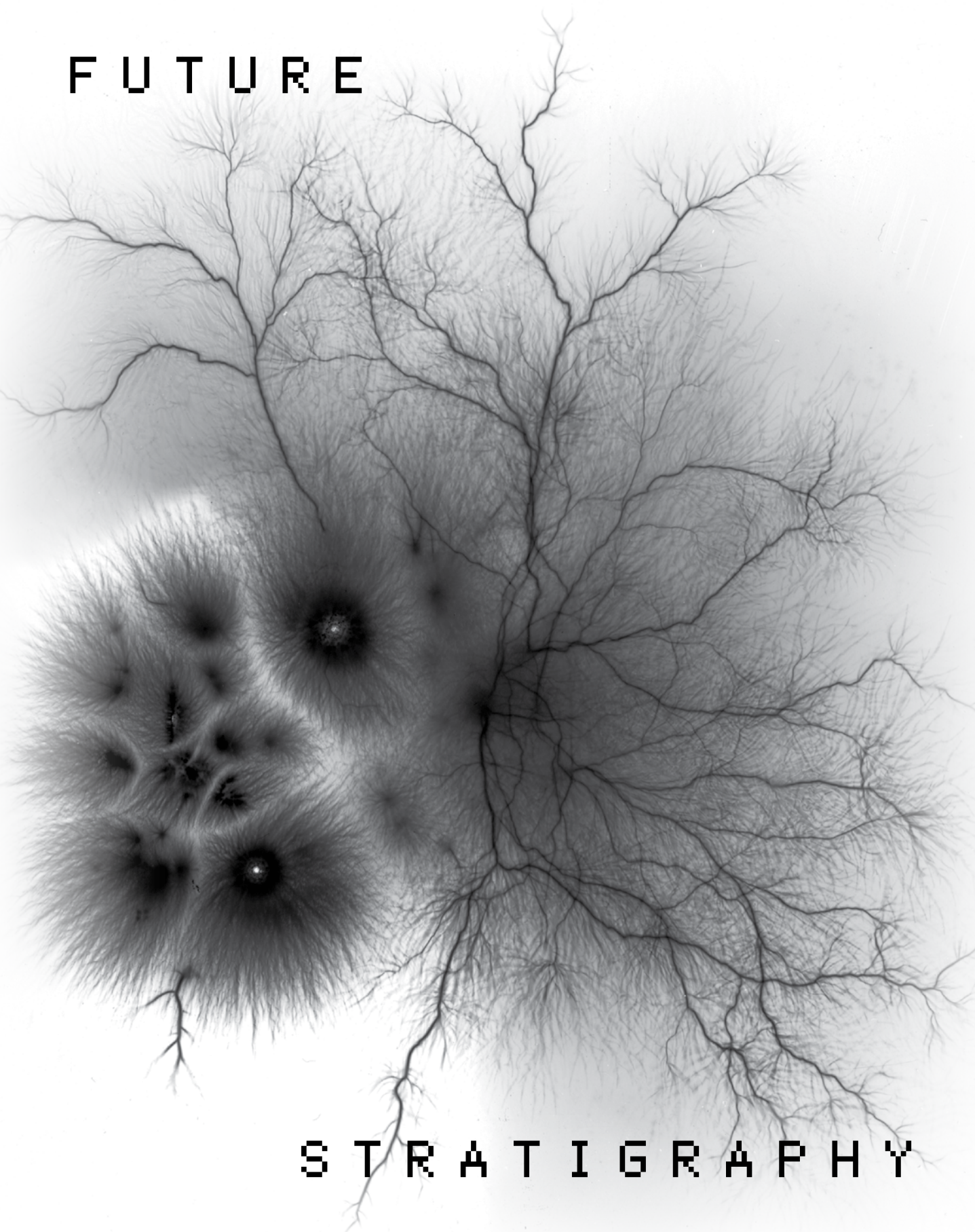
FUTURE



STRATIGRAPHY

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FOREWORD

Sydney College of the Arts is proud to present 'Future Stratigraphy', an initiative of the New Materialism in Contemporary Art research cluster. The 'Future Stratigraphy' exhibition and symposium examine the agency of matter within the geological record and draw our attention to the very site of this research event. Stratigraphy is the study of layers of matter accumulated on the surface of the planet through millions of years of geological and biological processes. Geologists, biologists and archaeologists study these layers to establish what has occurred in the deep and distant past. In the 'Future Stratigraphy' exhibition, sixteen artists consider the material processes of our contemporary societies – mining, mobile phone technologies, electrical transmission, fishing, garbage disposal – and ask us to imagine how these may reveal themselves in the Anthropocene and possible stratigraphies of the future. Amongst these artworks, and the research activities that inform them, are references to the layers of history at Callan Park, from its geology as an estuary of Sydney harbour and long history as a meeting place of groups in the Eora nation, then as a colonial estate, psychiatric hospital and now art school. When we look above ground we again delve into the subterranean, as approximately 45% of sandstone in the walls of SCA was quarried from the site. The cavity created by this excavation became the edifice for the water tanks underneath the Kirkbride complex.

In conjunction with the exhibition, we will further explore ways of understanding and envisioning the materiality of landscape, and the repercussions of human impact on the Earth. We warmly welcome John Roloff, a visual artist and professor at the San Francisco Art Institute, who will conduct the masterclass 'The Sea Within the Land' and present a keynote lecture at the Future Stratigraphy symposium. We look forward also to the contributions of Matt Poll, Curator at the Macleay Museum, University of Sydney, and Ron Boyd, Conjoint Associate Professor in the School of Environmental and Life Sciences at the University of Newcastle.

I also extend my sincere appreciation to the staff and volunteers who have ensured the success of the project. In particular, I thank recent PhD alumna Madeleine Boyd, for initiating the project, Oliver Smith, who heads the New Materialism in Contemporary Art research cluster, Jack McGrath for his technical assistance, Liam Garstang, Gallery Manager, and Mikhaela Rodwell, Research Manager. In addition, I thank the exhibition curator Kath Fries, and of course the artists and writers who have contributed their work to the exhibition and this catalogue.

Finally I extend my gratitude to Professor Duncan Ivison, Deputy Vice-Chancellor Research, for his support for practice-led research at Sydney College of the Arts.

