SANDSTONE

Bianca Hester

LOST ROCKS

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When you were born

It seemed darker outside than it actually was for the time of day and season. The window's permanent blind obscured the morning light such that the interior into which you emerged was cast in dim grey-blue. The 'hottest day on earth,' at 47.4° had just passed through the state. We couldn't feel the reality of this heat because of the unfluctuating interior condition that absorbed us the moment we stepped into the building through automatic doors. Layers away, the sandstone exterior would have been exposed to the heatwave. As the temperature advanced through the city, your arrival orchestrated a sweltering cascade of hormones which gripped my insides, tweaking the mammalian capacities of this body and demonstrating the deep temporalities of a multitude of others ingrained within it. Millions of years of evolution buried deep within the double helix of my body's biologic fabric were on display during those few raucous hours. Rock enveloped in reptile embedded in mammal. Moan.

This human-animal is haunted by dissolved geologies, enduring in the structure of bones and the minerals of bloodstreams. The carbon of which we are composed is the common element shared between flesh and pluriverse. This composes part of what Kathryn Yusoff calls our

'geologic inheritance'.[1] Our brief lives – inside and out – are predicated upon so many lives and deaths and calcifications: *of so many bodies...*

... human(animal)/inhuman all...

Think about how we register the deep reptilian past.

Our ears awaited your first sounds as you audibly conveyed the process of encounter with a strangely oxygenated, spacious, gravity-heavy world beyond my body. Your lungs recalibrated and opened. Yes, you are alive! These ears – all of them – are formed through the presence of the EDA gene inherited from reptilian ancestors. The three bones of the middle ear assist the amplification of sound. I learned about this in the stone-cold blue-stone bowels of the Museum of Victoria 6 years ago[2] in the icy middle of July, when one of the palaeontologists explained how the second of the three bones began to recede from the jaw, back into the head of ancient reptiles around 200 million years ago. Moan again.

'*It sounded like a haunted house*,' she said, '*hearing your groans resonate through*' – the plasterboard /concrete / service pipes / linoleum / air filtration systems / sandstone embellishments – taking over the corridors and moving through the waiting-room. '*It was fucking scary and kind of funny at the same time.*'

Stories

This is a story about how one body becomes two, but really, it's about how bodies of all kinds are made and remade in perpetual processes of production, as far back and forward as is (im)possible to imagine.

Pool

In the early summer of 2017, I resolved to visit the McIver's women's rock pool in Coogee, on Gadigal and Bidjigal land, as often as possible. Since moving to Sydney in 2013 I had intended to enjoy what living on the east coast had to offer, plentiful in its array of rockpools that are cut and cast between sandstone rock-shelves and ocean. But I'd never really committed myself to engaging in these pools due to a combination of endless traffic congestion in the Eastern suburbs and the general pressures of working in a city like Sydney. These realities always seemed to get lodged between me and those glimmering bodies of water. But really, these ocean pools were never my culture. Moving to Sydney from Melbourne – a place hewn from basaltic bluestone – meant that I was familiar with enduring a city that absorbed solar energy by day and radiated it back to us uncomfortably all night. I was used to sweating it out. Going swimming in a Melbourne summertime was a big effort and

involved either getting out of the CBD entirely or having a desperate dip at one of the few bayside beaches worth the travel on an evening when it had been 40° or more.

The first time an ocean pool even crossed my field of vision and entered into my consciousness as a possibility was in my first year at art school. A striking image of the Bronte pool, gleaming bright blue and shimmering in the morning light was pinned to the back wall of the office of the Head of the Sculpture department at RMIT. It advertised an exhibition of Australian artists in Berlin in the 80s and exoticised something of Australian culture to European eyes in a way I hadn't encountered before. The department in which the poster hung was in the basement of a bluestone building in Melbourne's CBD, on Wurundjeri lands of the Kulin nation, which remained cool and damp throughout the year. It was 1995, I was 19 and had never visited Sydney. The poster ignited my curiosity about how the space of the pool was constructed amidst the rock and on reflection was the catalyst that led me to travel to NSW at the end of semester on an overnight V-line. This marked the first of many journeys that eventually brought me to live in the Sydney Basin for good.
But the summer that I started swimming regularly in one of these pools, I had a very particular motivation, making my visits somewhat more

instrumental than recreational. I was pregnant with G and towards the end of the third trimester she had settled into breech position and wouldn't move into the cephalic orientation required for vaginal delivery. I spent the last month of pregnancy obsessed with assisting her reorientation. Profoundly anxious at the thought of requiring a caesarean section – this enduring deep-cellular worry most likely counteracted my best efforts. The procedure was looming as the days of gestation passed rapidly. Then towards the middle of December, after further research in helping babies to 'spin', I realised that swimming might be my last hope. Rocking back and forth through the water is supposed to encourage the baby – within its own gestational waters – to flip. I'd just started maternity leave and for what seemed like the first time in my adult life, I had a bit more time to go swimming.

I swam mostly every day at McIver's women-only rock pool. I'd been taken there once before by a friend who introduced me to McIver's as a matter of necessity, as a restorative site to be visited as often as possible. This pool is the sole continuous women-only site in Australia, having been granted such status in 1995 after being exempt from the Anti-Discrimination act of 1977. Informally frequented by colonial women for the purposes of bathing since the 1830s, it was formally recognised

in 1876 by the Randwick City Council as a women's facility. This is the official date, but from stories I've encountered while living here, this site was used by Gadigal and Bidjigal women for bathing and fishing for thousands more [3]. Its orientation to the cliff makes it inherently secluded which allows for bodily freedoms that only a women-only space can afford. Bodies of all dimensions and demographics embody this possibility at the pool's rocky edges as the Hawkesbury sandstone, along with the anthropogenic infrastructural interventions evident at the vertical rock face, is brought into relationship with the surging Pacific Ocean beyond. This is performed through roughly cast concrete walls interspersed with locally occurring sandstone boundaries that enclose vigorous pockets of ocean. There are about 100 of these pools along the east coast, each customised in response to the given contours of the specific rock-shelves into which they've been grafted. The pools enable bathers to be absorbed and almost directly encounter the water's energetic surge while remaining safe from potential obliteration. They provide a space of encounter between bodies of various scales: from sparkling particles of silica compressed as sandstone to microbes feeding on effluent leaching into the stormwater drains from a 100 year old leaky sewage system, to the planetary scaled breadth of the ocean beyond, which has been warming at a rate of 0.13° per decade over the last 100 years[4]. A terrestrial

load of troubles surging beneath the surface might be forgotten at this scene as the sheer beauty of the glimmering light flashing off the multitude of non human bodies combines with the joy of immersion activating momentary delirium.

One morning swimming at McIver's pool, the tide was shifting, and substantial waves rolled over the edge of the outer wall and into the space of the pool. I sat briefly atop of one of the sandstone sections, facing cliff-wise as one of the waves entered with a steady surge. The force of the water was commanding and – not being much of a swimmer – it caught me and dragged my body along the gritty surface leaving a bloody scrape, and a scar that persists as I write, to my upper right thigh. In the banal event of flesh meeting sandstone's gritty surface, I was brought into brief contact with powerful forces ingrained in this rock. This sharp little particle connects with a vast braid of material events, lodged deep in time. This particle was one of many billions of silica grains which cohere together as Hawkesbury sandstone. This sandstone is the dominant lithography of the Sydney Basin, which is bounded by the Lachlan Fold Belt in the West, the New England Fold Belt in the North, Durras Lake near Bateman's Bay in the South, the brink of the Continental Shelf in the east, and submerged beneath the same ocean within which I was immersed that morning.

Shimmer

Shimmer is an idea based upon visual phenomena developed by the late Deborah Bird Rose. Organised through an understanding of the Yolngu term *bir'yun*, it translates as brilliance or shimmering [5], demonstrated in examples of light gleaming upon water or sandstone, which it does regularly in this part of the world. It's a concept that occurs across Aboriginal Australia, which infuses and connects art, music and ritual. It is also descriptive of ephemeral events such as pulsations common to the waxing and waning of the moon and the rising and falling of tides and seasons.

Shimmering activates a heightened optical experience, which becomes relational in that it conveys life's aesthetic power to affect and transform the beholder in an encounter with what shimmers. It demonstrates entanglement between all kinds of bodies, species and worlds as they mesh. It emphasises interconnection. For example, Bird Rose develops an account of the centrality of the flying fox to the flourishing of forests through processes of propagation related to their digestion and dispersal of seeds, which is contingent upon their attraction to the family of flowering plants brought on through shimmer's affective power.

Because of a profound relatedness between manifold forms of life, Bird Rose proposes that shimmer's aesthetic power is to provoke an ethic of radical care by the human-animal towards the more-than-human; which is what predates, subtends, enables and sustains humanity. This ethic of care asks us to think, as Karen Barad provokes, 'with them to face our ethical obligations to them, for they are not merely tools for our use but real living beings' [6] and concerns not only the present moment but to times that stretch long before us, and beyond to those (nonhuman) unborn.

Splitting

In the earliest days of formation, the Earth was split into two bodies. Scientists have analysed data from NASA's Lunar Prospector Spacecraft, which supports the theory that the moon was once a part of the Earth. After the development of Earth's iron core about 30 to 50 million years after the big bang – a planet the size of Mars called Theia collided with the Earth at an oblique angle, shattering its body. Debris was strewn into the surrounding space before gravity's slow labour aggregated the fragments into the moon as we currently know it. The moon now shares similarities in mineral composition to that of Earth.

'*In a few hours, you're going to split into two.*'

She stated this as a fact. The midwife made this declaration as she inspected the bloodied amniotic fluid that had accumulated on the surface of a maxi pad that I'd been wearing since 5:30pm. My waters were breaking and there was absolutely no turning back from what was to proceed.
The process of splitting had commenced.

