bellacasa, as the 'infrastructure of life.'[6] Colonialism, thus, must be understood as an 'offense against the earth'[7] – be this in its historical form or the contemporary realities of settler-colonialism, neo-colonial extractive capitalism (i.e., corporate colonialism) and practices of so-called development, as well as military 'scorched earth' policies (the destruction of the environment and infrastructure of a military 'enemy').[8] In the present-day, the expansion of intensive agriculture and extractive industries, not to mention the continued re-modelling of environments in the name of development and sustainability, continues the violation of the earth apace. As Kristina Lyons

[3] In this vein, our re-reading of Fanon, via Wenzel and others, is to be aligned with Rob Nixon and Naomi Klein's re-visiting of Edward Said who, in Klein's words, 'was no tree-hugger. Descended from traders, artisans and professionals, he once described himself as "an extreme case of an urban Palestinian whose relationship to the land is basically metaphorical".' Naomi Klein, 'Let Them Drown: The Violence of Othering in a Warming World', *London Review of Books*, vol. 38, no. 11 (June 2, 2016), http://www.lrb.co.uk/v38/n11/naomi-klein/let-them-drown. See also Rob Nixon, *Slow Violence and the Environmentalism of the Poor* (Cambridge, Mass.; London: Harvard University Press, 2011).

[4] Robert Young, for instance, tells us in his entry on *colonia* and *imperium* in Barbara Cassin's *Dictionary of Untranslatables* that the Latin term *colonia* – from *colere*, 'to cultivate' or 'inhabit' –draws upon the meaning of *colonus* as farmer and designated a settlement or farm estate, often granted to veteran soldiers in conquered territories. Robert Young, 'Colonia' in *Dictionary of Untranslatables: A Philosophical Lexicon*, ed Barbara Cassin (Princeton, NJ: Princeton University Press, 2013), pp 1056–1058, at p. 1056.

[5] Upamanyu Pablo Mukherjee, *Postcolonial Environments: Nature, Culture and the Contemporary Indian Novel in English* (Basingstoke: Palgrave Macmillan, 2010), p 68.

[6] See María Puig de la Bellacasa, "Encountering Bioinfrastructure: Ecological Struggles and the Sciences of Soil," *Social Epistemology*, vol. 28, no. 1 (2014): 26–40, at p. 27.

[7] DeLoughrey and Handley, 'Introduction: Toward an Aesthetics of the Earth', op cit, p.5.

[8] A notable example of 'scorched earth' tactics is the use US's use of the herbicide and defoliant Agent Orange as part of its warfare strategies to destroy the foliage and thus expose enemy combatants during the Vietnam War.

suggests, the Earth's soil has been 'host to all terrestrial experiments and tragedies', and as such is not only the sustainer of life, but 'grave' and 'trash dump'.[9]

But more than simply an offense *against* the earth, the conflicts signalled by our title are often enacted *through* the earth or natural environment; natural landscapes and vegetation are not simply the backdrop against which violence and dispossession unfold, but are mobilised as the very medium of violence, whether this be through the above-mentioned scorched earth tactics, or through the role of planting and environmental re-modelling – including the enclosure of territory in the name of environmental conservation – in land grabbing and dispossession.[10] As such, in order to fully grasp the violence of colonialism upon its subjects – those who have historically been deemed 'less-than-human' or 'not-quite-human' and denied access to 'human rights' – it is necessary to also address the violence carried out upon the landscape and environment.[11] Not to mention the structural violence (more often than not racialized) that limits access to resources and underlies a disproportionate exposure to toxicity on the part of certain, 'sacrificeable' populations.[12]

But the 'botanical conflicts' of our title also includes the epistemic violence (often amounting to what Gayatri Chakravorty Spivak would call 'epistemic violence' and Boaventura de Sousa Santos 'epistemicide')[13] enacted through the imposition of colonial systems of categorising forms of life, notably botanical taxonomy. Key here is the space of the garden, in multiple ways. Gardens in the Western imagination often have utopian, pre-lapsarian associations, but are in fact riven with ambivalences that stem from questions concerning who is displaced in order to demarcate their boundaries, and whose labour is exploited to maintain them as sites of nourishment and enjoyment. Let us recall here the original title of Fanon's book, *Les damnés de la terre*, often translated as the 'wretched' of the earth but more accurately translated as the 'damned' of the earth, from *damnum*, which refers to harm, hurt, or injury. As Lewis Gordon points out, evoking the biblical references in Fanon's text, the damned are those who fall below humanity, who are

[9] Kristina Lyons, 'The Poetics of Soil Health', 16 March 2016, http://blog.castac.org/2016/03/poetics-of-soil-health/.
[10] Regarding the conjunction between conservation and imperialism, see Richard Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600–1860* (Cambridge: Cambridge University Press, 1995). See also Rob Nixon, *Slow Violence and the Environmentalism of the Poor*, op cit, esp 175–98; and Grace A Musila, *A Death Retold in Truth and Rumour: Keny, Britain and the Julie Ward Murder*, James Curry, Oxford, 2015. See also Fazal Sheikh and Eyal Weizman, *The Conflict Shoreline*, Steidl, Göttingen and New York, 2015.
[11] Regarding the 'less-than-human' and 'not-quite-human', see Alexander G. Weheliye, *Habeas Viscus: Racializing Assemblages, Biopolitics, and Black Feminist Theories of the Human* (Durham: Duke University Press, 2015).
[12] See Naomi Klein, 'Let Them Drown', op cit. The water crisis in Flint, USA, is a notable example here.
[13] See Gayatri Chakravorty Spivak, 'Can the Subaltern Speak?' in *Marxism and the Interpretation of Culture*, ed. Cary Nelson and Lawrence Grossberg (Urbana, IL: University of Illinois Press, 1988), pp. 271–313; and Boaventura de Sousa Santos, *Epistemologies of the South: Justice Against Epistemicide*, Boulder: Paradigm Publishers, 2014.

sent below ground into what Gordon names 'the hellish zone of nonbeing'.[14] ('Damné' derives from the Latin *damna*, which refers to the hurt or lost, but the etymology is also mediated by the Hebrew *adamah*, from *'dem*, via the Kamitian/Egyptian *Atum*, which means 'man and clay or ground'.)[15] As such, the colonized subjects remain cast out of the Euro-Christian garden of earthly delights, even if it is precisely through their knowledge and labour that the actual garden that feeds and sustains this symbolic garden – notably, the plantation system – is cultivated.[16] In the introduction to *Sowing Empire: Landscape and Colonization*, Jill Casid refers to Freud's allusion to Adam and Eve's expulsion from the garden of paradise as 'a first diaspora, the expulsion from paradise, envisioned as a garden, into a world of agricultural toil'.[17]

