

Dust of these domains



Bianca Hester
Fieldnotes of textual fragments performed in four locations
Siteworks–Bundanon–2023

1.

Registering: Inside the museum's Laboratory

2.

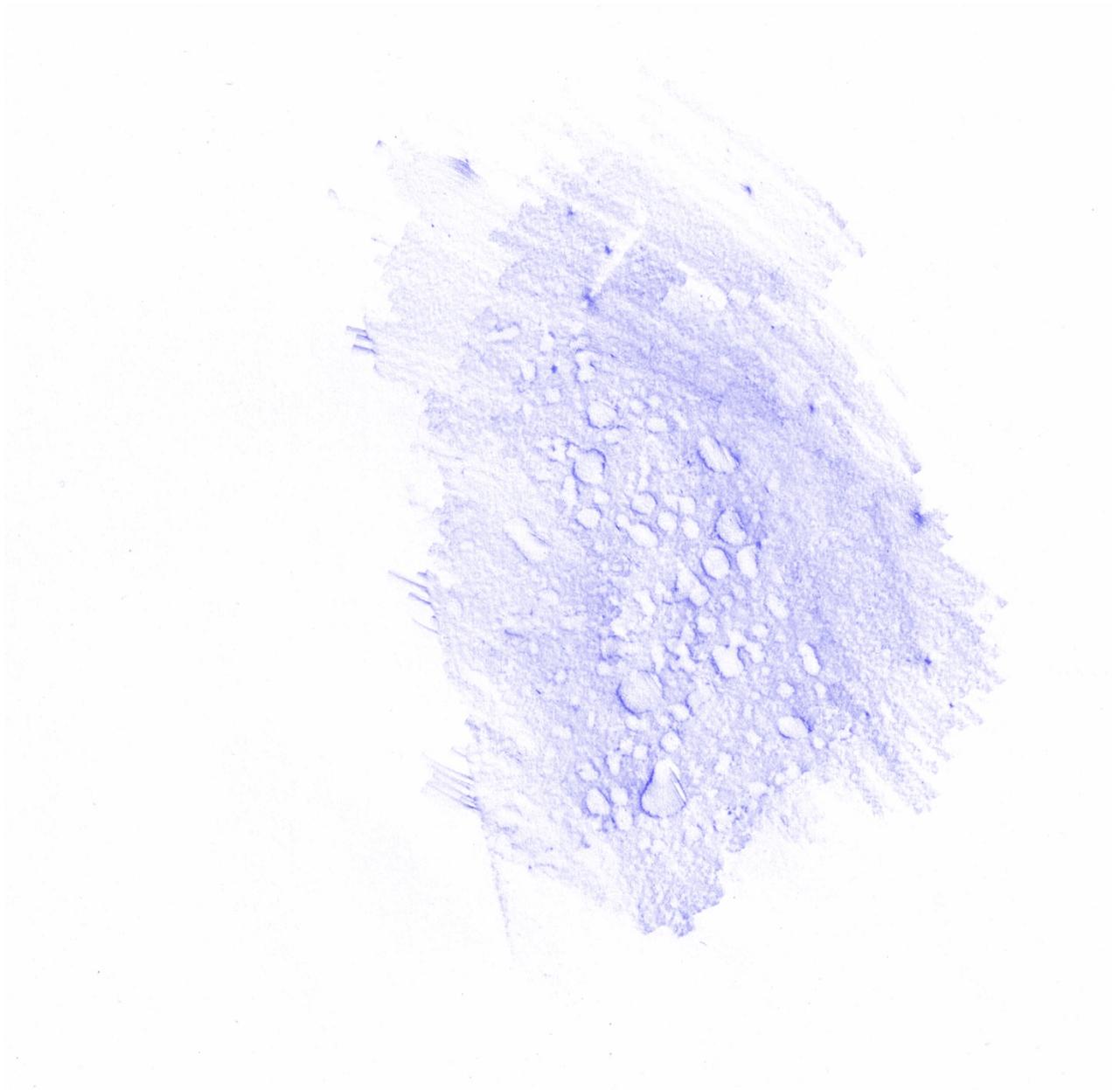
Submerging: At the Jetty on the Shoalhaven River

3.

Surfacing: At the top of the Budawang track, in the Spotted Gum Forest

4.

Airborn: On the museum's roof, overlooking the canopy of the
Eucalyptus Botryoides Forest in the West



1.
Registering
Inside the Laboratorium

From time's depths and dead zones

In a museum is a large room full of cabinets. In these cabinets are rows of archival draws. In several of these draws are glass slides the scale of two fingers. On some of these slides are slices of rock ground down to 30 micrometres thin, adhered with a smear of epoxy glue. On other slides are fragments of matter collected from paleosol – ancient soil buried in the sedimentary record – made from the dust that settled downwards under gravity's command around 252 million years ago, now fixed on glass surfaces. The vision of Earth Scientists is intensified through microscopes and cast deep into time to witness a 'dead-zone' in the paleo-biota, as the material cohering upon these palynological¹ slides 'lacks pollen and plant spores, and incorporates only wood fragments, charcoal, algal thalli and fungal spores.'² These paleoenvironmental residues register relentless cycles of wildfire and flooding, fluxing in and out of the dominant Gondwanan Glossopteris Forests that stood here at the time. This scatter of particles on glass documents the ecosystem collapse that occurred at the Permian–Triassic boundary,³ signalling 'a catastrophic scenario of vegetation die-off and extinction'.⁴ Scientists understand this event – disclosed by the ancient dust – to be a 'global, deep time analogue for modern deforestation and diversity loss.'⁵ The associated extinction of this era reverberates through time, resonating with the precarity of the current moment as we bear witness to the extraordinary forces of climate change and grapple with the visceral futures that are forecast within it, here on the East Coast of Australia.