The implied violence of the statement alarmed me. I hadn't previously thought of this as involving 'splitting'. Logs and rocks get split, by metallic edges of axes and chisels. It takes intense effort and energy to divide something seemingly singular into multiple parts. If done by hand, the labour required is readily registered as pain in muscles as the impact of the tool used to split is driven through materials. I'd never heard this description paired with thoughts of flesh before. Surely a cleave such as this is going to elicit some kind of trauma.

Out there

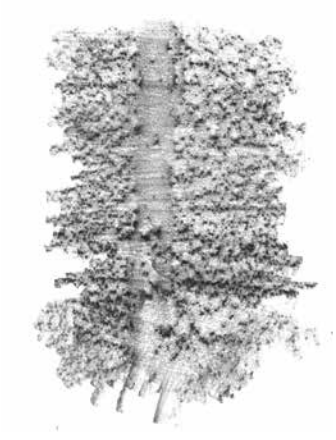
At the bottom of the ocean, around 1000km from the eastern coast of Australia, is the Puysegur Trench south of Aotearoa/New Zealand. It's a subduction zone where the Australian and the

Pacific continental bodies collide. The Australian plate is being metabolised by the Pacific as its geologic base feeds down towards the mantle, nourishing a reservoir of magma as the Earth slowly liquefies upon descent. In time it is regurgitated as lava in the fields in the North Island of Aotearoa/New Zealand around Mount Ruapehu. From the vantage point of the sandstone boundary that encloses the ocean at the McIver's women's pool, this process is occurring at a rate of 10mm a year – but is completely invisible. Like so many events throbbing through the present moment, this process is happening in a submerged state beyond the limits of perception.

Further out there

Further out in the depths of the Pacific exist colonies of diatoms – single celled algae known as eukaryotes, which share biochemical features of both plants and animals. They photosynthesise (like plants) and have a urea cycle (like animals) and their microscopic bodies are encompassed by a 'cell wall made of intricately laced silica' [7]. They are key to the geochemical cycles of the planet as they produce up to 20% of the planet's oxygen while metabolising carbon (alongside iron, nitrogen and silicon) and sequester it down to the bottom of the seabed when they die, fixing

'as much carbon dioxide as all the rainforests of the world combined' [8]. Even though microscopic in scale, they collect in the billions, reproducing explosively and forming blooms that are hundreds of kilometres wide and visible from satellites, like the one that the NASA earth observatory took a photo of in late 2009, a massive bloom off the eastern coast of Aotearoa/New Zealand. Blooms are visible as a change in colour as photosynthesis amplifies concentrations of chlorophyll – becoming a smudge that differentiates their collective body from the surrounding body of the ocean. I like to imagine that the silica from which their delicate bodies are composed (and from which glass and sandstone are also made) is a material that also renders them visible as it picks up the light of the sun and refracts it into a massive shimmer, submerged.



Waters past

Think of a river gone. A river so immense that it's practically unthinkable. So immense that it constitutes not one, but many rivers in time, flowing for 80 million years. The waters carried terrestrial loads of silica from rocks formed 500–700 million years ago [9] that were rent down into a billion[billion] particles which flowed as a 'braided fluvial system,' [10] and/or 'river of sand' along the Eastern Gondwanan Paleocoast [11], and/or with 'periodic mega floods,' [12] and/or as a 'Triassic paleocurrent from Gondwanan Transantarctic Mountains as a dynamic fluvial megacycle.' [13]
At this time, Australia was connected to Antarctica as the supercontinent of Gondwana. As the river moved towards the Sydney Basin, the velocity of the flow diminished in an immense delta region. The mammoth tonnage of silica-rich particles suspended and transported in the currents were released here: deposited particle by particle by particle to accumulate, compact and dry out through the persistent action of gravity in concert with the weight of proceeding particles to collectively become 'a widespread, lithologically consistent, massive orthoquartzite' [14] or a super-body of bedrock that measures up to 5000 metres thick in places. This process (one of so many) occurred around 230 million years ago in the mid to late Triassic period. It is now the dominant

material constituting the Sydney Basin out of which myriad assemblages have been produced, by the labour of so many interlocking forces.

The long extinct river haunts every particle of the basin: this fossilised floodplain.

But this is not an origin story! Or maybe it is, but one that locates origins not as singular or able to be clearly placed, but as a dense constellation whereby materiality gets made and unmade and made again through time's relentless transformations and through materiality's temporal operations. This approach makes the notion of provenance not only utterly unstable, but queer, writes geographer Kathryn Yusoff, noting that any 'starting point' possesses 'innumerable sites of origin and an untimely disposition' [15] such that it aggregates countless other materials, bodies and places, that have in turn been:

...split...
...pulverised...
...chiselled...
...churned...
...extracted...
...subducted...
...bored...

...compressed...
...detonated...
...jointed...
...carved...
...reconstituted...
...recycled...
...cemented...
...uplifted...
...sharpened...
...mined...
...decomposed...
...pecked...
...ablated...
...constructed...
...eroded...
...grooved...
...hammered...
...digested...
...reinforced...
...demolished...

[a thousand times over]

When the word 'sandstone' appears, as it has many times already and as it will continue in the lines ahead of this sentence, bear in mind that this is a convenient catch-all for many (non human) events whose movements, accretions and compressions have together (and sometimes in

ways so complex and temporally distant that they are imperceptible) produced a place which is the expanded site and partial subject of this writing.

This sandstone territory constitutes not one, in the words of Kathryn Yusoff but 'a hundred thousand geologies, all stratified in the geometries of global and local events.' [16] Across the geo-social stretch of the Sydney Basin rests vast swathes of sandstone, siltstone, claystone, shales, volcanic breccias, basalts and coal measures whose buried and sometimes exposed forms express vastly different episodes within the planet's temporal vortices. These layers assemble atop and compress even older surfaces such as Palaeozoic granites, volcanics and metasediments at the bottom of the basin. As in all cities, the geologic materialities which subtend, energise and compose this place weave with a myriad of social relations whose assemblages are in turn, indebted to them. The social flows and formations of any place are, as Kathryn Yusoff contends, 'a product of geologic forces'. [17] This is a place made by sandstone's expanded field as much as it is literally and partially made out of it.

Alexis Pauline Gumbs: (Let's consider) 'an understanding of time that acknowledges the presence of all the energy that ever has been.' [18]

Together manifold socio-geologies embed time's heavy burdens. Writing becomes a means to partially excavate and express parts of a dense constellation of relations.

Winds rising

In the middle of February 1995, I stepped onto the Sydney Basin for the first time. I had recently turned 19, was a year and a bit into my sculpture degree, had seen an image of the Bronte Pool on the East Coast in a lecturer's office – but other than that photo of this liquid eastern edge I had no idea about Sydney. My ignorance was made immediately palpable as the intense mid-February humidity assaulted my feet through 9-hole-high black leather Doc Martin boots that carried me up the stairs at Redfern Station and onto Lawson Street.

At the time I knew nothing about Redfern being the home of Aboriginal civil rights politics. Neither did I understand that it was the symbolic urban heartland of Aboriginal people's struggle and resilience in protecting and preserving culture, effectively being a contemporary sacred site and a focal point for the reconciliation movement as well as the 'capital for Aboriginal Australia'. [19] I didn't know that Redfern (particularly 'the Block') was the centre of an era of activism,

energised by the culture of protest in the 1970s following milestone social actions such as The Freedom Rides of 1965, the Referendum acknowledging Aboriginal people as citizens in 1967, the design of the Aboriginal Flag in 1971, and the beginning of the Black Caucus and the first Aboriginal Tent Embassy in 1972 and that this political era was shaped by the memory and resistance towards prior injustices, such as the theft by the government of 13,000 hectares of independently settled Aboriginal farmlands between 1911 and 1927. This land was then leased and the money raised was used to fund the child removal program, resulting in the Stolen Generation. [20]

I was completely unconscious of how the momentum of this political energy that flourished in the 70s inspired the development of Australia's first Aboriginal-run services during the same decade including The Aboriginal Medical Service, The Aboriginal Legal Service, Murrawina Childcare, The Black Theatre, The Aboriginal Dance Theatre, Boomali Aboriginal Artists Co-operative, The Settlement, The Aboriginal People's Gallery, Redfern Radio, Gadigal Information Services, and the Metropolitan Local Aboriginal Land Council – many of which are still serving their communities today.

Stepping up onto Lawson Street from Redfern Station, I was immediately struck by the vision of a fading mural on the bridge's Northern wall, which I didn't know was titled *40,000 years is a long, long, time.*[21] Within this mural I saw a multiplied vision of Sydney. The current urban formation stood erect in the distance, beyond the immediate space of the wall which in turn functioned as a support upon which another image of Sydney was portrayed – one that assembled specific people, stories, multiple timelines and symbols relating to interconnected social-cultural fabric of Redfern's Aboriginal histories [22], both pre and post colonisation and urbanisation. The 'Sydney Eye' tower appears twice in this moment. Once as a built form in the distance and the second time as a motif which is partially obscured by the tail of a billowing Aboriginal flag – beautiful black, red and yellow. The flag becomes the central motif and its effect is to provoke attention, reminding you that you are on Aboriginal land! – and that sovereignty was never ceded. Country's not only 'out there' beyond the cities of the eastern seaboard, but right here and now, in the centre of the urban fabric, *everywhere* in the ground and sky. The image of this flag becomes visible as soon as you step onto Lawson Street, which was once a sandstone ridgeway affording views towards the sand dunes adjacent to Botany Bay before the overbearing

multi storey police towers were constructed on the corner of Regent Street, abruptly obscuring the view in the 80s.