The inauguration of botany as a scientific discipline, which in time came to be premised upon Carl Linnaeus' binomial system for classifying and hierarchizing forms of life,[18] took place as a consequence of the exploratory voyages of the European colonial project and the consolidation of the plantation system. In the eighteenth and nineteenth centuries, plantocracy shaped the emergence of scientific justifications for colonial racism. Botanical taxonomy, as Londa Schiebinger writes, can be understood as 'the base for all economics', and was vital for state purposes, since exact knowledge of nature was key to amassing national wealth, and hence power. As such, botanists were 'agents of empire', and systems of nomenclature and taxonomy 'tools of empire'.[19] Botanical nomenclature, based in Latin,[20] allowed a particular plant to be distinguished from all other plants over large units of space and time. As such, 'botanical conflicts' can here be understood through the epistemological hierarchies underpinning botanical taxonomy, insofar as imperial science sought to render scientific principles as universal and objective, in doing so suppressing the 'Babel' of local naming practices and abstracting plant life

[14] Lewis Gordon, 'Through the Hellish Zone of Nonbeing', *Human Archirecture: Journal of the Sociology of Self-Knowledge*, v, special double issue, Summer 2007, pp 5–12, at p 9.
[15] Gordon, 'Through the Hellish Zone of Nonbeing', op cit, p. 9. See also Cihan Aksan, 'Lewis R. Gordon: Revisiting Frantz Fanon's *The Damned of the Earth*', 22 April 2018, *State of Nature*, https://stateofnatureblog.com/lewis-gordon-revisiting-frantz-fanons-damned-earth/; and Kojo Koram, '"Satan is Black" – Frantz Fanon's Juridico-Theology of Racialisation and Damnation', *Law, Culture and the Humanities*, 2017, pp 1–20.
[16] This 'inclusive exclusion' echoes the 'obscene inclusion' described by Nicholas de Genova with regard to the UK illegalized labour force. Nicholas de Genova, "Spectacles of migrant 'illegality': the scene of exclusion, the obscene of inclusion," *Ethnic and Racial Studies*, vol. 36, no. 7 (2013): 1180–98.
[17] Jill Casid, *Sowing Empire: Landscape and Colonization*, Minneapolis, University of Minnesota Press, 2005, p xii.
[18] Linnaeus' binomial system was later developed into an international code regulating the naming of plants. See Jason T.W. Irving, 'Botanical Gardens, Colonial Histories, and Bioprospecting: Naming and Classifying the Plants of the World' in *Uriel Orlow: Theatrum Botanicum*, ed. Shela Sheikh and Uriel Orlow (Berlin: Sternberg Press, 2018), pp 73–80.
[19] Londa Schiebinger, *Plants and Empire: Colonial Bioprospecting in the Atlantic World* (Harvard University Press, 2009), p.5, p.11.
[20] This universalization of Latin can be understood through what Jacques Derrida names 'globalatinization'. Jacques Derrida, 'Faith and Knowledge: The Two Sources of "Religion" at the Limits of Reason Alone', trans. Samuel Weber, in *Acts of Religion*, ed. Gil Anidjar (New York & London: Routledge, 2002), pp. 40-101.

from its local ecology, as such erasing what Schiebinger names the 'biogeography' of plants.[21] By and large, imperial science (what we might call a 'monoculture of knowledge') excluded other, 'minor' histories and systems of knowledge ('ecologies of knowledges'),[22] as well as modes of being-in-the-world that are not premised upon the value, profitability and usefulness of plants that underpins the vampiric logic of capitalism towards nature – other systems that, from the perspective of today's planetary crises, might allow us to catch glimpses of what Bellacasa names 'alternative, liveable relationalities' that can 'hopefully [contribute] to other possible worlds in the making.'[23]

In the context of imperial botany, the space of the garden was vital, with the forerunners of the modern scientific botanic garden, which were established in sixteenth-century Italy, combining "the scientific ideal of comprehending universal nature" with religious motivations for recreating the garden of Eden by "gathering together all the creations scattered at the fall of man."[24] As such, the botanical garden can be understood as a laboratory of empire, as can tropical island colonies (also incubators for the revival of European Edenic discourse) and the space of the plantation more broadly.[25]

Moreover, the construction of the category of the '*damnés*' of the earth needs to be read in the context of this wholesale classification of forms of life enacted by imperial science. Notable botanists such as Linnaeus, as well as Hans Sloane and Joseph Banks, were influential in the development of scientific racism, as well as the endorsement of slavery and colonization of foreign territories.[26] Colonial natural science, in particular Linnaean taxonomy, was central in the construction of race and sexuality, insofar as each became elevated as a fundamental marker of difference. Linnaeus first classified human beings according to a racial taxonomy divided into four categories, determined by geography – homo sapiens Americanus, Europaeus, Asiatiticus

[21] Insofar as the idea was to produce a schema that would render foreign forms of life comprehensible first and foremost to Europeans, we might liken this practice of naming and controlling otherness to Edward Said's Orientalism.
[22] The notion of a 'monoculture of knowledge' versus an 'ecology of knowledge' can be found in the work of Portuguese sociologist and proponent of 'epistemologies of the South' Boaventura de Sousa Santos. See, for instance, Boaventura de Sousa Santos, João Arriscado Nunes, and Maria Paula Meneses, "Introduction: Opening Up the Canon of Knowledge and Recognition of Difference," in *Another Knowledge is Possible: Beyond Northern Epistemologies*, ed. Boaventura de Sousa Santos (London: Verso, 2008), xix–lxii.
[23] María Puig de la Bellacasa, "Making Time for Soil: Technoscientific Futurity and the Pace of Care," *Social Studies of Science*, vol. 45, no. 5 (2015): 692.
[24] Richard Harry Drayton, *Nature's Government: Science, Imperial Britain, and the 'Improvement' of the World* (Yale: Yale University Press, 2000), pp 4–6, cited in Irving, 'Botanical Gardens, Colonial Histories, and Bioprospecting', op cit, p 75.
[25] Regarding tropical island colonies as laboratories of empire, see DeLoughrey and Handley, 'Introduction: Toward an Aesthetics of the Earth', op cit, p 12.
[26] See Irving, 'Botanical Gardens, Colonial Histories, and Bioprospecting', op cit, p 79.