PROFESSOR MARGARET HARRIS
ACTING DEAN, SYDNEY COLLEGE OF THE ARTS

FUTURE STRATIGRAPHY

BY KATH FRIES

To look down at one's feet is to feel, as well as see, one's connection to the ground and to the Earth. On one level it is simple enough to know that we are always standing on strata, on dense layers of rock, but to really engage with the multi-directional interconnected complexities of the Earth – both below and above the surface – it is important to re-think our entanglements of existence.

At Sydney College of the Arts we are standing on Gadigal and Wangal country. Standing here and now marks a vertical connection, a kinesthetic moment of being present with this particular time and place. We are not standing neutrally, there is always an impact and trace left behind. Humanity's current actions indelibly impact the Earth and the stratigraphy we are marking right now will either map a trajectory of destruction or a turning point of the Earth's future.

WE HAVE LIVED MOST OF OUR LIVES IN SOMETHING CALLED THE ANTHROPOCENE AND ARE JUST REALISING THE SCALE AND PERMANENCE OF THE CHANGE.[1]

Future Stratigraphy offers a slice of present time, an almost archeological gathering of work by artists critiquing the Anthropocene from within. These artists are engaging with the material agency of their surroundings, both metaphorically and actually. From rocks, soil, plants and fungi, to fire and water, metals and minerals, electricity and air, each artist's process is informed by aspects of science, cultural traditions and philosophy.

The term Anthropocene draws from the Greek *ánthrōpos (man/*human), and *cene*, from the current geologic period, the Cenozoic. The International Geological Congress[2] recently voted to proceed with formally recognising the Anthropocene as a stratigraphic epoch, an official span of geologic time. From the atomic bombs of WWII (referred to as the 'golden spike') to the post war boom that became the 'Great Acceleration' of fossil fuel combustion, the stratigraphic "marks of the Great Acceleration will endure, even if somehow humanity reverses global warming and gives half the planet over to conservation. And if humanity doesn't change course, then future stratigraphers might need to elevate the Anthropocene's rank in the geological hierarchy… An epoch would be thinking too small."[3]

The concept of the Anthropocene pulls all the evidence of environmental change together, recognizing the extent of human impact on the Earth - mass extinctions, destroyed ecosystems, polluted atmospheres, waterways, oceans and landscapes. *Future Stratigraphy* asks how our current human activities will reveal themselves in the layers of the future, by exploring traces and scars of human presence on Earth, and how we work with, exploit, understand and attempt to rehabilitate our planet.

PENNY DUNSTAN'S practice-led research engages directly with attempts to rehabilitate ex-coalmine sites in the upper Hunter Valley region. Her voluminous installation drawing, *PastPresent* (2014-15) conveys her experiences of walking and tracing these violently disturbed topographies. Her work scrutinizes mining companies' failure to make-good and to reestablish hospitable landscapes. Dunstan creates ghostly lumen prints with materials collected from these sites. Her samples of the ground are presented as *Soil Monoliths (2016), sections of* anthrosol: man-made-mining soils consisting of degraded rock from mudstone, waste oil, coal wash water with high salt content and sand.

Mining sites are deliberately obscured from public view and actual mined materials are often not seen. **SEAN O'CONNELL** experiments with the materiality of mined coal, chrome, mercury, iron, and uranium in *The Force of Matter* (2016). He works with direct imaging, saturating each ore sample with high voltage electricity over photographic negative films, to capture the sparks of their unique energetic structures. Energy is used at each stage of the mining process: to dig into the ground; extract the minerals; and in transportation and processing. O'Connell's images record not just the elemental qualities of these minerals but also the implied cost.

Electricity is always all around us, but usually invisible to us; we are not aware of it unless we flick a switch. **DAVID HAINES AND JOYCE HINTERDING** play with this phenomenon of invisible energy in *Encounter with the Halo Field, (*2009-15), as they sway pairs of fluorescent tube lights beneath electrical transmission towers. In this act of multi-sensory connecting, the hum of electrical energy is heard and the artists' hands grasp the unplugged tubes that we see mysteriously lighting up. Agitated by the transmission towers' electromagnetic fields, the atoms of mercury gas inside the fluorescent light tubes emit ultraviolet light, which hits tube's phosphor coating and makes the unplugged lights glow.

KENNETH MITCHELL is also actively listening to the materiality of the Anthropocene, querying the minerals and technologies that enable mobile phone communication and all contemporary digital technology. He works with silicon carbide, a mass-produced synthetic composite mineral, which includes silica extracted from sand and quartz, one of the most common minerals. In *Crystal Amplifiers* (2016), Mitchell uses a quartz crystal as an amplifier, reconfiguring the 1930's Adams crystal amplifier with contemporary computer circuitry and requisite elements of silicon carbide. These minerals transduce modulations of energy into electricity and the resulting sound is physically amplified by the quartz crystals, into a speculative, revelatory voice that connects the listener back into the Earth, to the invisible subterranean origins of these minerals that underpin the communication of our everyday lives, saturated in technology.

The silica mined from ocean beaches is redirected to a variety of human uses, including silicon carbide in smartphones. In *Sands of Time* (2016) **MADELEINE BOYD** employs the everyday practice of snapping photos on one's smart phone to be immediately shared in the digital ether. Presenting her quasi-scientific documentation of Queensland's Burleigh Beach on a smartphone within a Google Cardboard virtual reality frame. Boyd mimics beach stratigraphic observation methods, collating images of changing sand formations, scientific diagrams and subjective responses to patterns, found objects and anthropocentric daily living. These images become layered technological experiences of media sharing forming stratigraphic perceptions of life-matter.

A similar process of patiently watching and documenting natural changes through a viewfinder, frames the time-lapse video *A Tree is a Living Thing* (2010). **TIM COLLINS AND REIKO GOTO** focus on a large Elm tree, set against the Aberdeen City skyline, as it changes with the weather over the course of a day. Accompanied by a voiceover speculating on the production of aesthetic truth and the distribution of creative freedoms, the work explores notions of value, science, nature, aesthetics, and empathetic exchange.

The value of trees and the enchanting complexities of forest ecosystems are explored in **KATH FRIES'** sculptural installation, *Within and without* (2016). When access roads for logging trucks are slashed into forests, the less obvious fungi mycelium networks underfoot are also severed, with ominous repercussions for the biodiversity of the soil, plants, trees, insects and wildlife. Echoing recent scientific research into Mycorestoration, a process in which *Pleurotus ostreatus* (oyster mushrooms) are used to rehabilitate abandoned logging roads, Fries invites viewers into embodied experiences with these processes — to touch the logs, smell the beeswax and watch the mushrooms grow.