The vision of the mural totally arrested me. It was a potent introductory sight of the city. Moments later I became alert to the presence of smoke. Its woody smell arose from a communal fire that burned on 'the Block'. This place has been the centre of an urban Aboriginal community, which includes diasporas from many First Nations around the continent, especially since the 1880s when the Eveleigh rail yard complex was established, becoming the largest employer of Aboriginal people in the city. [23] In 1972, The Aboriginal Housing Company (AHC)— Australia's first community housing organisation— received a $500,00 grant from the Whitlam Government and became the first urban-based land that Aboriginal people owned in the Sydney CBD.[24] But long before invasion it was a meeting place 'for tens of thousands of years.' [25]

Glimpsing collective engagement within an urban centre was an unfamiliar sight to me. I've visited 'the Block' many times since this formative encounter: to walk and learn with people during workshops [26], to hear the impassioned words of Wiradjuri elder Jenny Munro about the

painful predicament of the place in the face of gentrification, to make a video of the *40,000 years is a long, long time mural* on Lawson Street in a fading state, to see a public screening of Utopia by John Pilger one mesmerising summer's evening, to collect fragments of freshly demolished concrete painted pink on one surface as I witnessed the beginnings of the most recent wave of demolition to the area. Before this began, on National Sorry Day on 26 May 2014, a second wave tent embassy led by Jenny Munro was established adjacent to the Redfern Community Centre and remained there for more than a year in protest of the development. However, in August 2015 protesters lost a Supreme Court case asking for a possession order of the land, but successfully negotiated with the Federal Government that $70 million be spent on 62 affordable homes for Aboriginal people. [27]

Upon writing, 'the Block' is presently being carved away by diggers driving deep into the Hawkesbury sandstone that makes the ridgeway. Soon the hole will be reinforced by concrete foundations as a 24-storey building – accommodating 600 students from the University of Sydney – will be constructed by Deicorp developers. This company has many projects on the go in Redfern and nearby Waterloo, with titles like 'Urba', 'TNT apartments' and 'Deicota' promising

'*exquisite views of the CBD*'; '*a chance to own a piece of Redfern's history*'; '*a dream lifestyle adjacent the CBD*;' and '*a huge upside in downtown Redfern*.' [28]

Many decades ago, on the corner of Lawson and Regent Streets, at the edge of the *40,000 years is a long, long, time* mural (ironically restored in 2018 just prior to Deicorp fencing off access to 'the Block' by a construction awning), persistent winds rose up from the dunes and swampy lowlands located in the south 'for as long as people can remember.' This is what Gadigal writer Cathy Craigie narrated to a group I was involved with in 2015 during a social history walk.[29] We felt the same winds bluster around our legs and ears as she spoke. They were cold and unnerving and amplified by the buildings towering above us. The gusts buffeted the microphone of the recorder I was using to record Cathy's words, rendering them obscure in many places. The story of the winds, winds which carried stories of their own (of the shifting of seasons and of the presence of life forms and ecologies such as the sand dunes which were once situated beyond the current location) coupled with experiencing them directly that day helped commit them to my memory. I found it remarkable that even amidst so much outward change to the place, something as ephemeral as wind had remained constant, and

because of its consistency had been woven into the memories of people across generations.

Grindstone held in sandstone

The Macleay Museum at the University of Sydney contains hundreds of stone tools from First Nations around the country. Some of these objects, including a sandstone grindstone, were included the *Written in Stone* exhibition, curated by Matt Poll in 2016. The grindstone was donated to the collection by the Macleay family between 1865–1891 and contains remnants of plant seeds embedded in its gritty surface. It's from a part of NSW beyond the Sydney Basin (location unknown) and was most likely collected by 'settlers who did not realise they were purposefully left there by people ready for harvesting and processing the food of that region.' [30] Its form holds vestiges of landscapes, processes and millennia of intergenerational knowledges as it speaks to first nations practices of quarrying stone, agriculture, and vast economic trading networks across the continent. The production of sandstone millstones and grindstones were in substantial demand by desert nation groups as seed-gathering economies developed around 3000–4000 years ago. This demand was met by specialist grindstone quarries, which produced millstones through

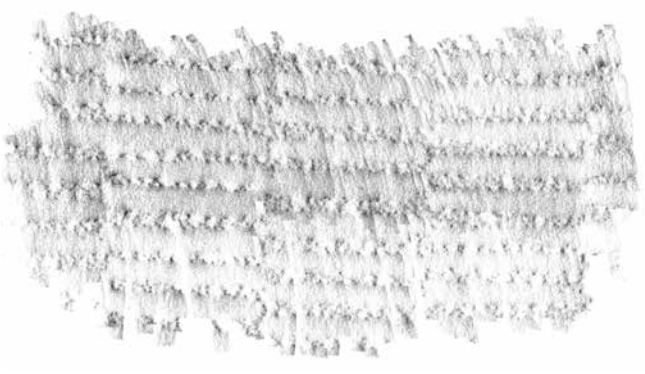
careful regulation of knowledge by senior men. Quarry complexes were located in areas such as Anna Creek, Tooth Nobb, Innamincka and the southern part of Lake Eyre Basin. [31]

This grindstone is cleaved from different and distant country from which much of the early University of Sydney was built, which was of the Pyrmont Quarries in Sydney constituting material from Gadigal and Wangal land. [32] The millstone travelled great distances to end up contained within one of the city's first 'sandstone institutions'.

In an analysis of the University's deep indebtedness to Gadigal land, knowledge and labour, historian Billy Griffiths outlines the interrelated ways in which the institution was initially fashioned and has subsequently thrived from stolen natural-cultural, human-inhuman resources. For example, the initial geographical location upon which it is sited was a significant meeting place for the Gadigal with the Southern and Western clans. Feasting, ceremony, dispute settlement and camping took place here. [33]
The area had abundant food and resources. [34]

Concurrently, the wealth that financed the University's material construction was extracted

by settlers across NSW from Country stolen from other Aboriginal nations. Griffiths cites the Macleay family, who arrived in Australia in 1827, as an example 'whose collection and wealth funded the Macleay museum, made some of their fortune from viticulture near Wagga Wagga, on land appropriated from the Wirradjuri nation.' [35] The collection of the Macleay family was bequeathed to the museum (opened in 1892) and comprises over 300 artefacts of Aboriginal manufacture, [36] which were often sourced through the knowledge and guidance of Aboriginal people on research expeditions. [37] Subsequently these artefacts – including stone tools and weapons, bark paintings and even human remains – became archives from which particular kinds of Enlightenment driven Eurocentric knowledges were partly produced – discipline by discipline – including Ethnography, Archaeology, Geography and Geology.



Digging to shale

I can't get my eyes off the little ball of clay that Dr Damien Field is kneading into shape. It's surprisingly elastic. It's just been extracted from a metre below the surface of Hyde Park, in the north eastern corner directly adjacent a looming, sculpted sandstone edifice of Saint Mary's Cathedral. I invited him and Professor Stephen Cattle from the School of Life and Environmental Sciences at The University of Sydney in late 2013 to assist me in digging a small section of Hyde Park with permission from the City of Sydney, in order to see what the ground is made of. I consulted a geological map beforehand which locates a tiny patch of shale, listed in the reference key as '*Rwa – black to dark grey shale and laminate*' from the Winnemata group. It persists as a little hydrated pocket of mineral-enriched geologic matter sandwiched between Hawksbury sandstone and topsoil made heterogenous through decades of digging and cultivation in the park. We managed to reach the little 'lens' on the third dig, and with the help of an auger, thick lumps of richly coloured material were drawn up to the park's manicured surface.

On the video documentation of the process, I can see his thumb and forefinger work the material for five minutes as its manipulated flecks of orange,

red and yellow merge into a homogenous muddy hue. When done, he pinches a tiny bit off the ball and smears it on a piece of paper with printed markings that help register and determine the clay's properties. The material's plasticity is caused by the high proportion of clay in the mix. I didn't imagine that these soil scientists were so prepared to literally get their hands stuck into dirt. What was I thinking? This is their designated field of expertise, of course they are going to want to touch it!

'Dirt'.

No, it's not dirt – it's soil, they tell me, it's teeming with microbial life and it's been fundamental to the survival of the human-animal species. And it's fragile due to widespread agricultural practices that rapidly degrade it; and is therefore becoming endangered. 'Do you remember the red dust clouds that raged over Sydney on the morning of 24 September 2009?' No – I don't because I was living in Melbourne then, but I saw the event on the news. A friend of mine lived in Petersham in inner western Sydney at the time and she woke to eerie casts of red that persisted throughout the day – reddish orange hazes that partly blotted out the sun. The air particle concentration reached 15,400 micrograms per cubic meter

that day compared to 20 micrograms in 'normal' conditions. The prevailing droughts at the time led to desiccated topsoils in far western NSW which were lifted upon ferocious winds that blew the whole load over the eastern coastline. If you Google 'endangered soil' you'll learn that over the last 40 years 30% of soil beneficial to agriculture has become unproductive, and if current mono-agricultural practices dominate, the rates of soil degradation mean that there are about 60 annual harvests remaining. That takes us to around 2079. G will be 61 by then, if her generation survives the crisis.

A few months later, in March 2014, the grounds-people who manage the park under the organisation of the City of Sydney agreed to help me dig a 1m cubed hole in the same location and leave it exposed for 3 months. We took turns digging down into the clay. At the time I did not consider if 'the earth would submit to this unannounced displacement,' and that it 'may have other plans.' [38] The process was performed with shovels, so it took almost the whole morning. As each action of the shovel disrupted portions of ground, the clay's surprising multi-coloured materiality emerged, genuinely sparking awe in the four of us present that day. '*Why is that lump a bright purple? I had no idea that such a colour could have existed here*,' one of us exclaimed audibly on the recording.

When the hole was complete, a safety fence was erected, and a sign installed that read:

The soil that has been removed from this site has been temporarily relocated and placed within an installation on Cockatoo Island titled 'Fashioning Discontinuities', during the 19th Biennale of Sydney. It will remain there until Monday, 9 June 2014, after which time it will be returned to this hole.

The process of removal shows the profile of the soil in this exact location. At the top of the profile is the loamy top-dressing from recent landscaping activity in Hyde Park as it exists now. This park did not always exist. There was a time before it was even a concept or a physical space. In its place stood a stand of dry sclerophyll forest, the clearing of which began upon invasion in 1788. The park now persists as one expression of a larger process of colonisation and annexation that continues into the present moment.