and Africanus – as well as two further categories: 'wild man' and 'man-made' monsters.[27] From thereon, hierarchies of race came to bear upon forms of knowledge across fields such as economy, politics and philosophy that were central to upholding capitalist relations of exchange and the justification of colonial expansion.[28]

This was a moment of the globalization of measurement and quantification as the primary techniques for taxonomising and classifying life, an effect of which was the production of what Mary Louise Pratt names a 'planetary consciousness'.[29] Crucial here was the space of the European colonial plantation, through which a landscape model of scalability was enacted that provided the model for smooth expansion.[30] The scalability of the plantation system, which 'banishes meaningful diversity',[31] can be seen as the basis of what Donna Haraway names the 'Plantationocene', which continues today 'with ever-greater ferocity in globalized factory meat production, monocrop agribusiness, and immense substitutions of crops like palm oil for multispecies forests and their products that sustain humans and critters alike.'[32]In her interrogation of the term 'Anthropocene', Anna Tsing draws our attention to the threat posed by the ecological simplifications produced by various forms of 'plantation' to the liveability of the planet. 'Earth stalked by Man' is the figure that in her thought condenses this Enlightenment project of modernisation.[33]

While Fanon was no environmentalist, he recognised that what was at stake in decolonisation was sovereignty over natural resources; deprived of that, and the infrastructures that economic power enables, the colonised are kept in conditions of wretchedness.[34] In retrospect, the promise of decolonization was betrayed by numerous factors, many of which were predicted by Fanon at the time of writing *The Wretched of the Earth*. We can add to his insights newly independent

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[27] Brenna Bhandar, 'Title by Registration: Instituting Modern Property Law and Creating Racial Value in the Settler Colony', *Journal of Law and Society*, vol 42, no 2 (June 2015), pp 253–82, at p 276. See also Brenna Bhandar, *The Colonial Lives of Property*, Duke University Press, Durham, 2018.
[28] Bhandar, 'Title by Registration', op cit, p 37.
[29] Mary Louise Pratt, *Imperial Eyes: Travel Writing and Transculturation*, Routledge, London, 1992, pp 15–37.
[30] As Tsing writes, progress […] has often been defined by its ability to make projects expand without changing their framing assumptions. This quality is "scalability".' Scalability provided self-contained, interchangeable project elements as follows: 'exterminate local people and plants; prepare now-empty, unclaimed land; and bring in exotic and isolated labor and crops for production.' Anna Tsing, *The Mushroom at the End of the World* (Princeton and Oxford, Princwton University Press), pp 38–39. See also Anna Tsing, 'Earth Stalked by Man', *The Cambridge Journal of Anthropology*, 34 (1), Spring 2016.
[31] Tsing, *The Mushroom at the End of the World*, op cit, 38.
[32] Donna Haraway, 'Anthropocene, Capitolocene, Plantationocene, Chthulecene', *Environmental Humanities*, vol 6, 2015, pp.159–165, note 5, p.162.
[33] Anna Tsing argues that the plantation functions as a figure of the ecological simplications 'in which living things are transformed into resources – future assets – by removing them from their life-worlds. Plantations are machines of replication, ecologies devoted to the replication of the same. ' The plantation system is energised by a tendency to proliferate, and its power lies in its scalability, which has allowed plantations of various kinds to become ubiquitous, even while their spread remains 'patchy' and incomplete. Tsing, 'Earth Stalked by Man', op cit, p 4.
[34] Wenzel, 'Reading Fanon, Reading Nature', op cit, p.187.

nations' embrace of the US-led Green Revolution, which, through the global export of high-yielding crop varieties, sought to increase productivity on a global scale, but which in fact has been shown to have reduced agricultural biodiversity and poisoned the earth through the widespread use of pesticides.[35] (In reality, the seeming benevolence and developmental impulse of this 'revolution', exported from the then First World to what was the then acceptably termed Third World, is revealed to have been carried out in order to stall communist ascendency, and with the economic benefits of capitalist countries in the West in mind.)[36] This is not to say that technological development is to be rejected out of hand (postcolonial science and technology studies and feminist theorisations of science, for a start, have argued the case for access and representation as necessary to the decolonization of science and technology), but rather that the past decades have shown that we need to move beyond the utilitarianism of Fanon's approach, which limits the usefulness of his writing for engaging with present-day environmental crises.

Given this state of devastation and the wretchedness of the E/earth in all its multiple forms, what would it mean to address the planetary from the ground up? According to Bellacasa, soil is the infrastructure of life itself, and like other forms of infrastructure, it perhaps only become visible more broadly when it starts to break down.[37] This is certainly the point we have reached across much of the Earth as we transgress the 'planetary boundaries' within which life is sustainable.[38] Soil is the stuff of life, and it is made up of our residues – it transforms them into humus, and our connection to that fragile layer of the planet on which human life depends is acknowledged in the fact that our species name, human, is derived from humus. Bellacasa argues that we need a shift in perspective that makes the soil visible in all its liveliness, peopled by all kinds of beings – earthworms, fungi, nematodes and microbes – that sustain its health. She points out that making the 'invisible workers of the soil' visible is not a neutral affair: 'Words matter: thinking of worms as managers reproduces the hierarchies of capitalist productionist culture.'[39] Understanding earth as a living organic web of being that involves many creatures including humans involves a breaking with human exceptionalism through changes in practices as well as a shift away from the language of management and services in relation to the soil.