Some of this dust is collected from core samples extracted from boreholes that puncture the body of sandstone which sits – sedimentary thick – as the Sydney Basin Bioregion. Boreholes have been drilled in countless places across the state, over so many decades. Most of these holes are made by mineral, coal and petroleum industries digging for the materials that continue to make the colony.⁶

The paired practices of prospecting and extraction central to these industries is anchored by – and shaped through – the logic of terra nullius, the

¹ Palynology is the study of dust, from the Greek: "of particles that are strewn." The slides referred to are documented in the journal article listed in footnote #2.

² Vivi Vajda, McLoughlin et al, "End Permian (252 Mya) deforestation, wildfires, and flooding – An ancient biotic crisis with lessons in the present," *Earth and Planetary Science Letters*, 529 (September 2019): 9.

³ Christopher R. Fielding et al, "Age and pattern of the southern high-latitude continental end-Permian extinction constrained by multiproxy analysis," *Nature Communications* 10, no.1 (January 2019): 9.

⁴ Vivi Vajda, McLoughlin et al, "End Permian (252 Mya) deforestation, wildfires, and flooding – An ancient biotic crisis with lessons in the present," *Earth and Planetary Science Letters* 529 (September 2019): 1.

⁵ *Ibid.*, 1.

⁶ For the NSW drilling dataset and the locations of drillholes, see: <https://minview.geoscience.nsw.gov.au>

principal ideology that justified the annexation of the continent in the first place.⁷ The legacy of this fictitious framework and the theft that it enabled is embodied through the present management of its so-called natural resources,⁸ which continue to be unearthed 24 hours a day, from the mosaic of cultural landscapes upon which we stand, right now.

These objects

These objects are cast in bronze and patinaed coal-black. Before being fashioned in the 1200 degree heat of a foundry – which is the temperature that it takes to smelt an alloy of copper and tin – they were hand-moulded from wax that was worked into the crevices of silicone surfaces which were themselves pressed upon fragments of fossils selected from the following sources:

- 1) My backyard in Wollongong, which sits on Permian epoch ground;*
- 2) Plant fossils from the Permian and Triassic geologic eras held in the paleo-botanical archives of the Australia Museum;
- 3) Surfaces of rocks from the cliffs that register the Permian-Triassic boundary and the fourth mass extinction event on Earth;
- 4) Contemporary anthropogenic surfaces at Bundanon as well as surfaces of living botanical forms found in the plant community of the Spotted Gum Forest on the hill in the upper reaches of the Bundanon property.

** Note on our backyard (a)*

When the rains arrived after the 2020 fires, they fell for days on end and initiated sequences of flooding across NSW. We consulted a local plumber to investigate the drainage problem on our block. Water from the rain-shed at the top of the hill seeps relentlessly underground, to re-emerge beneath the house, threatening stability's deceit with its unavoidable swell, due to hydrostatic pressures as it moves in a capillary action – silently – through the soil. After days of digging, I noticed nuggets of shale patterned with black coloured flecks emerge as we worked the ground. I thought nothing of this material at the time. However, after reading scientific papers on the Permian geology of the Illawarra and remembering the presence of Glossopteris Forests which thrived on the swampy bogs of Gondwanaland which stood here between 290-250 million years ago – did my mind turn suddenly to these overlooked rocks, now strewn across the back of the block. I found one beneath the 30-year-old Callistemon tree on the Northern part of the hill and picked it up. Part of it crumbled in my

⁷ For an extended discussion, see Michael Shawn Fletcher, "Bolin Bolin," in *Plants: Past Present, Future* (First Knowledges series), ed. Margo Neal (Port Melbourne: Thames and Hudson, 2022), 60–61.

⁸ For a critical discussion concerning the transformation of cultural landscapes into 'natural resources', see Kathryn Yusoff, "Mine as Paradigm," *e-flux Architecture*, June 2021 and Elizabeth A. Povinelli, *Geontologies: a Requiem to Late Liberalism* (Durham: Duke University Press, 2016).

hand to reveal a scatter of fragments retained within – residues stained dark grey, and brown merging to black – with the faintest of relief patterns visible. On closer inspection, and with assistance from the last rays of winter light as the sun descended behind Djembla/ Mt Kembla, I witnessed the position that a couple of tiny leaves assumed immediately after they were summoned by the ground. In that moment, they would have settled together as leaf litter, shed one season in Gondwanaland. This now disappeared forest was evoked as I witnessed – by chance – this delicate fragment of material one evening in July 2022.

These leaves that make the Illawarra Coal Measures

In 2018, after moving to the Illawarra, it suddenly dawned on me that the entire landscape was underpinned by coal. This happened late one ignorant evening after I had breastfed G to sleep and was scrolling through Google maps. I noticed a large black circle in the Kemira Valley, just over Mt Nebo and not far from my home, a pixelated circle indicating a stockpile of freshly extracted coal appropriated from under the escarpment's sandstone. This is the fossilised forest that compacted over millennia⁹ to make the Illawarra Coal Measures, including the Wongawilli seam being extracted through longwall processes at South32 Dendrobium mine. Reaching deep into temporalities underground, surplus cosmic energy materialised as fossilised sunshine carries forward into the present through a relentless unearthing – inexorably shaping the future.