Below the top layer of soil, at the depth of about 40 cm, rests a thick layer of fill composed of clay peds with rubble including shards of bluestone, broken brick, charcoal, bones, fragments of crockery, and broken glass. This material was deposited in the park over decades of excavation and building around Sydney. The pockets of clay within this mixture are most likely derived from the massive excavation that occurred within this park during the Great Depression, which involved the digging of the City Circle underground rail tunnel that began in 1922.

Below that, beginning at the depth of approximately 1 metre, sits a luscious layer of clay, shrouded in total darkness until this most recent excavation. This clay is derived from a part of a small lens of Ashfield Shale rock, one of the Wianamatta group of shales that formed in the Middle Triassic period of the Mesozoic era – around 220 million years ago. Embedded within this layer are the remnants of tiny roots of the vegetation that flourished and perished during that period .[39]

A few buckets of clay from the bottom of the excavation remain in my garage now. I've been meaning 'to do something with them' for ages – but haven't. I sometimes remember to replenish the water content of the buckets. The clay seems thirsty in that moment. I can hear the sound of quenching. It's audible as thousands of bubbles rush out of tiny pores in the clay as the air that has settled there over months suddenly gets displaced.

<u>Dust clouds</u>

I run to catch the train. The air turns from transparent to cloudy as I pass through the automated gates and in a moment the granular taste of dust permeates the receptors of my nose and mouth. Women pass by while moving in the opposite direction. Some of them employ the woollen sleeves of their jumpers as a barrier to prevent inhalation of the airborne material.

The sun gets caught up in a temporary ground-cloud. It expands, confidently filling the open space that accommodates it, but there are no distinct edges present so it dissipates almost as quickly as it formed.

I saw a glimpse of the sandstone bedrock being worked through gaps in the awning that advertised the construction of the Sydney Metro. The sandstone is becoming a hole in order to become a tunnel so as to accommodate new forms of mobility for the future city. Is it still rock when processed into a scale so small that it gets carried away on a buoyant current temporarily overriding gravity? The sandstone foundation which has endured below the city – dormant but not dead, alive in its latency – is being discharged from crystalline condition to become volatile: a mobile corpus of silica particles released and gathered upon a July breeze, dissociated from the whole by thrashings from a jackhammer. For a moment it becomes air before relaxing downwards, particle by particle.

These events are nothing new to sandstone.
It's a material familiar with the capacity of metals which combine with the collective actions of many millions of hands; together splitting, scratching, cutting, pecking, grinding, sawing, ablating, chiselling, exploding, fissuring. These procedures have generated countless modulations. As the sandstone combines with forces productive as they are destructive as they are productive it becomes reassembled a thousand times over – macerated, metabolised, mobilised, distributed – perpetually

reorganised into parts of a city: one which partly contextualises this writing.

I can feel the pulsations of the jackhammer.
Like the dull thud of a current on an electric fence,
it reverberates through the substrate as muffled
vibrations, which reach the surface to meet the
soles of feet. I'm sure others feel it too, as we pass
over the vitrified surfaces of the station, rushing
towards home.

A fragment of rock

At Canterbury Station on the Bankstown Line, a formidable sandstone remnant endures in the southern retaining wall on platform 2, just under the pedestrian bridge. The NSW heritage report outlines the significance of the station representing a particular design aesthetic that prevailed prior to the standardisation of railway buildings in the late 19thC, during a boom time for railway development and suburbanization. Canterbury Station was built to encourage agriculture and suburban settlement of the area, which meant that a lot of the turpentine iron bark forest that once existed there was cleared. The material details of the station possess an aesthetic that embodies better economic times than those of the period of depression that descended in the

1890s. The report notes the '*polychromatic brickwork, decorative dentil coursing, ornate awning brackets, carved bargeboards, cantilevered awnings, filigreed steel brackets*' [40] – but the rock escapes mention. Initially, I thought this rock was an autonomous boulder. It caught my attention in the first few weeks of moving from Melbourne to Earlwood (Sydney) in 2013 and alerted me to the presence of countless sandstone remnants throughout the neighbourhood.
It's curious that this remnant rock survived the construction of the station. It could just as easily have been detonated like the rest of Canterbury's many craggy outcrops that proliferate in archival photos of the area. The exfoliated surface could have then been finished in a manner similar to the surrounding embankment, which constitutes an impressive vertical veneer of brown brick climbing three levels high to the street. But it wasn't, and the rock persists. More than that, it seems to have been purposely maintained in situ. Preservation is apparent in the detail of the masonry of the brickwork as it meets the rock's geological form. Pieces of brick have been fashioned in accordance with the rock's specific contours, cumulatively working to frame its outer edge and resulting in a boulder-ish outline. But it's not a boulder, it's a fragment of that massive body of orthoquartzite that extends way beyond the station's 19thC retaining walls and deep into the foundations below Canterbury Road and southwards down

towards the Cooks River, and beyond into subterranean darkness.

Rocks lost

After first glimpsing the rock at Canterbury Station through the window of a moving train – which I initially mistook for a boulder – I became more curious about the sandstone bedrock which was visible throughout the neighbourhood. At the time I did not know about the sandstone of the Sydney Basin as a complex geological entity and how this local rock was a part of that story. I began to learn about this while walking with sandstone that proliferates throughout the suburbs of the Cooks River catchment area. I walked the neighborhood for five years: for fun, for exercise, for photography, for relief, for air, for encouraging the baby who'd settled into breech position to reorient, for getting to the train in order to get to work.

While walking I became acutely aware of the dramatically undulating landscape structured by the vital presence of sandstone. The sandstone 'woke' me. It alerted me to another time when this place assumed a radically different shape. The dominant spatio-temporal order,

of which the cadastral grid is but one expression, organises the landscape such that the sandstone can only be perceived in fragments now. It has become disjointed by roads, real estate boundaries, footpaths, trainlines, gutters and pipelines as it protrudes and jostles with concrete, brick, pavers and asphalt.

One summer evening I noticed that a block of land towards the Cooks River, which was unoccupied for a couple of years, had been enclosed by construction awning, and earth moving equipment was already present on site. I'd intended to explore this place because of an interest in the large horizontal sandstone plateau that dominated the hill-top and which was partly visible from the street. This block of land was one of a rare few places that existed in Earlwood where the sandstone hadn't been carved away to make room for real estate. It was also the largest remaining horizontal plateau that I'd seen, other than the ones prevalent within the national parks that encircle the city. The construction of the awning escalated my desire to see and touch the sandstone before it was obliterated.

Four years later, I'm scouring through my digital documentation made on the site. The first batch of images were taken on a Friday evening. I'd

ridden from my house, camera in tow, and had negotiated with the foreman who was packing up and ready to depart, to allow me access to the site. I explained how I was a 'photographer' and interested in the geology of inner western Sydney, and how this was my only chance to make a record of it. 'No,' he said, 'it's dangerous up there.' I persisted. He relented and I made my way up the hill before frantically attempting to photograph the rock. My attempt was futile. The light was fading too low for the exquisite details to register adequately. Most of the shots are obscured by blur that indexes unsteady hands. Besides, the plateau had already been worked over by the machinery, the surface scraped flat. Any interesting irregularity once there was levelled by the thick metallic edge of the earth mover, leaving swathes of broad grazes in its wake along the entire block. Across the worked-over surface, multiple colours inherent to the sandstone were revealed: brown sliding into orange bleeding to ochre, turning white.

Another set of images was made the following week, when I revisited the site after major excavations that transformed the plateau into an enormous chasm 8 apartment floors deep. The space was being prepared for concrete formwork that would in turn become the support structure for the *Riverina Apartments* built shortly afterwards.

The surface produced by a week's worth of heavy-duty cutting was incredible, exposing 20 metres of sandstone strata whose patterning embodied countless sequences of sedimentation and compaction over millennia. Iron molecules that had accumulated in tiny pockets between silica particles were distributed across the massive surface as wispy brown swirls. The process of erosion was also visible, as trickles of surface water moved from thin sections of topsoil, along already established jointing patterns towards the bottom of the chasm to fill up cubic holes cut at rock bottom. I could see sandstone boulders in the making along these joints, now arrested by the excavation whose horizontal expanse constituted an enormous boundary, demarcating properties. This was comical in both its scale and how it so literally embodied an imposed separation. A modest brick house teetered on the top of the ¼ acre block left intact. Below, the freshly exposed surface held multiple blade-marks which documented the exact reach of the massive rotary saw which cut, metre by expensive metre, into the stone.

That awesomely scaled and detailed stratigraphy was exposed as a fresh cut for a few brief weeks. It's now painted over in a thick layer of *creamy-beige*.

Ridgeways

That block of land was in Earlwood, which is located at the edge of the inner western ring before the 'Western Suburbs' commence stretching outwards towards the lowest part of the Sydney Basin situated around Fairfield. While living there I quickly noticed how the suburb straddles a large sandstone ridgeway that stands high enough to afford glimpses of CBD Sydney by day, and fireworks in the night depending on the season. The southern side the ridgeway descends into craggy sandstone outcrops that have partly remained intact on the steep slopes before flattening into marshy lowlands. Then the land dips into Wolli Creek. It's swampy in these parts. Mists rise from the ground around sunrise and nearby houses display cracks, signifying shifting

terrain which has been rendered soggy and then mobile by the waters that drip from the ridgeways and seep via capillary action through the soils, moving irrepressibly towards the creek.

The Northern ridgeway runs adjacent to the Bankstown trainline, the existence of which is enabled by a deep horizontal cutting through a long stretch of sandstone. This cutting demonstrates how deep times of the Earth interlock with human chronologies. Forms on the surface carry multiple traces of formation. The stratigraphy in the cuttings make visible vast episodes of silica particle deposition in concert with long columnar incisions indicative of the forces of gelignite employed to blast off the ragged facia eons later. In patches the surface is made stucco by aerated concrete that's been sprayed at some point in recent history. Bolts hold sections in place through actions of reinforcement. Ground waters, which seep in and out due to the stone's porosity as well as to the myriad joints distributed throughout the body of material, succumb to the Earth's gravitational powers and escape the bedrock at the vertical face, making slow streams that streak the surface with an inkier finish than the surrounding, drier sections.