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[35] See Vandana Shiva, 'The Green Revolution in the Punjab', *The Ecologist*, vol 21, no 2, March-April 1991.
[36] See Jack Ralph Kloppenburg, Jr., *First the Seed: The Political Economy of Plant Biotechnology, 1492–2000*, 2nd ed. (Wisconsin: University of Wisconsin Press, 2004).
[37] Puig de la Bellacasa, Maria (2014), Encountering Bioinfrastructure', op cit, pp.26–40, p.36.
[38] Of the nine planetary boundaries identified by Rockström et al within which we need to remain in order to sustain life within the Earth System, those relating to loss of genetic diversity and biochemical flows (phosphrous and nitrogen) have already been transgressed to dangerous levels. Rockström, Johan et al ((2009), Planetary Boundaries: Exploring the Safe Operating Space for Humanity. Ecology and Society, 14 (2). Available at: www.ecologyandsociety.org/vol14/iss2/art32. 'Figures and data for the Updated Planetary Boundaries', 2015, http://www.stockholmresilience.org/research/planetary-boundaries/planetary-boundaries-data.html.
[39] Puig de la Bellacasa, Maria (2014), Encountering Bioinfrastructure: Ecological Movements and the Sciences of Soil. *Social Epistemology*, 28(1), p.35.

From this perspective soil is a 'planetary term'.[40] This 'planetarity' is not based on the abstractions of Western universalism and the globalising territorialisations of corporate capitalism, but rather on a sense of inter-dependence and connectedness that insists upon the radical alterity of indigenous ways of life and other marginalised worlds-in-the-making.

Such a planetary perspective on the scale of environmental damage is essential to understand the plight of today's 'wretched of the earth': the populations most affected by forms of environmental degradation and dispossession that have impacted an estimated three-quarters of the terrestrial surface of the Earth. A recent UN-backed report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) published in 2018 confirmed land degradation to be a pervasive systemic phenomenon that is occurring in all parts of the terrestrial world and takes many forms. However, the authors of the report argued that there was a widespread lack of awareness of the scale and extent of the problem.[41] The expansion of crop and grazing land, unsustainable agricultural and forestry practices, climate change, urban expansion, infrastructural development and the extractive industries are drivers of land degradation that now negatively affects the well-being of at least 3.2 billion people and is pushing the planet towards a sixth mass species extinction.[42] The IPBES report notes that national and international policy and governance responses tend to be fragmented and focused on mitigating damaged already caused. Such approaches tend to obscure underlying causes, including the worldviews and policies that uphold them, and marginalise indigenous and local bodies of knowledge that have developed over time within given ecosystems and offer alternative visions of how humans might co-exist with other species and, in the words of the eco-feminist and environmental activist Vandana Shiva, become 'co-producers with Nature'.[43]

'The Wretched Earth: Botanical Conflicts and Artistic Interventions' seeks to bring into dialogue anti-imperialist critique and artistic research that focuses on the multiple human and non-human co-habitations that constitute the soil, and the various forms of life and culture that they sustain in the face of ongoing threats to land sovereign, food security and environmental degradation, as well as the erosion of cultures and value systems that are intimately intertwined with particular

[40] Puig de la Bellacasa, Maria (2014), Encountering Bioinfrastructure: Ecological Movements and the Sciences of Soil. *Social Epistemology*, 28(1): 26-40, p.36.
[41] PBES (2018), 18-24 March: 'Summary for policymakers of the thematic assessment report on land degradation and restoration of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services'. R. Scholes, L. Montanarella, A. Brainich, N. Barger, B. ten Brink, M. Cantele, B. Erasmus, J. Fisher, T. Gardner, T. G. Holland, F. Kohler, J. S. Kotiaho, G. Von Maltitz, G. Nangendo, R. Pandit, J. Parrotta, M. D. Potts, S. Prince, M. Sankaran and L. Willemen (eds.). IPBES secretariat, Bonn, Germany. p.3 – 4. https://www.ipbes.net/sites/default/files/downloads/ipbes-6-15-add-5_spm_ldr_advance.pdf
[42] Ibid, p 10.
[43] Vandana Shiva, *Soil Not Oil: Environmental Justice in an Age of Climate Crisis*, North Atlantic Books, 2007, p.6.

ecosystems. The phrase 'Botanical Conflicts' was first used in the title of the research workshop 'Botanical Conflicts: Colonialism, Photography and the Politics of Planting', which was organised by Ros Gray, Shela Sheikh and the artist Corinne Silva at Goldsmiths, University of London in 2015.[44] Approaches gathered here are various, and although *Third Text* has a long tradition of providing a platform for artists to shape debates on contemporary art and visual culture, this issue has, perhaps more than most, numerous artists writing about their own research generated as part of practices that involve cultivation or the production of food and other plant-based goods as an intervention into different fields, including urban community gardens, farms, and scientific and agricultural institutions. These interdisciplinary sites, which bring together methodologies from contemporary art, expert and citizen-science, agriculture and other fields, emerge as testing grounds for experiments aimed at improving 'planetary health', through artistic interventions and critical inquiry into the independence of humans, infrastructures and natural systems.[45]

In the current proliferation of discussions surrounding the Anthropocene (or what Nicholas Mirzoeff has named 'the white-supremacy-scene'),[46] many have critiqued both the anthropocentrism of mainstream environmentalist and social justice movements and questioned who exactly it is that the 'human' of the 'Anthropos' or 'human-induced climate change' refers to.[47] As scholars such as Zoe Todd have made clear, it is not humans per se that have exerted such a destructive force on the E/earth, but only some forms of sociality; just as it is not humans per se who bear the brunt of this or of Anthropocentric climate change.[48] Such an argument is forcefully made by Françoise Vergès, who critiques the illusion that persists in Dipesh

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[44] We would like to thank Silva for the term 'botanical conflicts'. Through her photographic practice, Silva has examined suburban gardens and nature reserves in Israel–Palestine as sites where the use of planting as a weapon of settler occupation is particularly in evidence. See Corinne Silva, *Garden State*, 2016.

The Botanical Conflicts workshop included a number of speakers whose writing is included in this issue and who sought to explore the relation between planting and colonialism, including warfare, land-grab, the expropriation of natural resources and indigenous knowledge, and the epistemic violence of colonial botanical taxonomy. Speakers were Shela Sheikh, Ros Gray, Corinne Silva, Sigrid Holmwood, Rosario Montero and Hannah Meszaros Martin.

The present special issue has been germinating over a long period of time and in several countries; hence there are too many people to acknowledge here. In the context of Goldsmiths, we would like to thank Kodwo Eshun, Susan Schuppli and Eyal Weizman for their encouragement and input.

[45] For an exemplary curatorial practice that elaborates these ideas, see Nicola Triscott, 'Art and Intervention in the Stewardship of the Planetary Commons: Towards a Curatorial Model of Co-Inquiry', PhD Thesis, 2017.