Many plant species have been pushed to the edge of extinction by human impact on fragile ecosystems. Some have existed on Earth for millennia, well before humans evolved; the species now diminished beyond the possibility of propagation are termed Living Fossils. **EMMA ROBERTSON** collaborates with botanists to research and articulate narratives of such critically endangered flora. Her extended use of drawn layers, indicative of the passage of time, expand into physically altered and re-layered paper-cut pieces suggestive of both evolution and extinction. In *The Archaeology of Absence* (2016), falling seeds of endangered plants are trapped in the strata of human environments, struggling to survive.

In much the same way as seed banks attempt to forestall flora losses, forming an optimistic type of insurance against climate change, imaginative conjectures about human survival prospects are constantly proliferating, particularly in relation to rising sea levels. **JOHN ROLOFF** has been speculating about future nautical navigation across specific flooded landscapes in *The Sea Within the Land* (1998-2016). Using sonar-scan technologies to simulate oceanographic bathymetric scans, he maps how current coastal cities may look in the future. Roloff calculates these predictions using scientific estimates of a full meltdown of all glaciers, which would cause a rise in sea level 80 metres above the contemporary mean. This data is then creatively re-interpreted to imagine how humans, plants and animals will move within, and engage with, this changed future landscape.

Saturating global maps with the impact of rising sea levels, **TRACEY CLEMENT** charts how the whole world is drowning and what this may look like in the future. Her labour intensive drawing processes in *Critical Cartography (2014-16),* emphasise that this alarming situation is not happenstance; it is a direct repercussion of humanity's concentrated actions, we are all complicit in creating the current climate crisis.

Communicating the trajectories of climate change is also the central concern of *Jubilee Venn Diagrams? (2014),* **JOSH WODAK'S** video portrait series. Standing in waist-high water each person enacts diagrams of climate change data, tracing horizontal and vertical trajectories. There is subtle coding: red denotes global average temperature, green indicates greenhouse gas concentration in the atmosphere and blue represents sea levels.

Low-lying coastal regions, such as the Mekong delta in South East Asia, are particularly vulnerable to rising sea levels. In *Oscillation & Invasion: Temporalities of the Mekong River* (2016), **ELAINE GAN** considers the multispecies that inhabit and shape this river region. Fragmented images prevent the viewer from seeing any singular species in its entirety, from the humans in the floating market; to rice, the main crop of the Mekong delta threatened by rising sea levels; to water hyacinths, an invasive species that now covers most waterways in the Mekong; and a giant catfish, now an endangered species in this area due to overfishing.

Rivers flow into the ocean and carry with them an assortment of non-biodegradable Anthropogenic waste, which are often caught by a system of circular ocean currents and condensed into the Great Pacific Garbage Patch, an expansive thick soup of micro-plastic particles. The escalation in global consumption of plastics, made from fossil fuels, confronts the viewer in **DELL WALKER'S** *A Growth Economy* (2016). Bulging into the gallery space, this uncontainable mound of salvaged polystyrene foam packaging (aerated plastic) was destined for landfill, where it would survive longer than the soon-obsolete objects it was designed to protect. Capitalist growth economies see little financial gain in recycling, and subsequently massive garbage dumps continue to be filled and indelibly mark the Earth.

Garbage incinerators equally contaminate the air, scarring the Anthropocene with our bury-it-or-burn-it waste habits. Fire, even when contained inside a building, is difficult to control. The frequency of devastating wild fires is symptomatic of climate change; as summers become longer the fire season extends, conditions are drier increasing fuel for bush fires, and lightning strikes multiply as thunderstorms become more severe. **BRYDEN WILLIAMS'** *Fire Sprinkler above Camp Fire* (2016), may suggest feeble human attempts to respond to climate change in our uncoordinated efforts to individually put out each spot fire. Williams' interior, architecturally-bound fire protection sprinkler is displaced and out of context when installed outside over a campfire. However, campfires invite contemplation, perhaps to reflect on the absurdity of first fueling climate change then trying to control it.

Soot, air pollution, radiation, micro-plastic particles, mining, mass extinctions and immense human population growth; now mark the initial strata layers of the Anthropocene. But this may yet prove to be a pivotal time where our concern for ecological crises and creative thinking changes the course of not just humanity's, but the Earth's future.

KATH FRIES IS A SYDNEY BASED ARTIST WHOSE PRACTICE IS CONCERNED WITH EMBODIED ENCOUNTERS WITH MATERIALITY, ECOLOGIES AND SITE. SHE IS THE CURATOR OF *FUTURE STRATIGRAPHY* AND A PHD CANDIDATE AT SYDNEY COLLEGE OF THE ARTS.

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WALKING WITH THE STRATIGRAPHIC GAP

BY BRONWYN LAY

EARTH.

"LET US AGAIN PRETEND THAT LIFE IS A SOLID SUBSTANCE, SHAPED LIKE A GLOBE, WHICH WE TURN ABOUT IN OUR FINGERS. LET US PRETEND THAT WE CAN MAKE OUT A PLAIN AND LOGICAL STORY, SO THAT WHEN ONE MATTER IS DESPATCHED — LOVE FOR INSTANCE — WE GO ON, IN AN ORDERLY MANNER, TO THE NEXT."
— Virginia Woolf, *The Waves*

I want to walk home – in my own time, at my own pace. I want to get to the bushblock where I was born at Australia's end, because it does strange things to me. A few years ago I visited its bracken and big gums. As soon as my body moved into the tiny gully, and my feet stepped onto the red rich soil, I was dizzy. My blood rushed: screaming to get out of its skin and sink into its childhood friend. I leant against a gum to avoid falling. I didn't understand what was happening. Cognition told me it was just romantic tendencies. Or was it a bond I'd forgotten?

As I write the Jura strikes a line against the sky. I live in France, under limestone mountains that unearthed a geological epoch – so walking home is an anachronistic desire. Scientists confirm the Anthropocene. The Jurassian remains underfoot. In this place I'm asked to connect 'tectonically'.

"THE PHILOSOPHER'S HARROWING AND JOYOUS TASK IS THAT OF COMPREHENDING AND EXPERIENCING THE BONDS OF VIOLENCE AND LOVE THAT UNITE US IN OUR SPACEWALK TO THE SPACESHIP MOTHER EARTH."[1]
— Michel Serres

I'm half an Earth and many geological epochs away from home. I experienced flesh and matter that communed in my childhood reunite for a chat but now I'm old and understand blood and soil are violent fictions of state and war. Fictions rule and humanity loves to mix up narrative, biology and geology. I'm not immune from the temptations of my species. Is there a rock hard truth beneath the surface?