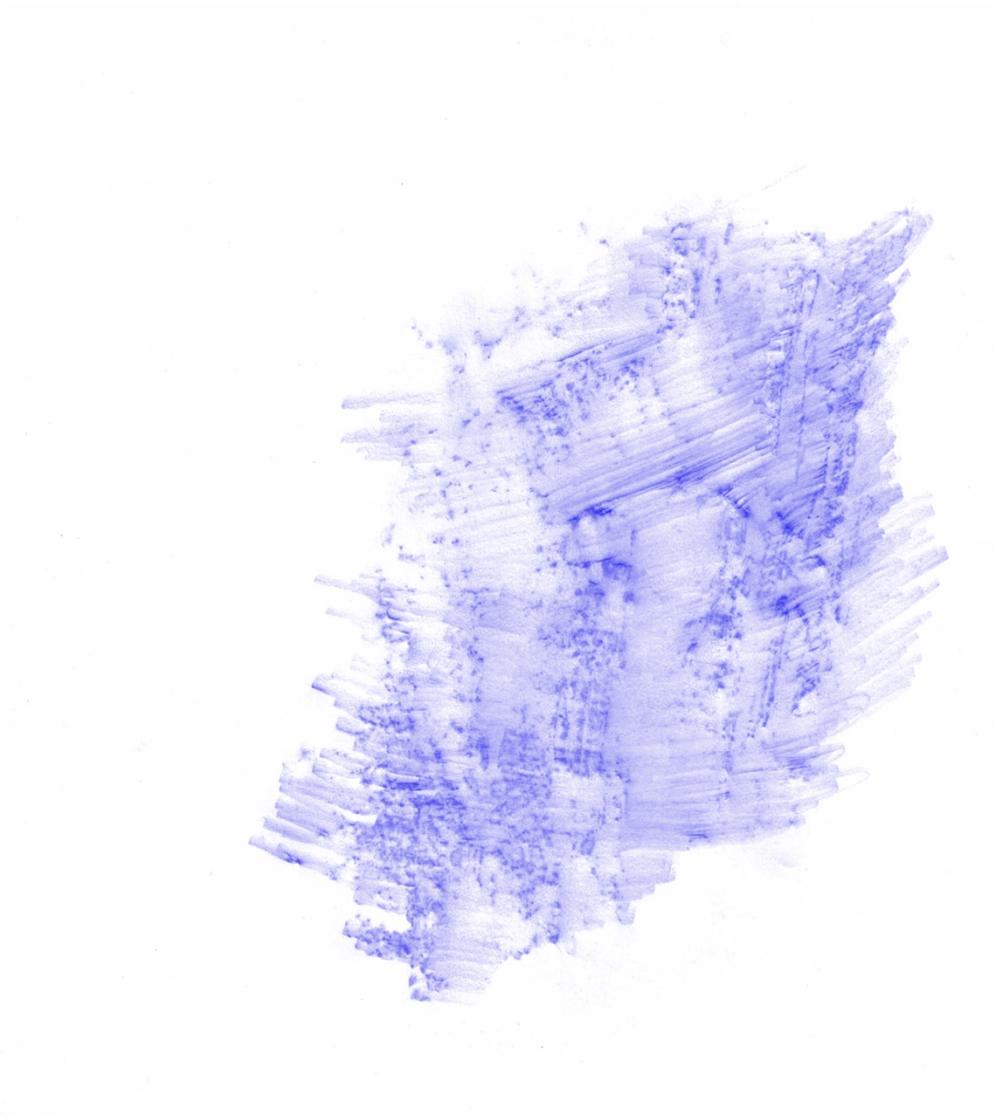
Sun

Think about how the fossils that fuel our accelerated ways of living were—ages ago—once vast swathes of foliage sustained by unrelenting rhythms of sunshine.¹⁰ This is the same (yet inevitably different) sun that will warm our bodies while we co-produce this walking-event today at Bundanon. At 11:15 am, as we move out of the shade of the museum's interior, we will encounter the sun of the Dharawal season of Gadalung Marool¹¹. It will be moving towards its highest altitude, from 55 degrees heading in a Northeast trajectory in the sky, to reach the meridian by eleven minutes past one in the afternoon. It will then descend in a westerly direction, where it's light will diminish behind the forest canopy a while before it sets at seven thirty-five in the evening. The sun will engage this rhythm every single day thereafter until a time impossible to imagine.

⁹ Richard Jones, "Geology of the Illawarra and Southern Highlands." Fossil Australia, n.d., accessed June 2019, The lowest part of the hill <http://fossilsaustralia.com/geology-of-the-illawarra-southern-highlands.html>

¹⁰ Yusoff writes, "Fossil fuels are dark and patient...they are pockets of sunshine that have a solar line of descent." Yusoff, Kathryn. 2015. 'Queer Coal: Genealogies in/of the Blood.' *PhiloSOPHIA* 5, no. 2 (Summer): 203–29, p.203

¹¹ Francis Bodkin, Gawaian Bodkin Andrews, "D'harawal Perpetual Calander," D'harawal Dreaming Stories, accessed 21 January 2023, <https://dharawalstories.files.wordpress.com/2015/09/dharawal-calendar.pdf>



2.