While waiting at Dulwich Hill station one morning I was brought into visual proximity with fragments

of the sandstone. The interval of time was long enough to afford glimpses of former contours. It produced a vague sense of how the sandstone might have cohered as a continuous body of material before the rail corridor was blasted into existence, fragmenting the bedrock into multiple discontinuities. Other mornings the angle of eastern light streaming down the corridor brings about a shimmer not only upon the seeping waters, but upon the stone's rough-cut surface. The same light gets tangled up in a tiny, shaggy triangle of Kangaroo Grass – *Themeda Triandra* – growing at street level, visible but inaccessible behind a cyclone fence. The fronds waver in perpetual breezes moving over the ridgeway.

Over the southern ridgeway, there's an extraordinary fragment of sandstone that remains within an assemblage of remnant bush amidst suburban fabric in the Girraween Park, in the strip of land that runs alongside Wolli Creek. The steep incline of the landscape where this outcrop persists has made it unsuitable for housing. It's a rare patch of space in Sydney that has not been processed into private property. But the absence of development there is owing to sustained community advocacy since the late 70s in response to a proposed 8-lane surface freeway connecting Redfern to Liverpool through the Wolli Valley.

You only need to enter a few metres into the park before forgetting that you're in a suburb. I'd never experienced this before moving to Earlwood where walking in the bush first meant travelling a very long way from an urban centre. But here, at the back of a ridgeway of Inner Western Sydney, it persists as a slice. The walking track is on the southern side of the slope. This aspect, combined with the canopy made by trees, prevents the sun from reaching in. The situation is starkly different on the suburban, deforested side of the hill, which often appears bald stark white.

The presence of this little stretch of bushland reminds me that the future requires collective labour (sometimes over generations) in order to bring worlds into being in ways that celebrate forms of value beyond systems structured by profit. Those who have fought to steer the future in directions otherwise than what seems inevitable because of existing trajectories, have contributed immensely to championing what Karen Barad describes as 'ecologies of diversity necessary for flourishing.' [41]

On the opposite side of this ridgeway, the equally steep incline that has defied suburban development, 229 years ago assisted Bidjigal warrior Pemulway's evasion of a hunting party.

It was led by Watkin Tench in the summer of 1790-91, who was commanded by Governor Phillip to capture and murder the warrior in retribution for the spearing of a convict servant called John McIntyre on 10 December 1790.[42] Not far from this location is a midden and rock shelter with stencil art. There are many art assemblage sites intact in the bushlands on the Northern side of the Harbour, such as in Ku-ring-gai Chase National Park on land of the Durramurragal people, whose sandstone plateaus around the Basin hold depictions of humans, wallabies, fish, emus, turtles and symbols (either of a boomerang or moon) which are inscribed into the sandstone surfaces by processes of pecking, hammering and scraping 5 – 7000 years ago. [43] Another site holds a petroglyph of a macropod that has been superimposed by an image of post-contact sailing ship. Around these inscriptions, 'art sites, burial sites, caves or shelters, midden sites, marriage areas, men's areas, women's areas, birthing areas, stone arrangement sites and tool manufacturing locations' [44] assemble. However, here in the Inner West the stencil art site associated with the Bidjigal people is a fragment of what would have been a vast cultural complex and is the only one of its kind that remains amidst almost total suburban development.

Water ways

One mid-morning in the middle of July in 2019, around 30 people congregated to partake in a walk along a section of the Cooks River catchment. It was choreographed by the artist Clare Britton, whose PhD project explores complex entanglements along the river. Constituting one of the most polluted waterways in Australia the river registers indigenous, colonial, industrial, suburban and recreational histories and brings them into relationship along its banks, much of which is now reinforced in steel and concrete over decades of engineering. The shape of the river has been reworked around Botany Bay where it

was completely rerouted 1km to accommodate a runway expansion at Sydney airport in 1953.

Named after Captain Cook, it's not strictly a river as much as a tidal body that pulses up and down in concert with the waters blooming from Botany Bay. These waters commingle with episodes of rain and stormwater awash from the suburbs in the catchment area; such as Earlwood, Canterbury, Marrickville, Dulwich Hill and Hurlstone Park which perch upon the ridgeways above. When the tide is low, detritus flushed down the gutters (and sometimes dumped over the embankment directly) is revealed in the thick sludgy sediments of the riverbed. Parts of the Cooks were swampy before colonisation, and mudflats remain in areas around Tempe where mangroves persist and crustaceans clump on concrete reinforcements, but the presence of mud has been intensified through centuries of deforestation and erosion. Because the topography of the land made it difficult to farm, the eucalyptus forests that were present throughout Sydney remained in this area. However, when suburbanisation accelerated in the late 19th century the forests were rapidly depleted and transformed into shingles, housing timber, cartwheel, bridges, fences and firewood. [45]

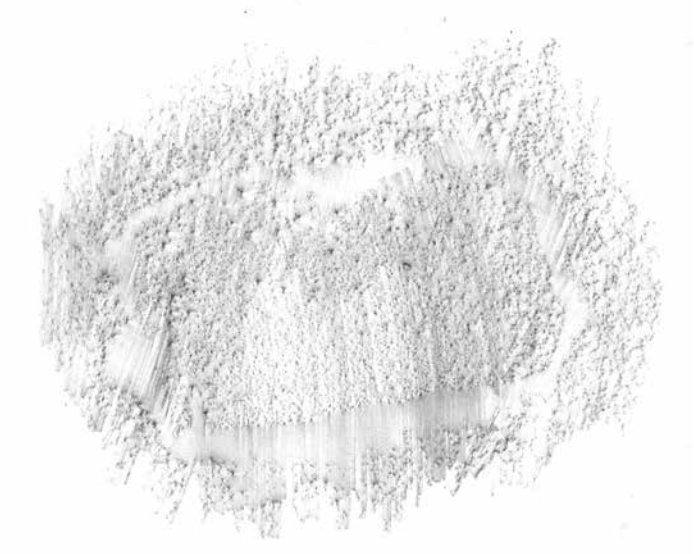
Some days when the tide drops, trolleys, broken bicycles, chairs, plastic bottles and brooms emerge from the sludge. Other days and after particularly heavy rains gyres of plastic eddy between the banks on a journey towards the Pacific Ocean. This is the material that's actually visible, but the substratum of mud contains stuff that is less obvious and more noxious due to centuries of overflow from the vast range of industries (tanneries, piggeries, wool washing, sugar milling, lime-burning, abattoirs) which backed onto its banks and deposited waste into its body for two centuries, effectively figuring it – as proposed by Jennifer Mae Hamilton – 'a giant drain for the surrounding suburbs.' [46] The relationship between collective waste and bodies of water apparent here isn't unique to the Cooks. It's exemplary of the dominant anthropocentric relationship to waterways practiced since colonization. [47] All the fresh waterways throughout Sydney were transformed from drinking source to drain within decades of annexation. The tank stream that once ran from the current southwestern corner of Hyde Park towards Sydney Cove (now Circular Quay) is famous for it, becoming the colony's open sewer by 1826. [48]

The tank stream gains its name from the storage 'tanks' that were excavated in the sandstone river

banks at three locations along the body of the stream by convict labour, each holding 20,000 litres of water. The landscape of this stream is now entirely buried beneath the surface of the current city. Before 1788 the stream begun in a swampy area adjacent to Hyde Park, beneath the city grid currently delineated by Park and Market Streets. It was fed by freshwater springs and dropped 30 metres as it traversed the terrain from the mangrove swamp at the heads, towards the cove, over a sequence of sandstone cascades. Over time the stream was progressively engineered into its current subterranean form [49], perceivable now only as a material fragment consisting of a chunky assemblage of cross-sectioned sandstone, brick and concrete. It sits behind glass adjacent a food court in the basement of the Australia Square Tower at Martin Place. You'd never know it was there unless you went looking for it.

Earlwood would have also possessed innumerable sandstone cascades over which water would have flowed as it was drawn down to the lowest parts of the terrain. Depending on which side of the ridgeway the rains fell it would have found the Cooks River or Wolli Creek, and then merged together into one body somewhere at the mouth of Botany Bay. It still does this, but over a different assemblage of engineered surfaces which amplify

the flow during periods of heavy rain.
I witnessed vast quantities of water flow down Earlwood's verges, roads, gutters and stormwater outlets whilst living there. One November in 2015 the rains were so persistent that the gutter adjacent to our house burst, and water rose up to overwhelm the footpath; becoming a torrent that carried loose materials from the streets above and down into the Cooks. During that same weather episode, the strip of businesses on the southern side of the ridgeway where Clarke and Homer Street meet was completely flooded and closed for days. Once inundating the shops, the water continued moving south towards Bardwell Valley and flooded the rail corridor as it rushed towards Wolli Creek. You can watch the CCTV footage of the event on Youtube and see the train platform at Bardwell Park station become rapidly engulfed over a period of 45 minutes. Seeing this torrent flow through the town helped me to look through the fabric of the current infrastructure and into the topology of the pre-colonial sandstone landscape – in that moment I could picture a space which would have always accommodated and encouraged water's movements. It's just that the shops are in the way now.



Gestation

It was our last day of Easter holidays and the three of us visited Steamers beach, in the Booderee national park on the Bhewerre peninsula at the southern extremity of the Sydney Basin bioregion. It's on the land of the Bhewerre traditional owners. It was the day of the April equinox, so the sun's angle was getting noticeably steeper in the afternoon. As it descended its light got tangled amongst the highest reach of leaves in the forest's canopy and the intensity with which it shone only a second before, diminished into something entrancing. The whole visual

field dimmed down in an instant, yet countless silica particles constituting the sand shone with crystalline distinction within the scope of this little half shadow. For the first time I think I experienced what it was to be amidst a 'penumbra'. It's a concept I learnt in year 9, regarding what happens during an eclipse. It describes a condition of partial illumination, a state that hovers between (lightened) darkness and (darkened) light. Indeterminate. Ephemeral. Within the penumbra that progressed over us, we walked together silently, oriented towards the lightly shadowed sun. R and P were a few metres ahead, but G was right with me, a kernel of possibility lodged silently somewhere in my being – yet this was unknown to me at the time. It made sense afterwards though, when I reflected upon how my senses had become noticeably heightened that day, especially my visual perception which alerted me to a shimmering performing all around. You could put it down to a hormonal spike, but I speculate that it was also because of an augmented state of consciousness activated by G's immanence, which shifted my sense of embodiment in a way incomparable to any experience I'd lived through up to that moment.