What about tectonic bonds, connections and linkages? Humans live within the detritus of stratigraphy, on its outskirts, and our tectonic bonds are increasingly perceptible as we dig further into the layers. Knowing these bonds exist, can I walk home? Mary Zournazi eloquently notes "we only ever acknowledge language and convention; and when language boils down to convention and contracts without soul or connection, we create stories about places and things, rather than with them. We do not see what we encounter in this world; nor are we able to comprehend it."[2] The childhood connection with soil might be overwhelmed by the mutual tectonic weight of humanity and geology.

It's a long time since the sea was here, but the geologic folds of the land-locked Jura still reveal marine inheritances. Yesterday a child came to me with a river rock in her palm that she'd scooped from alpine water. It was imprinted with ancient sea coral from thousands of years ago. The tectonic rises to meet us. The structure of the Earth's crust and the large-scale processes that take place within it are measured and articulated by stratigraphy, the investigation of the order and relative positions of strata and their relationship to the geological timescale. Serres's words return: "Ordering is a falsification of the real, which has disorder as its fundamental and prevailing feature, and that, consequently, there is no ordering without violence, exclusion, injustice and sacrifice."[3]

Can one walk tectonically? Can humans comprehend stratigraphy? Imagine walking home, feeling the distance and proximity and being within the intensities of material relationality that reside between the Jura and that place now called Australia? Imagine stepping with geologic time and making like Gondwana drift can still lead the way. Imagine diving into layers of rock histories that led to the Anthropocene. Imagine drifting with erosion and sediment adjustment. I want to feel it – because I definitely cannot think it.

Earth remains a totality that won't go away and walking its curvature to get home inspires. Earth is one planet suspended in a universe within many other universes but for humanity, it remains an uncontested eternal truth. Bound by atmosphere, for the moment humanity remains anchored to its movements. Earth is a monolith that dissolves into humus, soil, sediment, rock, iron and lava, and for humanity is the only stable home.

Time has compressed horizons. Out my window the Jura watches over its child on the other side of the lake. Geologically a teenager, Mt Blanc struts its height with hubris. The Jura sits upon time like an old lady keeping secrets safe. She seems kinder to humans, but then again nebulous nature, deep Earth, has a poetic temperature that raises archaic blood. Earth is originary: the course of geocentric fantasies. More than seventy years ago, Hannah Arendt wrote, "The earth is the very quintessence of the human condition."[4] Now, in the human-declared Anthropocene, here we are – plastic, concrete, rubber and oil – walking through Earth's depleted skin as the boundaries between the human and non-human melt to polluted air. But we remain moved, connected, bonded – and might get dizzy upon being at home, where-ever we are.

If I walk home I'll remain on Earth's outskirts, stuck in the thin slip of oxygen that determines humanity's continuance. Can a small human body absorb the geological, historical and technological stratigraphies that bubble below? Can I listen vertical as I walk horizontal? This crazy pilgrim's desire belongs back with Romantic monastics. Nuts? Impractical? Then how did 'I' get here? Isn't that the crazy bit?

S O I L .

PEDOSTRATIGRAPHY IS SOIL STRATIGRAPHY: THE STUDY OF THE SPATIAL RELATIONSHIPS AND IMPLICATIONS OF SURFACE AND BURIED SOILS.

The Earth's critical zone is the heterogeneous, near-surface environment where complex interactions of rock, soil, water, air and living organisms regulate the natural habitat and determine the availability of life-sustaining resources. Despite our best efforts, the exosphere remains uninhabitable for soil and humanity who are condemned by biology to live on Earth's rim. The critical zone is the sole geological realm of the universe where humans can operate and live. The catalyst of life, soil allows plants to capture sunlight and convert solar energy and carbon dioxide into carbohydrates, which in turn power terrestrial life through the food chain. From this biological base camp emerges habitat, culture and power.

Soil is where Earth and breaking tectonics penetrate and connect with humanity. Moving from the monolith of Earth, to the substance of soil, we become more intimate with home, the site of nourishment and flourishing. For the human body, Earth remains an imagined community, but humans digest and touch soil. Soil's vulnerability and complexity provides what Aristotle called our basic, most necessary nutritive bond. If earth is a synonym of soil, then unlike the other fundamental elements of wind, water and fire, it's the easiest element to dominate. It's closest to our bodies and can be held in fist.

I want to walk back to soil that makes love with my blood. Even if it's a homo sapien fiction of feeling – I don't care. Soil (with its friends in the critical zone) contains threshold encounters between rock, earth, bacteria and air. It's the connection to deep geology and it's there I want to make poetry and art and mix up mediums until they sing. Soil creation narratives refract across continents, disciplines and substances. The bacteria that create soil make Earth habitable. They filter, cleanse and convert the dead into nutrients that feed new life. As a translator of geological interiority, soil is fertility between rock horizons, and regulates the transfer of elements from inside the Earth to the surrounding atmosphere. Gravity moves soil into erosion. In an eternal battle between erosion and creation, natural desedimentation works to destroy land that dares ascent above sea level. It weathers away at geological forms and creates deposits, where rocks arise and then disintegrate into soil. David Montgomery positions soil as the interface between geology and biology, between tectonic plates and bacteria, and the conversation in between.[5] Darwin's last book described the fundamental role of earthworms as geological agents for the transportation of soil. Darwin described isostasy, the process through which erosion removes material and draws rock upwards into the critical zone for more soil production. Isostasy is life and non-life creating – it gives and takes away habitat and even the smallest of organisms are agents of its movements. Rocks give birth to soil. From the sterile hard emerges the fertile soft.

On the walk, if go at my own pace, in my own time, many cultures and layers will be traversed. Legs and technology enable humanity to glide through stratigraphy to get where we desire to go – even if we know not what is ahead and less so below. Flying annihilates comprehension. It's easy to believe the spatial relationship between home and Jurassian inheritances is 24hrs in an airborne tin can. It absolves me from connecting with the terror humanity plays with below, and brings complicity by filling atmospheres with CO2. Trained as a lawyer, I want to leave that discipline behind. But if I walk home I cannot escape legal fictions. They'll rise up to meet me. Human law will confront me with borders, checkpoints and the markers of enclosures that have intensified ever since fields were cordoned off. It'll confront me in dams, mining and energy extraction – in the permissions humanity gifts itself to penetrate Earth. Partitioned landscapes will greet me: militarized barbwire walls, agricultural cuttings and war. Apparently I'll walk through the Capitalocene and Technosphere to get there. The direction has been penetrated.