Submerging

At the jetty on the Shoalhaven River

At the lowest part of the land

This part of the terrain is always in receipt of waters as they move downwards—relentlessly—under the influence of the Earth’s non-negotiable contract with gravity. They eventually move out towards the ocean before returning through the water cycle upwards into the atmosphere – then downwards again to encounter and dissolve myriad geologies. This process is evident in the exposed stratigraphy visible at the end of Riverside Road, on the last steep descent into the car park. Over millennia, the waters that make the Shoalhaven River have eroded this valley into its current shape. In the cross section adjacent to the road, dropstones embedded in the sandstone are visible. These stone fragments speak to a time when this landscape was covered by ocean¹² situated at higher southern latitudes and in a much colder climate associated with ‘widespread Gondwanan glaciation that began in the Carboniferous and persisted into the Early Permian.’¹³ Dropstones were released by melting icebergs which deposited ‘sand, pebbles and small stones onto the sea bed’¹⁴ – ‘the resulting sandstone was elevated 600 metres approximately 100 million years ago.’¹⁵

Excess energies

I can’t stop thinking about water: about how it’s always moving between states, like a completely magical material shapeshifting from solid to liquid to gas. It’s in one or more of these formations somewhere on the planet right now. Together these manifold states, and in the processes of transition between them, constitute the hydrosphere.

Aquifer, blood, bog, cloud, dam, desalination, dissolve, drain, evaporation, flood, fog, glacier, groundwater, hail, ice, mist, mucous, ocean, osmosis, permafrost, pollution, porous, precipitation, rain, ripple, river, run-off, saturated, salinity, saliva, sea, septic, semen, sleet, solvent, stream, stormwater, swamp, tears, trickle, turbidity, urine, vapour, waves, weather, well, wetland.

¹² “Bundanon Living Landscape: Fact Sheet 3 Geophysical.” (Bundanon: Landcare Australia, n.d): 10. Accessed October 22, 2022. <https://www.bundanon.com.au/wp-content/uploads/2021/03/3-Geophysical.pdf>

¹³ G.R. Shi and Stephen McLoughlin. *Permian Stratigraphy, Sedimentology and Paleontology of the Southern Sydney Basin, Eastern Australia: A field excursion guide* (Burwood: Deakin University, School of Aquatic Sciences and Resources Management, 1997): 35.

¹⁴ “Bundanon Living Landscape: Fact Sheet 3 Geophysical.” (Bundanon: Landcare Australia, n.d): 10. Accessed October 22, 2022. <https://www.bundanon.com.au/wp-content/uploads/2021/03/3-Geophysical.pdf>

¹⁵ *Ibid.* p. 10

I've been learning more about water from the environmental documentaries that I consume – obsessively – and usually late at night through the tiny screen of an iPhone – do you do this too? It's a terrible habit – right? – and does nothing for the background drone of anxiety that ghosts our contemporary existence. I've learned how, in this climate crisis, there is much more energy within the Earth's systems attributed to the increase in heat, which in turn intensifies the proportion of water vapour within the atmosphere. This forms a factor in the destabilisation of weather systems leading to the extreme events that have proceeded one another in perpetual succession since 2020. But of course, the rapidly unfurling 'catastrophe' cascading within our media feeds, and sometimes literally at our doorstep when our neighbourhood becomes the hotspot – is nothing new to First Nations communities subject to the violence of colonial capitalism. Ecocide has always been a material–visceral–embodied reality. Tony Birch discusses this in relationship to the expropriation of place central to the settler colonial project, which he writes has involved 'the destruction of land, water systems and the delicate ecological balance of Country ... from the moment of the permanent arrival of the British in 1770.'¹⁶

Gone, is the creek's pebbly beach

I picked G up early from day-care when the rain wouldn't stop falling this time last year. We drove home over the bridge that spans the Byarong Creek and stopped for a few minutes to witness an awesome volume of stormwater cascading forcefully from the pipes that collect the suburb's run off and direct it towards the creek. It raged in torrents so powerful that entire trees had been dragged from the river's banks and were jamming up against the railing of the bridge, causing the waters to rise rapidly. I videoed a ten second clip and posted it on Instagram, not knowing at the time that entire homes were being inundated and some were being washed away in parts of Western and Northwestern Sydney, the same time as I was aestheticising this event. A few days later, after the weather had settled and the waters subsided, we rode along the creek to see the damage that was done. A few meters downstream from the bridge, at one of the creek's bends, what we had come to know as 'pebbly beach' – which was an embankment that had accumulated over the years where we would stop to hang out and skim stones and feel the winter sun – had been completely washed downstream, its variously scaled pebbles and rocks redistributed into oblivion. G cried out in shock that it was gone. I had not considered it possible that this small, beloved place which provided the context for connection with my daughter over her short life would have disappeared in the interval of a rainstorm one week in late summer.

¹⁶ Tony Birch, "It's Been, It's Here: Tony Birch on Climate Change's Past and Present." The Wheeler Centre. 24 March 2015.