Rubbings

For a whole day, I walked through the centre of the city in search of sandstone surfaces; ones that bore obvious traces of production that index processes of splitting rock from rock. Traces of handiwork are etched upon a variety of surfaces: as pock marks from the pointy ends of axes worked by convicts or as neat lines carved by qualified stone masons who would have been involved in the trade union that won the right to an 8 hour working day in 1855. There are a few walls constructed from huge rough-cut blocks of sandstone around the famous 'Argyle cut' [50], where tiny shell fragments are visible in the chunky mortar. These remnants are from several middens that were decimated by lime-burners, as shells were pulverised, burnt and transformed into lime for the expanding colony because there was no natural limestone present in the geology of Sydney. During the 1850s much of this shell-based material was excavated from the Cooks River area, as well as the Illawarra in places like Shellharbour in the 1860s.[51]

Over the day I translated some of these textures from stone to paper, through the application of graphite rubbed upon surfaces. A few of these are dispersed amongst the various written fragments of text that populate this fictionella.

Basalt incursions

In April, four of us stood on the asphalt outcrop perched above the 'little blowhole' in Kiama on the south coast of NSW, waiting for the next rolling wave to slam against the rock face.

It was really warm that day. Too warm and unsettling like all the others this year. According to the Bureau of Meteorology, April 2019 in NSW was the fifth warmest and 1.97 degrees warmer than average, April being the fourth in a string of months whose daytime temperatures are the second warmest on record.

The temperature of the day was accompanied by a blaring sun. The sky stark blue made the basalt of the surrounding cliff approach black, especially so bathed in a persistent wet jet of seaspray.

We first encountered the basalt as we parked the car – carefully backing it up to meet the retaining wall, with our seats oriented towards the ocean. The view of the Pacific was in turn framed by an archway-like construction that aggregated nuggets of basalt (presumably excavated from the ground directly below us) into a semi-architectural civic folly. Three minutes later we learned that it was a commemorative structure hailing Cook's engagement with the area.

Witnessing the energy of each wave transform into a sonic boom as the velocity of the water squeezed into the chamber of the blowhole was exhilarating. It took a bit of time for the body of water to transfer from the cliff face into the tunnel that had been carved out over time in the softer basalt 'latite', and then up into a vertical spray. It roared. The forces that propel this water into an ephemeral, perpetual event are the same forces that gradually produced the blowhole over vast stretches of time. They're the same forces that persistently gnaw away at the sandstone cliffs north and south of this location. Tiny particles of water rained down upon the rocks below, sounding something like a ricochet. G squealed. As she observed this curious assemblage of water, rock, sun and sound, I thought about how billions of neural pathways were proliferating behind her eyes in that moment. My eyes on hers, scrutinising this invisible event. Her eyes a pair in a succession of millions who have witnessed the relentless pulse of compressed air-water. This includes hundreds of generations of local Wodi-Wodi of the Dharawal who know this place as *Khanterinte* – translated into English as 'a place where the sea makes a noise.' [52]

The swathe of basalt that is part of present-day Kiama is known by geologists as the Gerrigong

Volcanics, deposited by lava flows 260 million years ago during the Early Permian period. Much later on, around 60 to 25 million years ago during the Paleogene period, an additional layer oozed across the former. The more recent deposition encroached the previous strata, resulting in a series of 'incursions', or dykes, which – because of being softer – became susceptible to erosion. It is within one of these incursions that the blowhole emerged through wave after wave of collective action by a billion[billion] particles of water.

After lunch, we drove north, a little bit further up the road to the Bombo Headland Quarry.

Worked away

Imagine that you're making a sculpture. You make a right-angled corner using two planks of wood, most probably MDF or plywood. It really doesn't matter what. It's the right angle that counts. It's about 60cm wide by 60cm long and about 40cm high. Then into this box you push a whole lot of clay. You start with the corners and then continue adding material until the space is full. Then, knock off all the MDF walls employed to retain this clay, so that only one remains on the left-hand side. What you'll have left is a thick swathe of material. Now take a knife, or something similar that will

allow you to scrape out most of the clay you've just compacted. Leave a little edge at the left-hand side of the wedge, cut down as straight as you can go, being careful not to hit the horizontal bottom of your box. Try and leave a thin layer of clay there! Then extend your implement towards the right and carve out all of the remaining clay. What you are left with is an edging of material to the left and the bottom of your box, which roughly traces a 90° angle. Imagine it's a landscape. Imagine it's the Bombo Headland Quarry after the basalt was initially hand cut, later blasted away.

Once you've transferred the thought of the space that remains after the clay is removed from model to landscape, replace your memory of clay with approximate visualisations of basalt and scale it up 100 times. That vertical wall that's now towering above you is oriented northwest and its elevation is such that the sun's trajectory in early May starts to dip below the edge by 2pm already. You are standing in the guts of the now-gone basalt that once pulsed as fiery ooze from deep within the earth – then solidified – then got pulverised into aggregate for about 100 years by the extended action of hands hardened by chisel and mallet, painfully biting away at rock, eventually overtaken by the powers of dynamite. The energy required to split rock from rock is

figured as surface impressions, like neat starbursts that endure long after the energetic event. These marks are distributed randomly upon some of the remaining columns, which stand between the cut that delineates the void-space of the quarry and the surging ocean, just beyond the basalt edges.

The hole that was the quarry is haunted by one body of basalt reassembled into roads and railways, which in turn afforded increasing mobility (physical, psychic, economic) to the ever-expanding colony. It's been on the State Heritage Register since 1999 and that's why you are allowed physical access and are standing in the midst of it now, as the four of us did one very sunny day in May. Remember that there was another pulse of lava, about 200 million years later than the first. The second time around it was charged with heat, enough to liquefy the underlying rock as it slowly advanced, concurrently forming and filling channels across the black-and-blue terrain. This secondary pulse emerged from the Earth's mantle, around 80km down. As it exuded out from a subterranean chamber towards an open environment less viscous and more volatile, it churned up and distributed xenoliths composed of rare mineral assemblages including apatite, amphibole, pyroxene, spinel and ilmenite. [53] The presence of these minerals captured in the

resultant striations of basalt render this place a terrain unlike anywhere else situated upon the surface of the Earth.

At precisely 34° 39' 2.23" S, 150° 51' 45.8" E – it's pretty easy to overlook a unique immaterial condition fixed in the basalt. We didn't realise it until we consulted Wikipedia in situ and began to understand that something else even more remarkable, and impossible to perceive, had registered amongst these striations. It's what drew the glaciologist Paul-Louis Mercanton to Kiama in 1926 while testing a hypothesis that if the planet's magnetic poles had been reversed in the geologic past, that there would be rocks distributed across the Earth that would register these intervals. After fieldwork in the northern hemisphere, he visited the south and learned that in Kiama, the basalt striations at Bombo register both 'normal' and reversed periods of planetary magnetisation. [54]

When the newer surge of lava (during the Paleogene period) moved across the older Permian one, the Earth was buzzing through an opposite magnetic polarity to the one reigning when the first flow surged. Because the polarity was reversed at the time of this volcanic event, the iron molecules within the molten material oriented to the Earth's dipole accordingly. [55]

Then the lava cooled, transforming the material from liquid to solid. The iron molecules remained in that orientation, held in place despite proceeding transitions in planetary polarity. They'd become seized in time through the process of lava becoming rock.

This eventful materiality jostles atop a layer of sandstone – a base note of the Sydney Basin that becomes visible in between the pulses of waves at their lowest ebb. It's stained brown because of the iron that permeates the bedrock of this area.

Extinction lines

The South Coast train carries bodies from the Illawarra towards Sydney, and back again, on an hourly basis. The basic shape of the Illawarra constitutes a vast triangular valley, confined by a ridge of Hawkesbury sandstone deposited upon beds of claystone at the western edge. This edge constitutes the escarpment, oriented vertically to the lands and waters below. It has emerged through long-term erosion of geologic materials as they move inexorably downwards under the influence of gravity's unrelenting powers. *Down, down, down* tumble chunky blocks of sandstone as the pores of the weaker underlying claystone are engorged by groundwaters after rain. The collective underground movements of these subterranean waters produce hydrostatic pressures within the softer rocks. They begin to crumble. The instability relays pressures upon the hefty layer of sandstone above, whose structure is riven with multiple joints that then crack and tumble along with the claystone. *Down, down, down* – sandstone and claystone and dirt churn together as they cascade, shredding the vegetation that's slowly crept up to the sandstone's vertical reaches to exploit and thrive within a microclimate. Together this matter becomes beds of soil that settle at the bottom of the scene, becoming an admixture of earth in which future plant life might take root.

One of these landslips is visible from a window of our house. It happened in the darkness on 5 February 2012 when we weren't living there yet, and it marks the southwesterly face of Mount Keira – which is really called Geera/Djeera by the Dharawal and Dhurga people. The Dharawal and Dhurga inhabited, managed, sang, burned, painted, harvested, refreshed, balanced, shaped and stewarded the area since before the last ice age. Yuin creation stories document the rise in sea levels at the end of the most recent glacial maximus 20,000 years ago. Dhurga ancestors witnessed the Five Islands at Bass Point being joined to Hill 60 at Port Kembla, comprising a range of undulating hills before the coast was inundated by rising seas. [56] Eventually these islands will be further submerged as ocean levels rise again.