If I walk geodesic distance, as the crow flies, I might pass through Syria, Iraq, Iran, Pakistan, India and Myanmar. While each species has its own distance, crows have never flown linear. Topographical barriers, the spillage of tectonic memories, will block my path. Human identities and conflicts now take on geological proportions and can't be meandered through. Considering geopolitical reality, walking means losing my identity, subjectivity and perhaps my body: they'll be confiscated or perhaps blown up. It's too dangerous to walk through war zones and climatic catastrophes.

In Malaysia I'll meet the sea. Maybe I can toss the river stone back into its original home? The mantle will withdraw from my feet: earth will drop away and go submarine. Humans skim any surface presented because we've tools and materials to manipulate space and substance. A cargo ship, raft, canoe, the Queen Mary – we glide over layers, over stratigraphy. It's interesting imagining traversing territories and oceans, but statistically probable I'll get lost, maimed or die. If I walk home – I cannot walk home: my species, culture and biology confine me.

Walking will require translators: geological, poetic and linguistic. Science translates geodesic distances, tectonic invisibilities and atmospheric imperceptabilities. These translations enable me to feel the bonds and connections of Earth's movements, its scale and temporality, that my species have trouble getting. I want to be a relational traveller so art, religion, dance, culture are translators that can bring the incomprehensible towards the reality of bonds and connections. They ask humanity to respond to what is not articulated otherwise. Translations will twist and shake upon the journey – dissolve my assumptions. At least I hope so.

D I R T .

A GAP OR MISSING STRATA IN THE GEOLOGICAL RECORD OF AN AREA IS CALLED A STRATIGRAPHIC HIATUS. IF CAUSED BY EROSION IT IS CALLED A VACUITY.

In the 1980s, after a long bushfire season, histories of erosion, and a drought beyond suburban frontiers – land lost gravity. A giant dust storm hit my city. From classroom windows, we kids pinned our noses to the glass to watch a dry tsunami bear down from the sky. The land's skin, desiccated topsoil, killed the sun and dust filled every spare space of air. Gobsmacked, we huddled together as teachers ran along corridors to slam doors, close windows and throw blankets against cracks. We kids jumped in excitement at the suspension of lessons, then sat like wide-eyed cicadas as a red horizon swallowed us whole. Asthmatics lunged for phones and ambulances. Particles penetrated car engines to render them redundant. Landscape fragments flew over skyscrapers and fell on open faces. Dust reigned that day. It changed the horizon's alignment, and its silent power suffocated cosmopolitan buildings in a thin film that lasted for weeks. That day I met the power of dirt that had lost its place, was unable to be held in hand any longer. Broken bonds made their way into everyplace. As I write, sandstorms lift from Syria and carry dust across Lebanon, Israel, and Palestine. The destruction of soil through war and climate change combine until substance transgresses hard-held territories. Bombing slows down, airports close, and homes are soaked with stubborn dust. The air shakes with immanent violence. The earthquake becomes particular. The tips of stratigraphy are unsettled and on the loose: the layers have hit the air.

There was once faith in the solidity of Earth, until a volcano or earthquake violently reminded humanity otherwise. Once there was solidity of the subject – until humanity got so big it weighed the same as Earth and everything melts to dust. If I walk from here to there – subjectivity will be shredded. 'I' won't matter at all. Walking with geo-relationality, and drifting through symptoms of dust storms, there'll be encounters with humanity's hysteria as it struggles to find common language for the psychic wounds, attachment disorders and recognitions that reside within stratigraphy. Can we ever comprehend? Can we ever 'get' our dependent bond with rocks? Humanity falls into fault-lines without knowing it.

F U T U R E F O R E N S I C S

Is the Anthropocene a stratigraphic gap: a break in the continuity in the sequence of geology? Is the future a hiatus? Stratigraphy disturbed? "Changes to the Earth system that characterize the Anthropocene epoch include marked acceleration to rates of erosion and sedimentation, large-scale chemical perturbations to the cycles of carbon, nitrogen, phosphorus and other elements, the inception of significant change to global climate and sea level, and biotic changes such as unprecedented levels of species invasions across the Earth. Many of these changes are geologically long-lasting, and some are effectively irreversible."[6]

Some call the Anthropocene a crime scene: the violent triumph of the economic imperative. In this context, geological science disinters. It takes the place of interment, the grave, and instead exhumes and unearths evidence of violence. What future forensics will be tossed from the layers below into the present? What translators can articulate the responsibility, grief and complicity to be witnessed? In the Artic anthrax rises from the melting ice layers to meet the intensities of military vaccine enforcement.

Humanity increasingly glides over death. An archeology of exhumation might be the future stratigraphy: a sifting through corpses of coral, refugees, rusted ships, cables and contaminated plants. As I walk I can remain on the surface: in denial of the future geological corpses. Humans can't kill time or rocks? We still cannot comprehend that possibility. We're too small? Nevertheless here we are, humanity weighing into geology with tectonic proportions. I just wanted to walk home?

The place I was born is the first strata of my becoming: hidden under layers of desires, histories, ingestions of other soils and remains a strong bond. If I felt dizzy upon encountering the critical zone of my childhood – contact with the stratigraphy of geology might just kill me. A single human life trajectory cannot meet the scale of stratigraphy. It cannot meet the agency required to stop the violence.

I wanted to walk home where the rainforest soil was sweet and ferns and gum trees know me. I wanted to walk towards my beginning where there were no adults and sunlight was a friend. In the erupting stratigraphic storm, to skim the curvature of earth and go home is impractical. Being with geology asks I tunnel through Earth -penetrate the layers – witness what's silent and obscured from the harsh light. To go past the tectonic and pass through the Earth's core is definitely a science fiction voyage, but one humanity has commenced. Forsaking the imagination of walking through the critical zone, going down, deeper beyond the Jura, seems reasonable option. Who knows?

I might end up on the other side of geology – where the biology of soil and blood are friends. But first there's penetrated Earth to discover, and the absolute certainty I'll die within inhospitable stratigraphies.