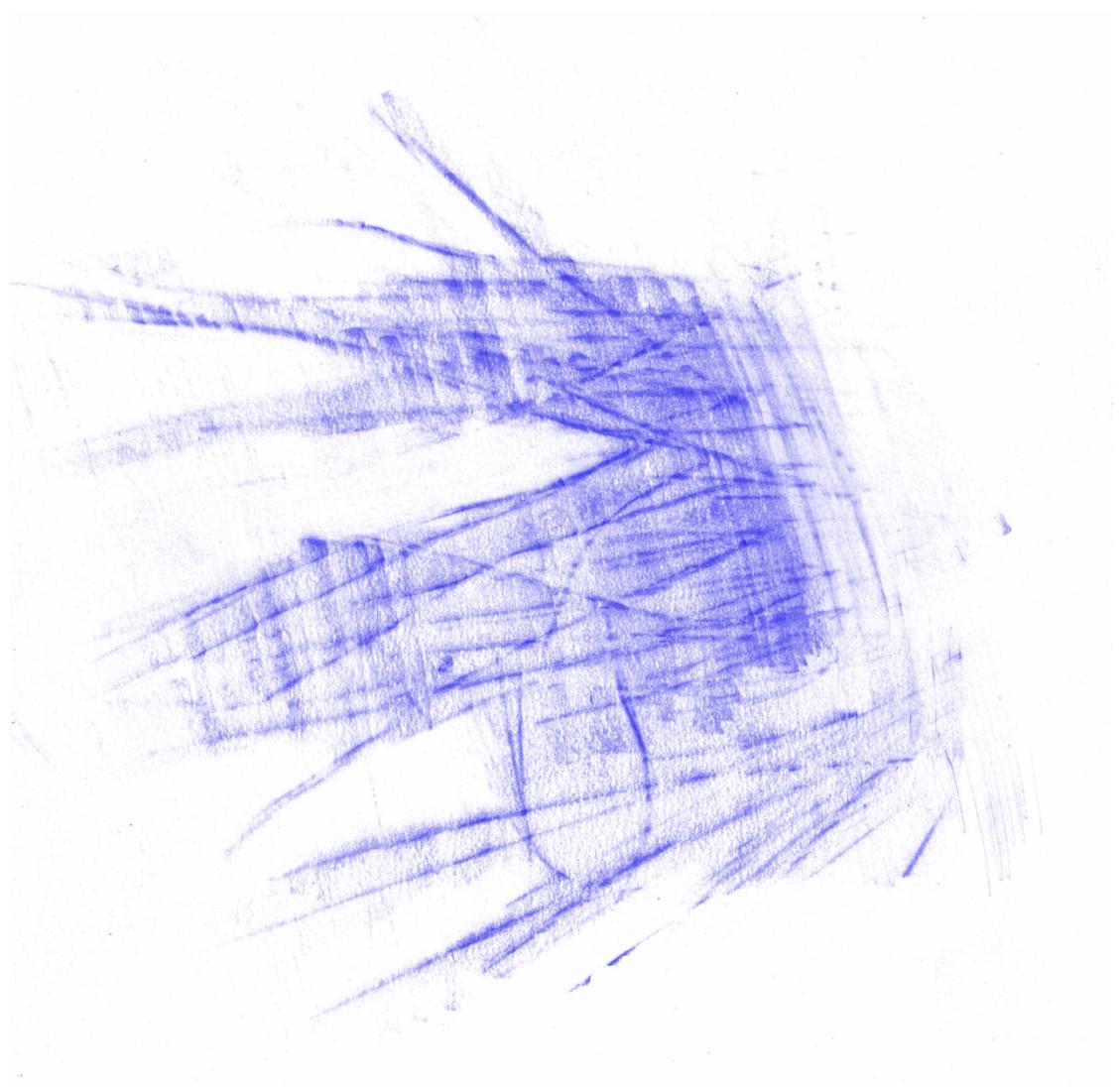
Perpetual motions

Ground is in a state of continuous motion as it is reformulated in co-productive processes. This occurs within a specific context of relationships including hydrodynamic flows and forces, mineral profiles, ecologies of microbial and fungal life, the anthropogenic transformations occurring at and below the surface, the subduction of tectonic plates even further below, and at a larger scale the perpetual movement of the Earth as it turns on its axis while travelling an elliptical trajectory around the sun into pasts and futures unimaginable

Note on my backyard (b)

The day the plumber visited our block after the big rain, when we unknowingly unearthed *Glossopteris* fossils dormant just beneath the surface, we learned about how he had played in the vicinity of the Dharawal Timberey family birthing tree that existed at the intersection of three dreaming tracks and became the namesake of the suburb of present-day Figtree. This Moreton Bay Fig Tree (*Ficus Macrophylla*) lived for several generations before invasion. Weathering the effects of colonization, it became a remnant of the temperate rainforests common to the area which thrived at the foothills of Djembla/Mt Kembla. It perished in 1996 after enduring decades of damage by floods, fires, people seeking shelter during the Depression in the 30's and roadworks in the 1970's. A cutting was made in 1985 which was replanted in 1997.¹⁷ You probably drove past it on the Princess Hwy out of Wollongong towards Nowra. You might have missed it though because it's hidden between the Figtree pub, and a shabby motel and a chicken shop called Chikos. The plumber told us his perspective on this tree while attempting to placate me about the fountain of water pissing out of a burst main accidentally punctured by a crowbar. "Don't stress, it's only water!" he exclaimed, troubled by my heightened anxiety as I watched hundreds of litres cascade down the gutter towards the stormwater that funneled into Byarong Creek. I couldn't help but ignore his advice knowing about water's unrelenting capacity to make and remake rock, shift hills under hydrostatic pressures, and inundate coastlines. Water can dissolve anything, given the right amount of time. It was water that gradually unraveled the once vertically oriented transantarctic mountains, transporting loosened silica and zircon particles and depositing them over millennia to become the sandstone terrains that we were standing on right now. Water has made this place and will make it again and again.

¹⁷ Thanks to Tess Allas who told me how to find it, and who worked with Uncle Vic Chapman on the design of the "Yaroma Mosaic" which commemorates the location of the original tree, for the rejuvenation project in 1997.



2.

Surfacing

At the top of the Budawang track, in the Spotted Gum Forest

Right here

On the top of this hill live Burrawang¹⁸/Australian Cycad/Macrozamia communis. These plants are descendants of ancient species whose material remains are present in the fossil record of the Lower Permian period, around 280 million years ago.¹⁹ They are used by Dharawal custodians as a food source after correct processing.