[46] Nicholas Mirzoeff, 'It's Not The Anthropocene, It's The White Supremacy Scene; or, The Geological Color Line', in Richard Grusin, ed, *After Extinction*, University of Minnesota Press, Minneapolis, 2016, pp.123–151.

[47] See Anna Tsing, 'Earth Stalked by Man', op cit; and TJ Demos, *Against the Anthropocene: Visual Culture and the Environment Today*, Sternberg Press, Berlin, 2017.

[48] Zoe Todd, 'An Indigenous Feminist's take on the Ontological Turn: "ontology" is just another word for colonialism', 24 October 2014, https://zoeandthecity.wordpress.com/2014/10/24/an-indigenous-feminists-take-on-the-ontological-turn-ontology-is-just-another-word-for-colonialism/; Zoe Todd, 'Indigenizing the Anthropocene' in *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environments and Epistemologies*, Heather Davis and Etienne Turpin, eds, Open Humanities Press, London, 2015, pp 341–54.

Chakrabarty's seminal 'The Climate of History: Four Theses' of an organic and undifferentiated universal humanity.[49] Referencing Jason Moore's proposal of the Capitalocene as an alternative to the Anthropocene, Vergès instead chooses the term 'racial Capitalocene' to capture the roots of the Anthropocene in colonialism and capitalism, and the racializing processes therein, as described above with regard to colonial science and the plantation system.[50] Such a line of enquiry acknowledges the eco-racism at play in both the naturalisation of race and the sacrificial, racialized populations that are exposed to environmental violence – what Naomi Klein has termed 'the violence of othering in a warming world'.[51]

However, the articles contained in this issue centre the fact that, as Vergès argues, peoples of the South and minorities are not just 'the prime victims' of the ecological disasters caused by ongoing corporate colonialism. Rather, they have developed crucial analyses and resources to challenge environmental racism and 'build counter-powers'.[52] Across the articles, minor histories (subaltern or otherwise) are unearthed in order that the lessons of past struggles are not left buried or silenced, and that they might be learned from – and updated where necessary – in order to tackle the Earth's present wretchedness.[53] The Earth provides a powerful metaphor in articulating the need to construct new planetary alternatives based on actual practices of soil care. As Vandana Shiva points out, 'soil is a metaphor of decentralized and deep democracy. […] Consumer democracy is a pseudo-democracy associated with economic dictatorship; it desertifies the soil of real democracy. Authentic democracy, like plants, grows from the ground up. It is fertilized by people's participation.'[54] There is an urgent need for transition to equitable democracies sustained by modes of production in which humans are 'coproducers with nature'; as Shiva stresses: 'There is no alternative to fertile soil to sustain life, including human life, on earth.'[55] Across the articles that follow, this 'coproduction' takes varying forms, for instance through discussions of 'more-than-human' or 'multispecies' socialities and 'worldmaking' practices, and

[49] Françoise Vergès, "Racial Capitalocene: Is the Anthropocene Racial?" Verso Blog, 30 August 2017, https://www.versobooks.com/blogs/3376-racial-capitalocene.
[50] See Jason Moore, *Anthropocene or Capitalocene?: Nature, History, and the Crisis of Capitalism*, PM Press, Oakland, 2016.
[51] Klein, 'Let Them Drown', op cit.
[52] Vergès, "Racial Capitalocene', op cit.
[53] Contemporary examples of agriculture as a site of resistance include efforts in forming cooperatives to create healthy rural communities in the Southern States as an alternative to peoples of colour migrating to urban centres in the North: see Monica M. White, *Freedom Farmers: Agricultural Resistance and the Black Freedom Movement*, University of North Carolina Press, 2018. For historical examples, see Edouard Glissant's reading of the creole garden in *Edouard Glissant: One World in Relation* dir. by Manthia Diawara; and Casid, *Sowing Empire*, op cit, esp the chapter 'Revolting Landscapes', pp191-242. See also Londa Schiebinger's study of slave women's use of abortifacients to induce abortion and hence interrupt the reproductive labour demanded of them. Schiebinger, *Plants and Empire*, op cit. For an analysis of the invisible work of reproduction performed by African women during the slave trade (as yet not sufficiently acknowledged in counter-histories of slavery), see Françoise Vergès, *Le ventre des femmes: Capitalisme, racialization, féminisme* (Paris: Albin Michel, 2017), forthcoming as *Women and their Wombs: Capitalism, Racialization, Feminism* (Duke University Press, 2018).
[54] Shiva, 'Soil Not Oil', op cit, p 7. See also Couze Venn, *After Capital*, Sage, 2018.
[55] Shiva, 'Soil Not Oil', op cit, p 6.

the possible reconfiguration of legal, ontological, cosmological and perspectival frameworks so as to include what Marisol de la Cadena names 'earth-beings' as actors in political assemblies.[56] Here, both the earth and its inhabitants might be considered not simply wretched, but also as a source of testimony to past traumas, and possible repair and regeneration.

Nomusa Makhubu's article 'The Poetics of Entanglement in Zina Saro-Wiwa's Food Interventions' makes a study of Saro-Wiwa's artistic responses to the ecological devastation caused by corporate oil extraction in the Niger Delta that threatens the survival of the Ogoni people. Makhubu argues that works such as Saro-Wiwa's video installation *Karipko Pipeline* (2015) draw on the cosmology of the Ogoni people and resonate with the poetry and political activism of the artist's father, the writer, television producer and journalist Ken Saro-Wiwa. Ken Saro-Wiwa founded the Movement for the Survival of the Ogoni People (MOSOP) to organise a nonviolent campaign against the 'ecological genocide' caused by international corporations including Royal Dutch Shell.[57] In 1995 he and eight others were executed by the regime of General Sani Abacha who, in collusion with Shell, framed the Ogoni nine for crimes that they did not commit.[58] Zina Saro-Wiwa's food interventions involve the preparation of elaborate banquets featuring as ingredients the flora and fauna of the Niger Delta, replacing the black oil that is implicated within the destitution of the land and its people with nutritious locally produced palm oil. Makhubu argues that food interventions such as the Mangrove Banquet that took place at the Blaffer Art Museum in 2015 evoke cultural and spiritual entanglements with the land that may be damaged by multiple forms of trauma, loss and displacement. Saro-Wiwa's mode of 'telling new stories about Africa' through cuisine challenges the limiting but still pervasive stereotype of the continent as the site of perpetual war and famine, while also critiquing conditions of impoverishment caused by the insatiable greed of international monopoly capitalism (what Jean-François Bayart calls 'the politics of the belly').[59] As such, the work focuses on the survival of cultural richness in the face of adversity, constituting a series of experimentations with emancipatory decolonial aesthetics that create new possibilities for subverting the colonialist power relations the dominate food production and consumption, even while it remains implicated within neo-colonial structures of the art-oil economy.