Is the miniscule bush bond, a minor feeling of connection and relations, vital enough for me to walk home? Nup. It's bigger than that now. But that bond remains a translator, connection, impulse, artistic motivation and possible point of comprehension. It won't vanish until my body drops dead to join ancient memorial layers – until then...

DR BRONWYN LAY IS A WRITER, LAWYER AND CREATIVE DIRECTOR OF THE DIRT FOUNDATION. SHE GRADUATED FROM THE UNIVERSITY OF MELBOURNE AND COMPLETED HER DOCTORATE OF PHILOSOPHY AT THE EUROPEAN GRADUATE SCHOOL. LAY CURRENTLY LIVES IN FRANCE AND WORKS AS A LEGAL CONSULTANT FOR INTERNATIONAL NGOS. HER FIRST BOOK *JURIS MATERIARUM: EMPIRES OF EARTH, SOIL, AND DIRT* HAS JUST BEEN PUBLISHED.

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ACCUMULATION

EROSION/

INCURSION

BY MADELEINE BOYD

Future Stratigraphy diffracts scientific inquiry through art practice to purposefully map emergences; it is a concept, a process and a methodology. Layered voices form a stratigraphy of writing, signalling erosions, accumulations and incursions in human-with-nonhuman encounters. Matter-memories are set down, covered, raised and eroded. Gilles Deleuze presaged the new material turn with geophilosophy that mapped psyche to strata.[1] Stratigraphical science categorises the material substrates of the Earth and deciphers material evolution over deep time. The instigation for the *Future Stratigraphy* project was an encounter with the AnthropoScene[2] facilitated by Scotland based artist duo Tim Collins and Reiko Goto.

DURING A HUMAN LIFETIME, MEMORIES SUBSIDE THEN BECOME EXPOSED AT SIGNIFICANT MOMENTS. MY FATHER'S EARLY RESEARCH IN THE 1970S DOVETAILED HIS PASSION FOR SURFING THE NORTHERN BEACHES OF SYDNEY WITH STUDYING FORMATIONS IN THE SANDS BELOW THE WAVES. HIS PASSIONATE DOCTORAL WORK LEAD TO AN EXPERT UNDERSTANDING OF THE WAYS IN WHICH SEDIMENT IS LAID DOWN IN SPECIFIC LOCATIONS AROUND THE PLANET ACROSS NEAR AND DEEP TIME. AS A CHILD I WAS FILLED WITH FEAR AND WONDER EACH TIME THE CAR STOPPED ON NARROW CLIFF-SIDE ROAD SO THAT A DETAILED LECTURE ON ROCK FORMATIONS COULD BE DELIVERED. "THERE YOU CAN SEE AN OLD RIVER BED," HE WOULD SAY POINTING TO A SERIES OF SOFT CURVING LINES LIKE A SMILE ACROSS THE BEDROCK, AND "HERE YOU CAN SEE THE CHANGING DIRECTIONS OF THE SAND AS IT WAS LAID DOWN QUICKLY" WITH SLICING HAND GESTURES INDICATING PARALLEL LINES MOVING LEFT THEN RIGHT AS YOU GO UP THE CLIFF FACE. THESE PROCESSES HAD OCCURRED HUNDREDS OF THOUSANDS OF YEARS BEFORE OUR MAMMALIAN EYES EVOLVED. YET THERE WE STOOD, DEFTLY DECODING A PLANETARY LANGUAGE IN COMPRESSED MATTER AND MARKS.

We can speculate about future remains through the keen perception of rates and modes of accumulation and through erosion and change in the material make-up of the substrate of existence at any moment in space-time. Looking back, and far back, as if on a roller coaster carnival ride we could stop at points in space-time to observe. Vast swamps heaving with biotic life, meteoric dust chocking the sunlight, and more recently uranium particles settling like sugar coating across the planet's surface after early bouts of nuclear testing. These are all stops on the ride through deep to present time, as told in narratives of stone. Yet a snapshot of the strata at any current moment in time cannot be read as a strictly vertical library due to the disruptive influences of erasure, seepage, upwelling and massive events. A Deleuzian rhizomic model of evolution is comparable, by which mutational events and renewed expression of dormant genes affirm the kinships between distant cousins, and lends hope in dying worlds for unexpected resilience.

There is a burgeoning philosophical interest in anthropogenic influence on global systems. Artists too tap into these ideas, investigating: perspectives of materials; deep time and geophilosophy via studio practices; scale and intention that are more-than-human. Geophilosophy, or the geological turn has sprung from the observation of processes and the substrates of existence.

Philosopher Jussi Parikka[3] and artists Douglas Kahn and Paul Thomas make much of the micro-material and energetic components of technology. Their work tracks the geopolitical meanderings of minerals from war to peace and back again by territorialising space, place and bodies. Geopolitics 'grounds' dialogue in justice, from the dumping of e-waste in African nations, to the conflict over Lithium deposits in Afghanistan. Art practices in this geo-genre foster contemplation of intricate lifecycles of matter in relation to fluctuating scales of time across human lives and mountain ranges. With her artwork *The Sixth Shore*, 2012, Perdita Phillips invited human participants into a geolocated sonic experience that augmented their su(pe)rficial traversal of the shores of Lake Clifton in the Yalgorup National Park in South West Australia.[4] Data recordings and sound bytes from the lake along with information on the deteriorating biodiversity evoked an alchemical fusion of material-affect with speculative space that opened up possibilities of selective futures. In millennia to come only eroded landscape and fossilised thrombocytes will remain or indeed perhaps inhabited by unfamiliar life forms. Sara Morawetz subjected her body to living in sync with a celestial body at a distance to enact her celebrated work *Time on Mars*, (2015)[5]. This durational happening occurred within a gallery in New York, although the mundane patterns of sleeping, waking and other human activities were guided by the turning of Mars. Morawetz lived this alien life for approximately 37 Earth days until a fleeting temporal synchronicity



IMAGE 1.
GLENN BARRY, LOOKING AT THYME, 2016, ACRYLIC PAINT AND SAND ON CANVAS.
IMAGE COURTESY OF THE ARTIST.