Down the hill in an easterly direction

In an easterly direction down the river, towards the end of this property, stands the second last Polai²⁰/Red Cedar/Toona Ciliata alive at Bundanon. Red Cedar trees once dominated the rainforest ecologies of the Shoalhaven and Illawarra but were extracted extensively between 1810 and the 1850s by ‘cedar getters’ for building ships, buildings, and furniture – becoming one of the most valuable exports of the colony.²¹ The commercialisation and consumption of this tree-turned-resource contributed to a radical transformation of the landscapes of this region. Polai/Red Cedar are used as medicine by Dharawal women.²²

Endangerment

From the temporal limitations of our current lived perspectives, we are unable to clearly see the shape of the current extinction event from our inevitably partial position deep within it. But we know from the data since 1970, this continent experienced the biggest surge in biodiversity loss because care for Country by its custodians was violently interrupted. Australia now has the second largest rate of species endangerment globally. Scientists know that the current rate of extinction is estimated to be approximately 1,000 times higher than the normal background extinction rate²³ common to planetary evolution, and up to 100 times higher than the previous five mass extinction events in

¹⁸ Steven Varga, “Macrozamia Communis – Burrawang.” Information about Australia’s native flora: Growing Native Plants, Australian National Botanical Gardens. Accessed February 2, 2023. <https://www.anbg.gov.au/gnp/interns-2011/macrozamia-communis.html>

¹⁹ Norman C. Ellstrand et al, “Genetic structure of the Australian Cycad, Macrozamia Communis (Zamiaceae),” American Journal of Botany 77, No. 5 (May 1990): 677.

²⁰ Terry Ranckmore, *Bush Medicine Plants of the Illawarra*, (Wollongong: Illawarra Aboriginal Corporation, 2013): 48.

²¹ “Red Cedar.” Kiama Library, Kiama Municipal Council. Accessed January 18, 2023. <https://library.kiama.nsw.gov.au/History/Explore-Kiamas-Past/Local-history-stories/Red-cedar#:~:text=Cedar%20was%20seen%20as%20the,to%20Sydney%2C%20from%20this%20area>

²² Terry Ranckmore, *Bush Medicine Plants of the Illawarra*, (Wollongong: Illawarra Aboriginal Corporation, 2013): 48.

²³ “Episode twelve: Six extinctions in six minutes,” Shelf Life, American Museum of Natural History, accessed 25 October 2022, <https://www.amnh.org/shelf-life/six-extinctions>

Earth's history.²⁴ Given that extinction is a typical part of the process of Earth's evolutionary cycles, it is the massively increased rate that raises alarm.

Specific to this location, extinct is Leafy Peppergrass and endangered is Bynoe's wattle, Spider Orchid, Moss, Sand Spurge, Illawarra Socketwood, Australian Salt Grass, Tangled Bedstraw, Pretty Beard Orchid, Delicate Cress, Wallaby Grass, Jervis Bay Leek Orchid, Illawarra Greenhood, Coast Groundsel, Round leafed Wiltonia, Bomaderry Zieria and Nowra Heath Myrtle.

In the kitchen, the evening of January 26, 2022

G asks: "What do you mean, that this land was stolen?"

I respond: "It was taken away. The British arrived uninvited, and took this land from Dharawal custodians".

I scrambled for an age-appropriate analogy: "Imagine going next door and telling our neighbours that we were moving in, and that this was no longer their house, and we then forced them out of the place they had been living and stayed there permanently".

G reflects and asks: "So...before the white people arrived, could people drink water straight out of the rivers?"

I reply: "Yep, it would have been possible".

In the bathroom, while brushing teeth, October 2022

G asks: "Mummy, when will the dinosaurs come back again?"

I answer: "Ummm, they won't ever come back, because they're extinct. They exist as fossils buried in the ground now, and sometimes in museums. Do you remember how we learned about extinction at the zoo? About how when the last of a species dies, it can't return because there are no creatures left to reproduce themselves?"

G says: "Oh yeah, first they become endangered, then they might become extinct."

A few seconds later G asks: "Mummy, when will humans become extinct? When will the last person on Earth die?"

I answer: "...that's a question I cannot answer. It will eventually happen, yeah...but hopefully a long, long time from now."

In the kitchen, at breakfast time, November 2022

G asks: "Why are we here?"

²⁴"Holocene Extinction," Wikipedia, accessed 18 June 2018, https://en.wikipedia.org/wiki/Holocene_extinction#:~:text=The%20contemporary%20rate%20of%20extinction,any%20of%20the%20previous%20mass)

I query: “Why are we here, in Wollongong, on Dharawal land?”