The view of Mount Keira/Geera/Djeera is continuously changing depending on the atmosphere – at times clouds pour over the edge of the escarpment and dematerialise the face of the mountain as thick belts of mist obscure it. Sometimes as the sun descends in the evening, its rays meet the rocks at the freshly exposed edge that tumbled away in 2012. The encounter between photons that have travelled 149.6 million kilometres, and silica particles that have been

suspended in the sandstone cliffs since the Triassic period, develop into a momentary shimmer – almost golden just before the sun slips away – that demands sustained attention.

Jump up 464 metres from here. We are on the top Mount Keira/Geera/Djeera now, standing at a lookout, which affords views of the entire stretch of land between Kiama in the south, all the way up to the headland where the escarpment meets the sea. The loose particles of sandstone underfoot make a gritty sound as the synthetic sole of my shoe skids a little. I'm mindful not to get too close to the edge, there are warning signs everywhere alerting me to the imminent instability of the ground below, even though it's been fenced off. One month this year a woman threw herself off the edge, taking her 2 year old with her in a murder-suicide. Similar sacrifices must happen here often as there are *Lifeline* signs installed near every verge telling people that '*there is still hope*'. From the perspective afforded at the top of the mountain the distinctive triangular shape of the landscape below is perceivable. In the south it's a thick wedge, in the north, as the sea and escarpment approach each other they meet at a headland – this constitutes the pointy end of the triangle. Between the pointy bit and the base of the wedge, all manner of formations

become visible: suburbs, tracts of bush, abandoned collieries, roads, factories, steel works, valleys, bridges, a lighthouse, freeways, docklands, car yards, waterways, electricity wires, Bunnings warehouses, stations, schools, other mountains, tunnels, railways, functioning coal mines, clouds, ocean, plumes of smoke, lakes, container ships, community halls.

There are things down there that are invisible too, like a memorial tree planted from a cutting cultivated from the ancient Moreton Bay Figtree tree that died in 1996. It was a sacred birthing site for the Timbery family over many generations before and after colonization and stood at the junction of three main dreaming tracks and became the namesake of the suburb of Figtree.[57] A plumber doing some work to repair the stormwater on our block remembers its commanding presence as a child. Located beside 'American Creek' its memorial replacement tree is now wedged between the Figtree Pub and a shabby motel, just off the Princess Highway. [58] The plumber told me about having seen the tree in his youth while trying to placate me about the fountain of water pissing out of a burst main accidently punctured by a crowbar. '*Don't' stress, it's only water!*' he exclaimed, amused at my heightened anxiety as I watched thousands of litres cascade

down the gutter towards the stormwater that funnelled into Byarong Creek. His familiarity with the stuff obviously made him feel at ease. 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 (un)do *anything*, given the right amount of time. It was water that gradually unravelled the once vertically oriented transantarctic mountains, carrying their loosened silica and zircon particles and deposited them to become the ground that we were standing on as the place of our discussion. Water has made this place and will make it again and again.

On the train now and moving away from the Illawarra.
We're rapidly approaching the triangle's pointy end. The sandstone face moves closer and closer as we head northwards. Closer and closer until – BLACK – the scene jumps from racing rock and dry schlerophyll eucalypt forest to darkness. The tunnel has arrived; inky obsidian behind glass. The tunnel was carved out a long time ago, to accommodate trains that moved loads of coal, which was here for even longer – long before the sandstone of the Sydney basin was deposited and before human-animals emerged on the scene.

The climate was warmer in those day, ages ago. Glossopteris forests thrived in swampy bogs while this landscape was still a part of Gondwana. Deciduous Connifers and Gingko trees prevailed, absorbing and metabolising the sun's relentless radiation and expelling oxygen while breathing carbon deep into their fibrous bodies before shedding their leafy materials for countless seasons. The rate of deposition out-paced that of decomposition and over long stretches of time the vegetal matter compacted into formations that fossilised over time. [59] Through the technologies of combustion developed since industrialisation, these materials have been transformed into fuel, as the 'relentless pulsations of solar energy which has been locked into them' [60] is released. This is the coal that forms the Bulli Coal seam, which was deposited in the Permian period and which sits directly below the hefty layer of Hawkesbury sandstone deposited in the Triassic.

The monotone view provided by the dense shadow of the tunnel is relief to my eyes, which just a second before had been straining hard across the escarpment's sandstone rockface, searching the surface for a change in colour from coal-black to sandstone yellow. This change delineates an extinction event that registers the temporal boundary between the Permian and Triassic

epochs 252 million years ago. It's evident as a line that holds the difference in colour between strata. At the end of the Permian, a period of intense volcanism from an igneous province in Siberia pervaded. Volatile outpourings of volcanic debris unsettled the balance between oxygen and carbon dioxide, precipitating runaway global warming bringing about the extinction of 90% of species living at the time. Scientists know this as the greatest mass extinction event on Earth, taking 10 million years for land-dwelling life to recover. [61]

Once inside the tunnel I turn to my smart phone and read excerpts from a recent report by the UN about how one million species are now facing extinction in the context of dwindling habitats and the accelerating climate crisis. The effect of multiple temporalities converging in the present moment presses heavy in the heart-mind more and more. We are still in the tunnel, moving through thick beds of sandstone whose presence is indebted to the volatile energies, copious and compacted materialities and unfathomable multi-stranded transformations occurring in the 'imperceptible passages of time'. [62] These have been compressed into the thinnest of lines persisting in the space between strata which moments ago were partially visible through the vitrified window of a moving train.

Balcony

It's 2019 and we live in West Wollongong now. The balcony of our house affords unexpected perspectives upon a corner of the Illawarra. Constructed in the 60s, its floor is lined with chocolate brown 'manganese' tiles, and decorative breeze blocks for the balustrade which are so far below regulation height that we avoid hanging out there due to the risk of G falling from the patterned edge. Nevertheless, glimpses of geologic, cosmic, atmospheric, biologic and anthropogenic events specific to the sandstone escarpment visible from this zone periodically provokes me to get out, and on it. These events, although listed separately – are not discrete at all – but deeply interconnected in ways that I'm just beginning to understand and more fully appreciate.

Take the bats. This summer just passed, a whole colony moved from the direction of the coast in the east towards the escarpment in the west. Searching out some delicious moist place where pockets of escarpment rainforest thrive and where luxuriant fig trees abound on southern slopes, they forage amidst deep persistent shadows that are totally inaccessible by the sun, whose rays can't infiltrate due to the simple physics of its pathway in relation to the escarpment's geographic orientation. I didn't notice at first because I was

watering some miserable succulents in pots, but G quickly alerted me. 'Bats!' she cried. It was one the first words she uttered in an ever-growing lexicon. Yes, there were bats, everywhere. *So many.* Hundreds. Thousands. Thousands silently moving from left to right, filling the sky with webbed wings, moving towards the shadows, the trees, the fleshy ripe figs holding thousands of seeds that, once digested and excreted, get distributed throughout other pockets of forest. Some seeds may take root in an unsuspecting open craggy joint in a bit of sandstone – and grow. But they're not simply bats, they're *grey headed flying foxes* and are regarded as a 'keystone' species whose presence entangles whole ecosystems, particularly because of their central role in forest propagation. [63] They form the central subject of Deborah Bird Rose's essay *Shimmer, when all you love is being trashed* in relationship to becoming endangered due to habitat loss across the eastern seaboard. That evening the whole communal body flew from dusk to dark, and so close to our balcony that I could detect the eyes of some individuals. I had a strong impulse to film them and planned to do so the next day, assuming that they'd return. Twenty-four hours later they passed again, but this time at a much greater distance. It was impossible to capture them on the video recording convincingly.

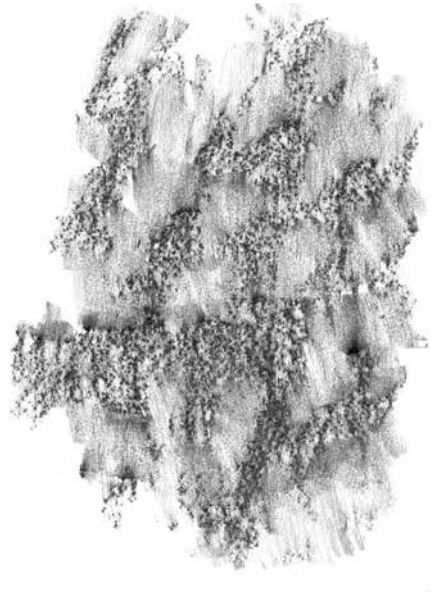
Take the winds. They are unique to the microclimate which is dominated by the sandstone escarpment. A combination of sea breezes from the Pacific, the 'gravity winds' pouring down from the tablelands, the 'slope winds', the 'Foehn effect' and the specific consequences of industrialisation connected with the Port Kembla steelworks mix together and hover here like a tired mist. It gets hemmed in by the monolithic sandstone escarpment to the west, and it can't escape upwards out of the valley due to the Foehn effect which functions like a cosy warm blanket that seals it all in. Then the photochemical pollution generated in Sydney – after expanding to fill and saturate the space available there – meets the geographic limit delineated by the Blue Mountains and starts to creep down south. It flows over the escarpment and mingles with the localised accumulations of particulate matter discharging from chimneys at Port Kembla. [64] Together they collectively compose a body of haze that smudges out all visual details at the rockface. By 4pm it's a big, lethargic, bluish blur. As a child I remember crawling into my parent's bed in the middle of a freezing Victorian winter's night on Wurundjeri land, insinuating myself into a slice of warmth that then became simply unbearable a short while later, compelling me to kick off the blankets. Some days the heat percolating in the valley feels similar. Stifling

towards becoming unbearable with nothing capable of dissipating it until dark falls and the cycle resets.

Take the moon. One morning we woke at 5:45am and opened the blinds. There it was, a full June moon, tracking on the last bit of the arc located at the bottom of the sky at the back of Mt Kembla/ Djembla. We watched it descend for 5 minutes, amazed at our luck of witnessing the momentary intersection of planetary and celestial bodies, as well as by how quickly it dropped away, and entirely vanished from view.