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[56] Marisol de la Cadena, 'Indigenous Cosmopolitics in the Andes: Conceptual Reflections Beyond "Politics"', *Cultural Anthropology*, vol 25, no 2, 2010, pp 334–70.
[57] Ken Saro-Wiwa, *Genocide in Nigeria: The Ogoni Tragedy*, 2000. Saros International Publishers.
[58] In 2009 Shell agreed to pay $15.5m (£9.6 million) in settlement of a legal action that accused the multinational corporation of colluding with the Nigerian government in the execution of Ken Saro-Wiwa, Saturday Dobee, Nordu Eawo, Daniel Gbooko, Paul Levera, Felix Nuate, Baribor Bera, Barinem Kiobel and John Kpuine. Shell was also accused of a series of other alleged human rights violations, including working with the army to bring about killings and torture of Ogoni protesters. The company was alleged to have provided the Nigerian army with vehicles, patrol boats and ammunition, and to have helped plan raids and terror campaigns against villages. https://www.theguardian.com/world/2009/jun/08/nigeria-usa
[59] Jean-François Bayart: *The State in Africa: The Politics of the Belly*, 1993. Longman.

In an article entitled 'Making Time For Soil: Technoscientific Futurity and the Pace of Care', María Puig de la Bellacasa addresses modes of soil care such as permaculture that are obscured by hegemonic timescales of technoscientific futurity and innovation. Rather than consider soil simply as a receptacle for the cultivation of crops – in other words, a site of productivity or financial return – Bellacasa asks us to engage with soil as a living, interdependent community and with forms of soil ecology that feature alternative human-soil relations and what she calls a 'care time'.[60] Shela Sheikh's article, 'Planting Seeds/The Fires of War', addresses such a proposition indirectly, taking a historical step back to the US-sponsored Green Revolution, which sought to increase productivity according to a techno-capitalist conception of progress. However, as Sheikh argues, such a conception of futurity and innovation pigeon-holes 'traditional' practices of both cultivation and conservation – practices that resonate with the 'care time' described above – in a 'frozen', unchanging state, thus enacting forms of 'imperialist nostalgia' and 'environmental Orientalism'.

Sheikh offers a reading of Jumana Manna's *Wild Relatives*, a feature-length film that traces the journey of seeds from Syria between the Global Seed Vault at Svalbard in Norway and a branch of the International Center for Agricultural Research in Dry Areas (ICARDA) in the Bekaa Valley in Lebanon. In 2015, as the film recounts, ICARDA requested a withdrawal of seeds held at Svaldbard that were duplicates of local varieties stored in ICARDA's Aleppo branch that were under threat from the ongoing civil war in Syria. Following the annual life cycle of the seed, *Wild Relatives* documents the retrieval of duplicate seeds from their frozen state in Svalbard and their transportation to the fields, laboratory and gene bank in the Bekaa Valley, where they are reawakening through cultivation. As Sheikh demonstrates, the film addresses the conflict between local cultivation practices that have nurtured varieties suited to particular local climates and conditions and the legacies of the Green Revolution, widely adopted by postcolonial states seeking to push forward a developmentalist agenda. *Wild Relatives* brings into relation two geographically remote, semi-arid landscapes that each house institutions concerned with the preservation of biodiversity in the face of conflict and natural disasters. Sheikh evokes the logic of the *pharmakon* – which functions indeterminately as both poison and cure – to argue that while forms of cryopreservation are often employed at institutions such as Svalbard with good intentions, the privileges they afford to agribusiness reveal a concerning neo-colonialism, echoing the ambivalent role of humanitarian intervention in global conflicts. Alongside the seed, *Wild Relatives* focuses on various human protagonists, from Syrian refugees living in the Bekaa Valley, to farmers who can no longer make a living from the cultivation of crops, to scientists and even a priest. This 'chorus of stakeholders', in Sheikh's phrase, expounds varying approaches to seed

[60] 'Care time' reveals a diversity of more-than-human interdependent temporalities that can challenge dominant notions of technoscientific innovation that are based on linear temporalities of so-called progress. María Puig de la Bellacasa, "Making Time for Soil", op cit, p.692

stewardship, offering an alternative to the 'techno-capitalist wizardry' of cryopreservation as a kind of filmic counter-magic (one that embraces the magic that capitalism seeks to suppress), manifested through the celebration of reciprocal, co-evolutionary human–plant relationships.

Hannah Meszaros Martin's contribution, "'Defoliating the World": Ecocide, Visual Evidence and "Earthly Memory"', emerges from her fieldwork in Columbia into the state-sanctioned eradication of the coca plant and the often-overlooked environmental aspect of warfare and its legal categories. Where modernity had relegated nature to a passive object to be crafted, controlled and capitalized upon as opposed to the agency granted human culture, here Martin points to a troubling shift: in the rhetoric of the state (as part of the US-led War on Drugs), the coca plant is granted personhood not as the bearer of rights (as in the recognition of the rights of nature that is growing worldwide, notably initiated in Bolivia and Ecuador) but as ontologically guilty, even prior to its contact with human beings and its processing into its alkaloid derivative, cocaine, therefore warranting its outlawing and eradication. Moreover, through the eradication programmes whereby the plant is aerially fumigated with the herbicide glyphosate, a process of co-criminalization occurs between the natural ecosystem in which the plant grows and the cultural practices that surround it; with this, violations of human and nonhuman rights are entangled.