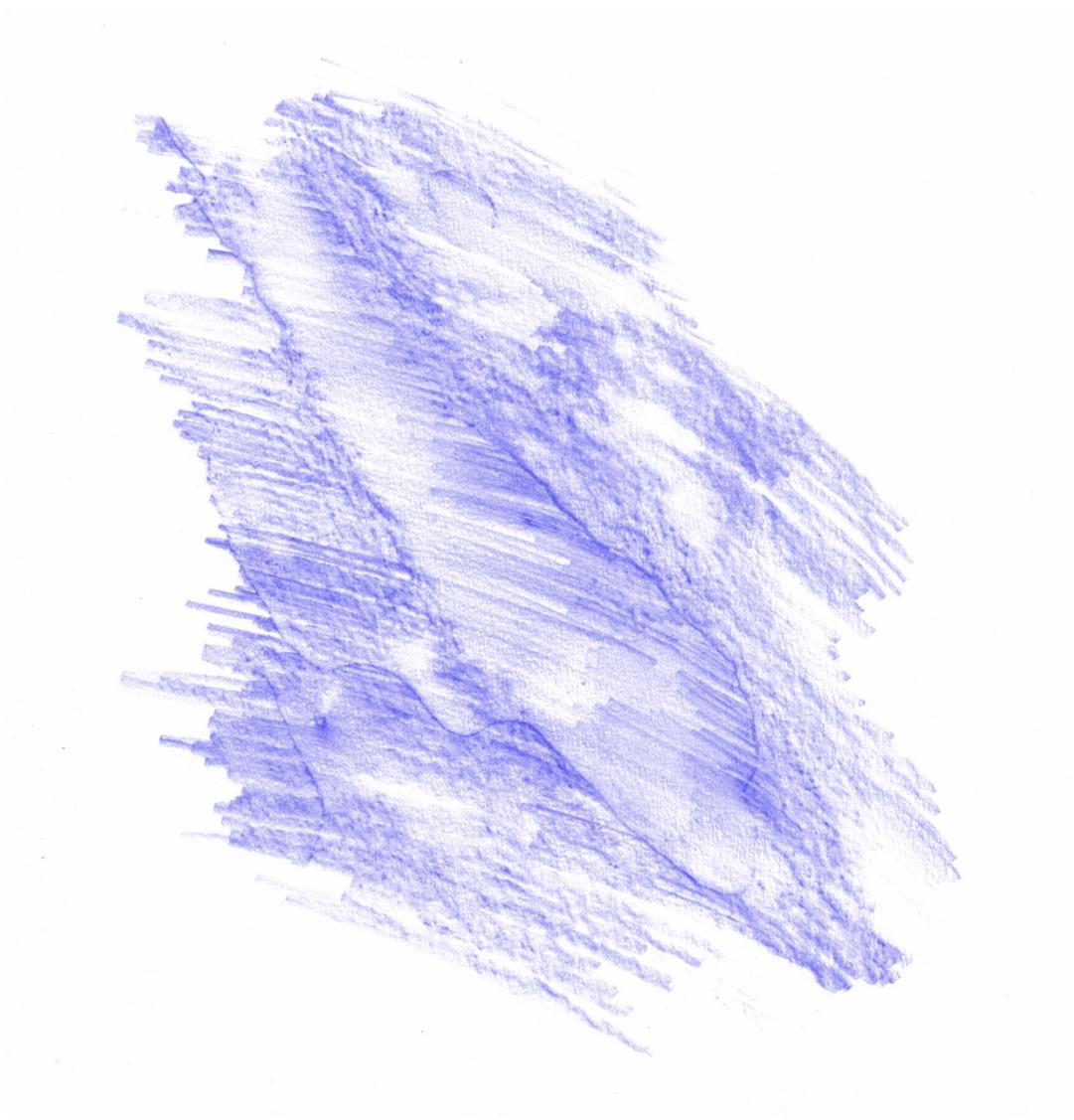
G says: “No - why are we here, on Earth?”

Down the hill where the ground is level

The surface of the bluestone that makes the forecourt of the Boyd Education Centre, is marked by a billion tiny holes dispersed across the grey expanse of the levelled ground. The basalt from which bluestone is derived was once lava which emerged through Earth’s volcanic bodies, transporting magma from the mantle to the surface. The tiny holes present in basalt register the encounter between lava and water, whereby the extreme difference in temperature causes steam, transforming the surface of the magma. This process is registered as solidified air bubbles captured within the rock.

A world fully accessible by no living being

In this moment only certain things become visible, while others remain obscured – buried, submerged, eroded – or disappeared entirely. The many worlds evident in the material residues that persist through time and appear at the surface, brings us into what Kathryn Yusoff describes as a ‘confrontation with the lithic processes of the earth...and the (geo)powers that organise beyond life and without interest in its sense of progress or purposefulness’.¹



3.

Airborn

On the museum's roof, overlooking the canopy of the Eucalyptus Botryoides
Forest in the west

More Concrete

Due to increasing urbanisation involving clearing and developing land worldwide, the use of concrete has 'increased more than thirtyfold since 1950 and almost fourfold since 1990.'²⁵ Concrete is deeply implicated in the carbon economy and climate change, with cement being a core material in its production. Emissions of CO₂ from concrete production comprise two orders, involving the chemical reactions of the process (constituting 'process emissions') and the combustion of fossil fuels required to heat concrete's raw materials to over 1000 degrees (constituting 'energy emissions'). Combined, the 'total emissions from the cement industry...contribute as much as 8% of global CO₂ emissions.'²⁶

Concrete constitutes one of urbanisation's primary materials and is employed in the process of sealing the ground, becoming a barrier that renders it impenetrable by water. Consequently, less water is absorbed into the soil structure, and stormwater intensifies. As stormwater flows off urbanised surfaces, it gathers residues including microparticles of heavy metals derived from petrochemicals, tyres, brakes, engines and exhaust fumes that periodically accumulate on concrete's impervious surfaces. Assembled in and by water, these particles move ever downwards, flushing directly into catchments, contributing to 80 percent of the pollution present in urban waterways. Constituting the lowest reaches of the terrain, waterways assume a position in which they have no choice but to receive the effluents of urbanisation inaugurated by concrete.

The relationship between waterways and the urban environs of the terraformed settler-colonial landscapes of Australia, embody an uneven distribution of burdens. The domains of cultural production depend upon a meshwork of places and their extracted materialities – think the iron ore from the Pilbara and the coal from Appin, think the steel smelter at Port Kembla, think the lithium mine in Greenbushes Western Australia, think the sand dredging downstream on the Shoalhaven River). These sites, which underpin, energise and fortify the rarefied zones in which we dwell are – argues eco-feminist Val Plumwood – 'Shadow Places'²⁷... 'places that are unevenly

²⁵ Lucy Rodgers, "Climate Change: The Massive CO₂ Emitter You May Not Know About," Science and Environment, BBC News, 17 December 2018. <https://www.bbc.com/news/science-environment-46455844>, para. 16

²⁶ Robbie Andrew, "Global CO₂ Emissions from Cement Production," Earth System Science Data 10 (2018): 195–217, p.195

²⁷ Val Plumwood, "Shadow Places and the Politics of Dwelling," Australian Humanities Review, 44 (March 2008) 139-150: 140.

impacted by [capitalism's] domination.²⁸ They not only 'provide our material and ecological support'²⁹, she writes, but they are situated beyond the realms of our awareness and its responsibilities³⁰ (even if they are right under our noses).