"Through my collaboration and interactions with other artists in the South Straddie Camp Art Exhibition 'Shifting Sands', they have provided a re-membering or a way to join the pieces of memory together. The experiences from the 2016 Indigenous Artist's camp on Straddie Island are physical - like sand falling through my fingers. Referencing when sand is refined, it can be turned to a solid in the form of glass or even a mirror. I feel the growth of my core being gathered or solidified together again. Recollecting the scattered sum of the parts to reunify, to refine and become one piece again - to utilise and share. I am healing. I am whole. Through my *Moeity, my clans, my blood, my spirit, my ancestors - I am continually renewed into the real person that I sense that I am. This process allows this new information to build with understandings along the way. The painting called "Looking at Thyme" refers to an egg timer or timepiece. It shows the sand stuck in time, place and space. First Nation people deal with differing time/thyme in our society. Some call it "Murri time." Unable to move freely, or autonomously, the timepiece, has been trapped in time." Glenn Barry (2016). Born 1964 Sandringham, Victoria with connections to Gomeroi Country.

allowed her to make 're-entry' and return to Earth time. Her endurance piece recorded in a blog and letters to a NASA scientist demonstrates the effects of time when you look past a planetary frame of reference.

Glenn Barry's painting *Looking at Thyme*, (2016), is a product of discovering his personal Aboriginal identity and heritage through art practice on the shores of Stradbroke Island, Queensland. Along with cultural symbols the painting depicts an hourglass and is rendered with adhered sand. Barry's painting and the text he contributed below quickly reminds a Western-centric viewer that materiality and deep time are an integral part of Indigenous Australian perspectives.

Future Stratigraphy suggests a timely artistic approach, 'methodologies by which studio arts can engage the sciences'. Scientific stratigraphic research employs physical, observational and sonic/energetic epistemological processes. Core samples are similar to up-scaled apple-corers, relying on diamond bits to drill down through the layers. The central stem of this machine extracts tubular samples of matter, from tens of meters under the surface (Image 2). Seismic diagrams are drawn by machines reading energy waves reflected from acoustic pings, with patterns indicating densities and angles of matter (Image 3). Rocky outcrops are mana to geologists who trek distances into remote landscapes to read the stories they tell. Lifted from the surface by tectonic forces or incised by rivers, these faces are Earth's secret diary exposed. Artist D.V. Rogers, with his *PIEQF shake table*, 2008 engaged geological interpretation through machinery as he harnessed data from the US Geological Survey to create with Earthquakes.[6] Installed at various locations, the large machines shook in response to Earth crust movement in geo-active areas such as California. These installations evoke a telepresence for and lend appropriate voice to geological bodies.

Art-based interpretations of big data are popularising rapidly. During 2015 MoMA senior curator Paola Antonelli curated an exhibition titled *Data Visualisation* in Seoul, Hong Kong, and TED talks host a stream titled 'Art Made of Data'. Geological data interpretation has developed with an intriguing history of visual and categorical interpretation closely tied to the arts and humanities.[7] Image 3 shows a raw Seismic diagram along with an expert visual and textual interpretation by Prof. Ron Boyd. What the human eye could never see *in situ* is revealed in the data to the trained interpreter. These images are highly specialised and sometimes read like abstract paintings or Dada collage. Here at sites of more-than-human scales artists can rework data to collaborate on meanings, and perhaps re-map territories towards material-justice. Stratigraphy is the keystone lens for determining whether anthropogenic activities will be interred within stratigraphic records of deep future time, or be subject to total erasure by compression, heat and erosion. Archaeology contributes evidence on the stratigraphic signatures of human remains. Jo Stirling explored this idea with her *Modern Midden, (*2015),[8] series of immersive installations featuring



IMAGE 2.
CORE SAMPLE WITH INTERPRETATION.

"This is a core of the Carboniferous Morrow Formation from Greenwood County Kansas from 4550 feet below the surface. It shows a marine mudstone from the continental shelf that gradually coarsens upward into a bioturbated shore face. The shoreline then migrates through this area and a river channel with cross-bedded sandstone flows across the shoreline, marked at the base by a sequence bounding unconformity. Top is at top left; base is at bottom right, " Prof. Ron Boyd, 2016.

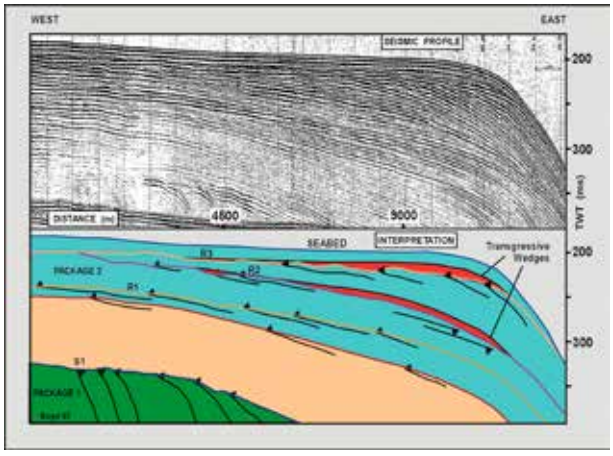


IMAGE 3.
OFFSHORE SEISMIC DIAGRAM WITH INTERPRETATION.

"Here is the outershelf image. It is actually a cross section of the outer continental shelf offshore from Newcastle. The image at the top is a seismic reflection profile acquired by transmitting low frequency acoustic signals from a ship at the surface and reflecting them back from layers below the sea bed. Most of these layers in Package 1 (Tertiary in age) and Package 2 (Quaternary in age) are made by transgressions and regressions of the shoreline and deposition in ancient deltas of the Hunter River. The water depth at the shelf edge is around 180 meters and shown here as two way travel time (TWT) in milliseconds below the sea surface," Prof. Ron Boyd, 2016.

contemporary info-graphics summarising data on Australian landfills. The participant activities, sorting household waste and tracking individual waste-futures, build material and temporal awareness of our everyday rituals of rubbish disposal. Stirling's project shifts anthropocentric ways of knowing towards a post-human 'otherworlding', by taking a long-term view on the implications of material accumulation.

A reading of Waters[9] clarifies that stratigraphic predictions for the future are not easily assumed, and so a close reading of scientific investigations provides interesting material for speculation on which remains will be detected by 'robot archeologists of the future'[10]. Plastic goo or nuclear fallout may not be most salient. Instead great geological ages are determined by radical shifts in assemblages of creatures who roam, burrow and fly. The domestication of the chicken and its spread far beyond its traditional domain would lead any Future Stratigrapher to surmise a civilization expanding, dominating, then reaching its Malthusian limits. A robot archeologist would have no need for anything 'tasting of chicken', and may desire strange concoctions of Lithium and stone. Parikka's *Geology of Media* draws on modernist science fiction to highlight a conception of the layers of Earth as insurmountable and alive in their own heaving sense. The Future Stratigraphy mapped here takes another line in supposing the heaviness of deep time weighs upon us all. With each fresh scar on geological bodies a scream is embedded in the psyche of the planet and this compression accumulates. Technology will interpolate, and our material-memories will sputter on the decks of self-maintaining cloud computing bunkers, sipping on the deep straw of Earth's hot, rumbling core. This is an intentional Future Stratigraphy, to be catalogued amongst others, to make an incursion between endeavor and demise, or even to accumulate towards futuristic otherworlding.