Martin assembles aspects of her practice-led research project, informed by her involvement with the Forensic Architecture group, in which she examines the War on Drugs as an ecocidal war that can be traced back through imperial warfare. As with the US-led Green Revolution that sought to temper leftist movements of the then Third World indirectly through agricultural policy, the 'ecocidal' history that Martins traces is linked to the Cold War imaginary of a particular kind of 'enemy': not narcotics as such but rather the political groups associated with them. Where the broader framing of this issue calls for a shift in perspective in order to make visible the liveliness and wretchedness of the soil, Martin organises her article through various frames and scales of representation and perspective, including that of the plant itself. This is done in order to challenge 'state-seeing' and to critique existing forms of visualisation and evidentiary practices, instead suggesting more hybrid forms, departing from the modernist imaginary, that might better grasp the diffused nature of environmental violence. Finally, Martin turns to the memory of the earth itself (including its multispecies ecology), suggesting that existing categories of violence need to include the exhaustion and rupture of the soil, and that this 'earthly memory' might be mobilized in the context of environmental truth and reconciliation and broader practices of 'repair'.

Filipa César's article re-visits Amílcar Cabral's early writings on agronomy, arguing that his soil science is not dissociable from his better-known role as an anti-colonial activist and theorist of revolution in Guinea-Bissau. The essay draws on research situated within an artistic practice that includes filmmaking, archival activism through the digitalisation of militant films made during the armed struggle against Portuguese colonial rule in Guinea-Bissau and in the years immediately following independence in 1974, and collaboration with Guinean filmmakers such as Sana Na N'Hada and Flora Gomes, among others. Reading Cabral's much under-studied *Estudos Agrários*, César demonstrates how as a doctoral student Cabral developed an understanding of soil as a dynamic, living historical body produced through the process of meteorisation of rock that built on the field of soil science that had emerged since the nineteenth century, particularly through the work of such figures as Justus von Liebig, Ferdinand von Richthofen and Vasily Dokuchaev. Later as a colonial State agronomist working in Portuguese Guine and Angola, he identified acute problems of soil erosion and analysed their causes in agricultural practices in use within the colonial plantation system. César argues that the scientific data Cabral produced during his work as an agronomist for the colonial regime enriched his theoretical arguments, in which he denounced the injustices perpetrated on African land. Moreover, the situated knowledge of Guinea-Bissau's land and peoples that he compiled became crucial later to his strategies of warfare and to his plans for decolonisation after independence. Crucially for the latter, the article draws attention to the farm that Cabral established in Pessubé in 1953 as an 'experimental laboratory', which was intended to change farming practices with the aim of emancipating people and repairing the land. The films that César has been involved in digitalising as part of the Living Archive project at the Arsenale in Berlin testify to an effort that continued after Cabral's assassination to harness cinema to a project of revolutionary nation-building, with films made in Creole to facilitate the exchange of agricultural knowledge and interaction between different ethnic groups in Guinea-Bissau.

While César's article points to a moment when the revolutionary nation-state could be conceived proleptically as an emancipatory frame for the decolonisation of agriculture and for the safeguarding of indigenous sovereignty, modern nation-states have more frequently promoted 'scalable' models of agricultural production that banish biodiversity in the name of modernisation and involve ever more sophisticated technologies of surveillance and control of human and non-human bodies. Moreover, the nation-state is the site of what we can call 'botanical nationalism': the creation of imaginaries of belonging tied to 'native' flora and fauna, 'authentic' landscapes

and the rhetoric of 'blood and soil',[61] as well as the xenophobic policing of borders against 'invasive species' and the exclusionary politics of right-wing, nativist environmentalism.[62]

Richard William Hill's article 'Borderless Histories: the Botantical Art of Maria Thereza Alves' examines how Maria Thereza Alves's art works over some two decades have explored the way in which the colonial histories of migration, exploitation and exchange can be observed in plants 'growing wild, so to speak, in the national landscapes of European nation states'. Hill argues that Alves's artistic practice, which combines methods of natural sciences, documentary, historical revision, fictive re-imaginings and social and political critique, transgresses boundaries that arise at the intersection between botany and colonial ideology, so as to unpick the emotive narratives woven through plant symbolism that are put to the service of upholding national, religious and cultural identities grounded in exclusion. Hill analyses a wide range of the artist's botanical art that seeks to 'liberate a discourse of migration from colonial and nationalist narratives', often through an exploration of the strange sentimental attachments and surreal significations that landscape and flora generate through transplantation and displacement. The unintended human distribution of seeds is a theme that has grounded some of Alves' best-known projects, including the many iterations of *Seeds of Change* (1991–ongoing), which investigates ballast flora in European ports. Drawing on the participation of botanists, amateur gardeners and the enthusiasm of local communities, Alves' ballast seed gardens involve an aesthetic experience that also involves botanical education and social and political history. As Hill points out, the illicit and accidental migrations of plants have long been an overlooked feature of local landscapes, and Alves' work is timely in drawing attention to them at a moment of ecological crisis that is accelerating movements of migration worldwide. As Hill remarks: 'There is a powerful tension in her practice between our sense that we are seeing documentation of the factual and obvious, evidence that is often right before us, and our recognition that we had nevertheless been unable to see it without the artist's assistance.'

Khadija von Zinnenburg Carroll's article 'NonWest by North: Marianne North and William Colenso's Responses to Plantlife and the Classification of Economic Botany' explores the conflicts between central patriarchies and peripheral establishments of natural science, and

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[61] Notable artistic exploration of the creation of nationalist imaginaries through planting and landscaping are Corinne Silva's *Garden State* (2016) and Uriel Orlow's *Theatrum Botanicum* (2016–2018).

[62] See Jean Fisher, 'Migration's Silent Witnesses: Maria Thereza Alves' *Seeds of Change*', http://www.jeanfisher.com/migrations-silence-witnesses-maria-thereza-alves-seeds-change/. Regarding 'right-wing environmentalism', see Out of the Woods, 'Lies of the Land: Against and Beyond Paul Kingsnorth's Völkish Environmentalism', 31 March 2017, https://libcom.org/blog/lies-land-against-beyond-paul-kingsnorth's-völkisch-environmentalism-31032017.

between indigenous and colonial botany and its artistic representations. Von Zinnenburg Carroll begins by setting out the role that artists have played in the transfer and shaping of botanical knowledge, revisiting the life and work of the botanical artist Marianne North (1830–90) to show the hierarchies and blind spots at play within the tradition of imperial botany both at home and abroad in its side-lining and appropriation not only of indigenous knowledge of the vegetal world, but also of the knowledge and skill of women such as North. She agues that North's paintings present plants in ways that go beyond the theories of her more recognised peers such as Charles Darwin and Thomas Malthus. Von Zinnenburg Carroll's historical reading, inflected by her practice as both artist and curator, brings North's reading of Darwin's theories of conflict between species into conversation with the contemporary 'plant turn' in philosophy, critical theory and contemporary artistic debates as well as Actor Network Theory. She argues that, through North's portraits and observations, plants can be understood themselves not simply as objects of knowledge but as 'expert practitioners, living active rather than immobile lives'.