In the context in which we find ourselves, the water body of the Shoalhaven River and its interconnected catchments might be the localised Shadow Places that silently endure the toxicity that is the perpetual, long term, deep time run-off metaphorically downstream from the structures of settler-colonial possession across the land, in part materialised in concrete.

Smoke

We woke, and the smoke was here. We woke because of the smoke. This smoke: a material-temporal convergence registering the relentless process of transformation of a countless billion trees burning for weeks on end, while planetary loads of carbon sequestered inside their ligneous bodies were released – volatile and circulating thick in the atmosphere. This smoke, a particulate admixture of botanical–animal bodies metabolised by the fires raging all summer long, directly demonstrating what Blanche Verlie argues is 'the limitation of our very breath...as the toxic embodiment of climate change.'³¹ You will probably remember how the fires consumed vast swathes of sclerophyll and rainforest in places that had never encountered fire before. You probably also heard about how the ash and dust from the blaze travelled on wind currents as far as Aotearoa, tinting glaciers a yellowish-brown in the South Island.³²

This smoke: through the windows, in the house, in the bedroom, amongst the sheets, in your hair, in our noses, inhabiting our lungs. This smoke shrouding both the sun and the moon, sometimes at once. This smoke so dense that we could stare square at the sun – an orange stranger filtered thick through perpetual dread, for as long as we liked. This smoke featuring with 'no filter' on a cascade of Instagram pictures churning out of Sydney. This smoke dematerialising the neighbour's houses on every street and settling onto parked cars. The particles of this smoke overriding the familiar accumulation of coal dust on our windowsills, from the Wongawilli seam extracted day-and-night by the South32 Dendrobium mine situated beyond Mount Nebo in the Kemira Valley in the Illawarra.

The smell–taste of this smoke – inescapable – as it was delivered to the door upon furious pyro–winds in advance of the inferno, raging just over the

²⁸ Emily Potter et al, "A manifesto for shadow places: Re-imagining and co-producing connections for justice in an era of climate change", *Environment and Planning E: Nature and Space* 5:1 (2020): 272-292, 273

²⁹ Val Plumwood, "Shadow Places and the Politics of Dwelling," *Australian Humanities Review*, 44 (March 2008) 139-150: 140.

³⁰ *Ibid.*

³¹ Blanche Verlie, "Feeling Climate (in)justice," Postdoctoral Fellowship Lecture, Sydney Environment Institute, University of Sydney, September 14, 2022.

³² Elanor Ainge Roy, "New Zealand glaciers turn brown from Australian bushfires, smoke, ash and dust: Snow-capped peaks and glaciers discoloured as former PM says ash could accelerate glacial melting," *The Guardian*, January 2, 2020.

edge of the escarpment. This smoke announcing a damaged future – which is no longer situated on a distant temporal horizon – but is instead materialising in the present as it envelops us within an ashen shadow of ‘our’ own making. This smoke made us cry on the 22nd day of its seemingly endless visitation.

The fire was here too. Can you see it registered in these trees? M says that it crept over the hill just there in the southwest. Because of cultural burning led by the Mudjingaalbaraga firestick team which is carried out each Autumn and Winter (and before invasion, for thousands of generations), the fire didn’t catch on as fiercely and so was more easily appeased.³³ S speculates that if the case was otherwise, and the fires had taken hold, they would have probably entered the Illawarra, and consumed it.

More than human futures

We stood on the balcony at the end of this building and looked westward towards that forest canopy. We felt the force of our friendship and what this has generated over the years. When together we feel the visceral promise of potential for thinking, living, practicing otherwise. This realisation occurred alongside the brilliance of the Eucalyptus Botryoides canopy, shimmering in post-noon light. The shimmer embodied the optical performance of encounter between photons that have travelled 149.6 million kilometres, with the billion countless living cells of leaves that receive the gift of relentless radiation, drawing this cosmic excess downwards through ‘solar lines of descent’³⁴, and on the way transforming it into energy accessible by ‘all life on Earth.’³⁵

Thin blue

This dearest of blue skies is not a permanent reality. There was a time on earth when the sky was orange – before the cyanobacteria collectively oxygenated the atmosphere over billions of years. Blue is the residue. Everything we do occurs within this slither of blue – between this ground and that extremely thin veneer that we’ve inherited from the labour of life forms that far precede us, beyond which lies a vacuum of the blackest space that stretches on forever.

³³ For information on the difference between Country that had Cultural Fire applied in 2018, with Country destroyed by wildfire in the Shoalhaven region in 2020, see the firesticks website <https://www.firesticks.org.au/dharrawal-yuin-ngurra/>

³⁴ Kathryn Yusoff, “Queer Coal: Genealogies in/of the Blood,” *PhiloSOPHIA* 5, no. 2 (Summer 2015): 203.

³⁵ Michael Shawn Fletcher, “Bolin Bolin,” in *Plants: Past Present, Future (First Knowledges series)*, ed. Margo Neal (Port Melbourne: Thames and Hudson, 2022), 50.