Take the lightning. The lightning that struck suddenly and violently and so close to our bodies that I felt absolutely lucky to be alive shortly thereafter. What was I thinking taking you out on the balcony as the storm blew in from the south west, rapidly obscuring Mt Kembla/Djembla and filling the valley with bewildering squalls of rain? I wanted you to see what a storm was like, to feel it and not be afraid. I'm convinced that the lightning sensed the presence of our bodies out there on the deck lined with manganese tiles. I unwittingly called it forward in my foolish wonderment and best intentions to show you something without you asking. It struck so close that my fingernails, the edge of your forehead, the corners of your eyes, the tips of the new banksia fronds growing in the terrace

below and the glossy patches of bitumen of the street further below that, were exposed in a way that cracked my sights open far too wide. Electric ultraviolet. It was like being forced to witness the impossible space of my head from the inside out. You screamed in a way I'd never heard before and you gripped onto to me with your entire tiny being like your life depended upon it. For an hour you continued to cling – silently – while the lightning discharged its massively overwhelming energies overhead, striking the eaves of the neighbour's house, destroying the power-board. I wonder if it might become one of your first memories?



Coal measures

At night I lay in the west-northwestern corner of the house. It's where the bed is located. Stillness takes over and I begin to hear something on the cusp of sleep. Recognising the sound wakes me. It's consistent and persistent. It's mechanical. It's distant but just close enough to discern. I thought at first that it was attributable to earthworks or roadworks in the neighbourhood, but I soon connected it to the local colliery discovered by chance on Google Maps, with the satellite layer turned on a month after moving here. Q: *'What's this huge black circle in the landscape not far from Mt Kembla?*' I wondered. A: *'Oh, its coal, remember?*' – the Illawarra is totally

underpinned by it – remember how it constitutes the layer that lies beneath the dominant Hawkesbury Sandstone? The metallurgical coal extracted here provides 60% worth of material for fuelling the fires that stoke the furnaces at Australia's largest steelworks at Port Kembla. The rest – the thermal coal – is utilised for energy production locally and abroad.

The coal measures are being extracted through 'long wall' processes at the 'Dendrobium South 32' mine over the hill. The guts of the mountain valley are being transformed from solid state to pulverised particles, assembled into a mound so large that you can zoom in from a smart phone and see striations fashioned on the surface by trucks moving the matter around. When the spring winds commence some of these particles are released from the heap and travel a short distance over the range to eventually settle throughout the suburbs of Figtree and West Wollongong on car ducos, external walls and sills of windows.

The longwall mining happens at 400 metres below ground, beneath the *metropolitan special area* which 'provides a buffer zone of bushland around catchment areas to protect drinking water' [65] adjacent to the Cordeaux and Avon dams. This makes Sydney the only known city in the world

to allow mining below its water catchment area. Recent reports (formerly withheld from the NSW Department of Planning) have detailed how the longwall mining in this area has produced subsidence, bulging and fracturing of the sandstone valleys above, opening fissures which allow for water to leak from the dams as well as from ancient peat swamps on the top of the Illawarra escarpment, also made from Hawkesbury sandstone. The company estimates that there are 114 million tonnes of material associated with the Bulli coal seam and they plan to extract it for the next 17 years, taking us to 2037; a period when scientists unanimously agree that we must be on a trajectory to reduce net carbon emissions towards *zero* to hope averting societal collapse brought about by climate crisis, of which we are now absolutely in the midst. Yet machines are busy day and night biting into dense crumbly fossilised Glossopteris forests deep inside the Kemira Valley. These subterranean churnings are inaudible. It's the rhythm of the conveyor belts in concert with the trains shuttling in and out of the colliery that are perceptible at night as soundwaves echo throughout the valley, bouncing off the sandstone cliffs of the escarpment above to vibrate through the glass panes of our thin windows. Sonic waves greet my head before resonating among the three bones of my middle ear – the clatter

rattles these ancient bones inherited from reptile ancestors which assist in the amplification of this disconcerting, foreboding sound.

Breathing & blood

Sometimes the sound of G's breathing at night overwhelms the conveyor belt. Sometimes it doesn't. *Are you still breathing? Of course you are, but there's also a possibility that you've stopped.* As breathing occurs the imaginary separation between life and non-life dematerialises. About the lungs at the centre of this performance Elizabeth Povinelli asks: *'Where is the human body if it is viewed from with the lung?* [66]

Sometimes the sound of sucking overwhelms the drone of the conveyor belt transporting coal from subterranean chambers towards the exposed pile in the valley. *I worry about the effect of exposure to coal dust, the stuff that's settled out there on the windowsill, on her immature system.* I immediately realise the absurdity of the neurosis. It's not simply the particulate matter that will do damage, but the effects of a systemic dependence upon energy fuelled by coal and other fossils to which we are so deeply indebted, and implicated. The heater is on, the phone is constantly charging, the computer's backing up this file on an hourly basis – day after

day after day … That I lay in this bedroom, in a house purchased in 2018, is partly owing to the small (geologic) inheritance I received when my paternal grandmother passed away and distributed some of the family's assets, which were accumulated through involvement with the petroleum industry since the 50s (I am as much the coal mine/oil refinery/steel works as she is). For decades I've fantasised about how my maternal grandparents, Hungarian refugees fleeing communism in the same decade – who ended up making Victoria their home – has somehow offset this fact.

The milk that G's drinking is the result of the current hormonal state of this (extra) mammalian body extracting proteins, fats and sugars from the blood supply under prolactin and oxytocin's commands regulated by a neuronal reflex loop stimulated by sucking. A vacuum is formed between mouth and nipple, forming a conduit through which saliva passes into the breast; its chemical composition communicates to the larger hormonal complex of my host-body which in turn responds, producing milk appropriate to her needs, dynamically. It's a process so much older than the one from which coal in the Illawarra emerged, having developed when the first animals moved from sea to land in the Silurian era 440-410 million years ago. And a third of that milk is

indigestible by her because it's the nutriment that's designed for colonies of bacteria deriving energy from the sugars in my milk: a microbiome thriving in her tiny gut.

At night we lay in the north western corner of the house. G is right beside me, attached to my left breast, suckling for the milk that's been produced from my blood. It's a position she's assumed since we were split into two, in the dawn of the morning after the hottest day on Earth. She's become the being I love most fiercely in this complex sandstone situation. The predictability of this declaration underpins the inescapability of our mammalian entanglement, remembering that this condition is haunted and supported by eons of countless other bodies. Just for now, we are enmeshed.

As she drinks, the smell of her head reminds me of apricots.

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Writing specifically about in/human entanglements: 'This is why the inhuman cannot [simply, merely] be a supplement to the human, because it has a queer genealogy – insomuch as it has innumerable sites of origins and an untimely disposition that interrupts the possibility of a genealogical account that is exclusively warm blooded – mammalian and thus introduces a queering into the field of normativity.'

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> 'The larger, massive biotic assemblage the lungs know intimately — including green plants, photosynthetic bacteria, nonsulfur purple bacteria, hydrogen, sulfur and iron bacteria, animals, and microbes — is now what is thought to produce the metabolism of the planetary carbon cycle, which may be on the verge of a massive reorganization due to human action. Indeed, the shift of scale entailed in the study of Anthropogenic climate change is what allows biologists to link the smallest unit of life and death to planetary life and death (the planetary carbon cycle). And this shift in scale allows the thought of extinction to scale up from the logic of species (species extinction) to a planetary logic (planetary extinction).'

IMAGES

Page 3: Rubbing made from sandstone retaining wall on the corner of Watson Road and Upper Fort Street, Observatory Hill, Sydney. Graphite and cartridge paper, August 2019.

Page 16: Rubbing made from joints between two sandstone blocks in a wall of the Queen Victoria Building, George Street, Sydney. Graphite and cartridge paper, August 2019.

Page 18: Rubbing made from a surface of sandstone eroded such that the stratigraphy is evident, Argyle Cut, The Rocks, Sydney. Graphite and cartridge paper, August 2019.

Page 30: Rubbing made from textured surface of sandstone blocks used to construct a survey marker/trig station trig in 1880 which was employed to calculate longitude and latitude, Observatory Hill, Sydney. Graphite and cartridge paper, August 2019.

Page 36: Rubbing made from sandstone block within a wall at the Hyde Park Barracks Museum, Macquarie Street, Sydney. Graphite and cartridge paper, August 2019.

Page 44: Rubbing made from a former bolt-hole, embedded within a sandstone pier used to hold the 'transit circle' telescope from 1877, which was employed to establish correct time, absolute co-ordinates of the stars and establish the Sydney meridian, Observatory Hill, Sydney. Graphite and cartridge paper, August 2019.

Page 49: Rubbing made from a sandstone step at the entrance to the Department of Lands building, College Street, Sydney. Graphite and cartridge paper, August 2019.

Page 54: Rubbing made from repairs upon the surface of a sandstone pillar which was part of a former gateway to The Domain, Hospital Road, Sydney. Graphite and cartridge paper, August 2019.

Page 64: Rubbings made from mortar joins between sandstone blocks in an anonymous building on the Argyle Cut. The mortar is made from pulverised shells that were exhumed from local middens (locations unknown) in the early decades of the colony by limeburners. Shells were pulversied, burnt and transformed into lime because there was no natural limestone present in the geology of Sydney. Fragments of shells remain visible in the mix, Argyle Cut, The Rocks, Sydney. Graphite and cartridge paper, August 2019.

Page 77: Rubbing made from roughly cut sandstone which bears the impressions of anonymous convict labour, on the side of the steps at Gloucester Walk, The Rocks, Sydney. Graphite and cartridge paper, August 2019.

COLOPHON

Sandstone is one of forty mineral recompositions
commissioned by A Published Event for *Lost Rocks (2017–21)*.

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For an expanded set of references that have informed this text, please visit www.biancahester.net and follow the links to Sandstone.

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Millions of years of evolution buried deep within the double helix of my body's biologic fabric were on display during those few raucous hours. Rock enveloped in reptile embedded in mammal. Moan.

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