Bringing North's non-hierarchical ideas into conversation with contemporary re-readings of Darwin, Von Zinnenburg Carroll's argues that North was ahead of her time in understanding plants as part of an affectively charged, multisensory partnership with other living beings such as humans and insects that counters the superiority of the human species often attributed to Darwin's theories. Rather than mere illustrator subservient to the 'expertise' of the scientist, the female botanical artist here actively shapes knowledge of the vegetal world. Furthermore, Von Zinnenburg Carroll revisits the work of William Colenso (1811–1899), another amateur botanist who argued against the exclusion of the local Māori names for plants in systems in botanical classification, and was also side-lined by the establishment. Reading the botanical archive against the grain, Von Zinnenburg Carroll sets out to enliven the significance – historical and contemporary – of both North and Colenso's mis-recognition.

In her article 'The Order of Potatoes: On the Pursuit of Purity and Variation in Plant Breeding', artist Åsa Sonjasdotter develops two narrative strands that intersect within her ongoing project 'The Order of Potatoes', which combines potato breeding and artistic research at the Prinzessinnengarten in Berlin and other sites and spaces of exhibition.[63] Her title refers to Michel Foucault's book *The Order of Things* (1966), which considers the epistemological shift with regard to living organisms that occurred with the consolidation of Linneaus' system of botanical categorisation.[64] Sonjasdotter's narrative 'On Linearity and Purity' describes the attempt to produce genetic purity and linearity for the purposes of commercial potato growing in Sweden, a project that has involved the appropriation of farmers' knowledge of potato breeding by

[63] http://www.potatoperspective.org/.
[64] Michel Foucault, *The Order of Things: Archaeology of the Human Sciences*, 2001 [1966]. London and New York: Routledge.

scientific and corporate organisations. The potato is a crop originating from Peru that, as it has migrated across the Atlantic, has played a crucial role in feeding the poor, and, as Sonjasdotter describes, the pursuit of genetic purity 'marked the beginning of a new order in the farm fields' based on standardisation of plant life. The resulting in a loss of biodiversity in commercial crops is maintained by the legal restrictions enforced by inter-governmental bodies such as the European Union, so that the 'liveliness of the human-plant dialogue' has been widely replaced by industrialised, monocultural farming landscapes. Her other strand of narrative, 'On SpaceTime and Hybridity' takes a more circuitous route through the names, stories, smells and tastes of a number of farmer-bred varieties, unstable hybrid forms cultivated by Sonjasdotter and other activist cultivators in defiance of commercial legal restrictions so as to maintain biodiversity. Drawing on the materialist philosophy of Karen Barad, Sonjasdotter argues that the form of these potatoes can be understood as the result of many years of intra-species collaboration between plants and humans, and that while the knowledge of how to breed potatoes is no longer widespread, its secrets are lodged within the potato itself, manifested in terms of shape, texture, colour, taste and smell.

Sigrid Holmwood's article 'Cultivating Colour: Making Mayan Blue from Woad' reveals an artistic practice that brings together two figures – the European peasant and the indigenous Amerindian – whose displacement has historically been central to the genocidal consolidation of patriarchal capitalist colonialism and its erasure of local and indigenous techniques and knowledge. As Holmwood relates, paintings of peasants as either picturesque or unruly and grotesque became highly sought when the commercial art market emerged at the same time as the first stock exchange in Northern Europe. This moment in the development of modern capitalism was made possible through the enclosures, the massive seizure and privatisation of common land over a number of centuries that displaced rural communities and transformed peasants into wage labourers. In her art practice, Holmwood uses re-enactment and cultivation of a pigment garden to conjure the figure of 'the peasant who paints' (as opposed to the peasant who is painted), and who indeed makes her own pigment through the cultivation and processing of plants. Her article traces the colonial routes of woad and indigo to elucidate the exploitation of plant and human life that developed through biocolonialism and the plantation system, and that reduced non-Europeans to abstract labour, and plant life to standing resources. Her research, in the course of which the peasant-painter departs from the garden and enters the laboratory, has retrieved an indigenous method of Mesoamerican pigment-making that was 'lost', or perhaps intentionally hidden, in the wake of Spanish colonialism in South America. In the present-day context of rampant privatisation of scientific knowledge and natural resources, she proposes the gesture of sharing this reconstructed indigenous method as a form of commoning.

The special issue concludes with Jennifer Gabrys' 'Sensing Lichens: From Ecological Microcosms to Environmental Subjects', which aligns the garden with the laboratory and, moreover, a laboratory for speculative, more-than-human collaboration. Gabrys offers a reading of the 'Ozone Bioindicator Garden Project', an initiative from the US National Aeronautics and Space Administration (NASA) that studies plants' signs of injury due to air pollution. Drawing from her 'citizen sensing' work, Gabrys focuses on lichens, which resemble a plant and yet complicate classification of organisms and taxonomic orders, and which colonizes rock and soil and stabilizes ground layers along with other vegetal organisms. As a particularly sensitive 'bioindicator' that signals air and soil pollution in more qualitative manners than technical instruments, lichens, in both Gabrys' creative practice and critical contextualisation, open up possibilities for alternative modes of doing environmental politics that take into account the perspective of nonhuman organisms. Here Gabrys' work makes an original contribution to critiques of representational modes of politics that are prevalent to both postcolonial and environmental humanities, above all where the subaltern (also understood as nature) is concerned. Instead, Gabrys' reading of bioindication focuses on the expressive quality of nonhuman life, moving beyond the mere metaphor of plants as silent witnesses to environmental events and the violation of earth and atmosphere by humans. Furthermore, bioindication from the lichen's point of view complicates the premise of Western science insofar as 'meaning' arises through multiple organisms' sense-making operations and demonstrates how 'nature' is not a stable referent but rather closer to a 'multinaturalism' in which organisms might be approached as having perspectives as persons. By turning to gardening practices both at street level and at the limits of the planetary, Gabrys poses the question of how a heightened attentiveness to nonhuman modes of sensing and relationality, as well as more-than-human collaboration, might open up the possibility of more ecological, speculative modes of encounter and world-making.