MADELEINE BOYD IS AN ARTIST, WRITER AND CURATOR INTERESTED IN NON-HUMAN PERSPECTIVES. SHE HAS PUBLISHED IN BEEN PUBLISHED IN *ANTENNAE: JOURNAL OF NATURE IN VISUAL CULTURE* AND *ANIMALS IN THE ANTHROPOCENE* AND RECENTLY COMPLETED A PHD AT SYDNEY COLLEGE OF THE ARTS.

ENDNOTES

1 The AnthropoScene is a loose network of artists and intellectuals who are savvy to the multiplicity of naturalcultural emergences in the wake of anthropogenic influences on global systems. http://anthroposcenemanifesto.com

2 Bonta, Mark, and John Protevi. 2004. Deleuze and Geophilosophy: A Guide and Glossary. Edinburgh: Edinburgh University Press.

3 Parikka, Jussi. 2015. A Geology of Media. Minneapolis: University of Minnesota Press.

4 Worden, Suzette and Perdita Phillips. 2012. Geology, art and imagination: creative propositions for visual representation and cultural narratives. Paper read at SPECTRA: images and data in art/science, at Adelaide

5 http://saramorawetz.com/howthestarsstand/

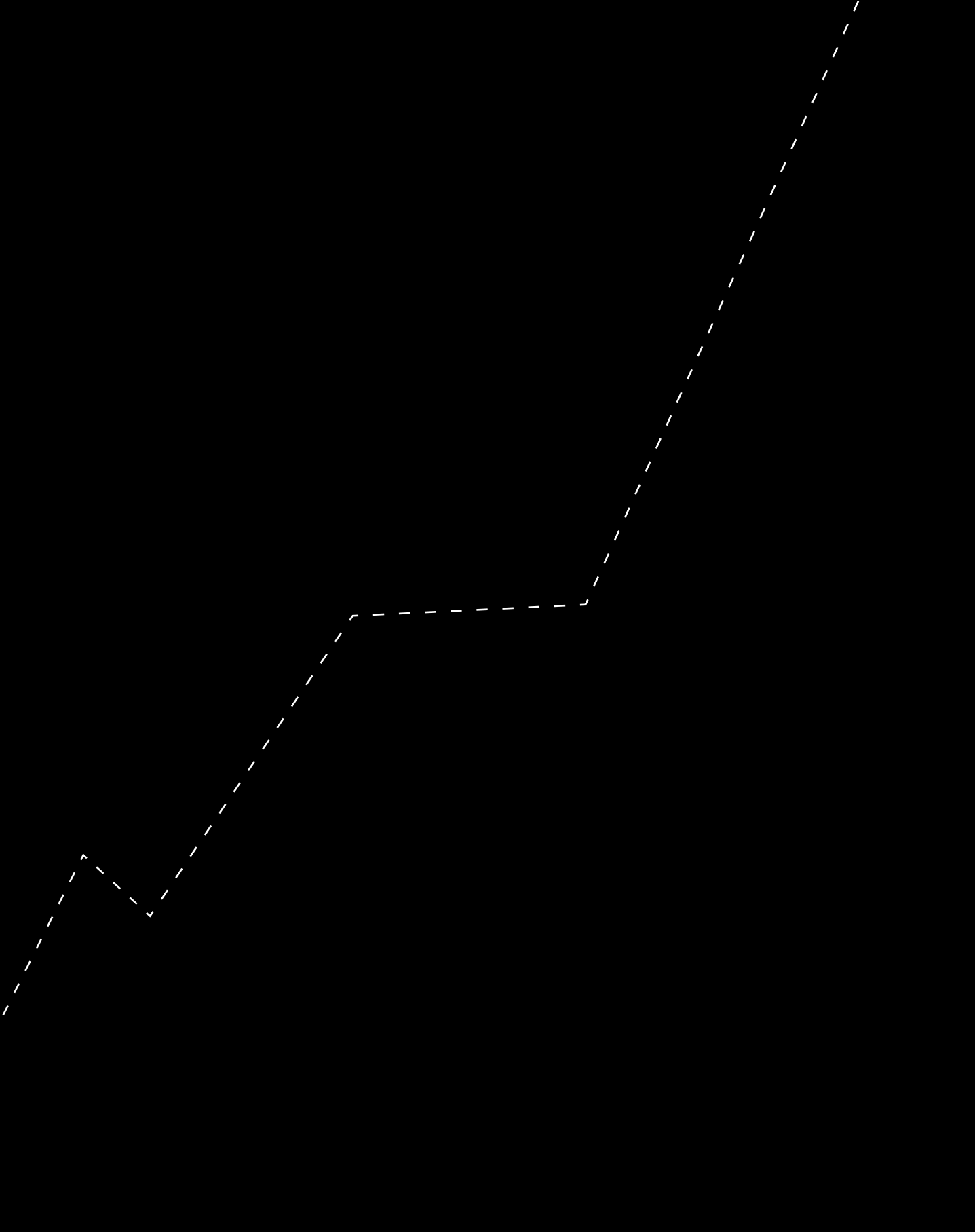
6 Mudie, Ella. 2010. "The Spectacle of Seismicity: Making Art from Earthquakes." Leonardo no. 43 (2):133-139.

7 Graciano, Andrew 2008. "Introduction " In Visualising the Unseen, Imagining the Unknown, Perfecting the Natural: Art and Science in the 18th and 19th Centuries, edited by Andrew Graciano, xv-xxiv. Newcastle, UK: Cambridge Scholars Publishing.

8 Stirling, Joanna. 2015. The modern midden: visualising waste through information design, School of the Arts, English and Media, University of Wollongong.

9 Waters, C.N., Zalasiewicz, J.A. Williams, M. Ellis M.A. and Snelling A.M.. 2014. A Stratigraphical Basis for the Anthropocene: Special Publication 395.: The Geological Society.

10 Parikka (2015)



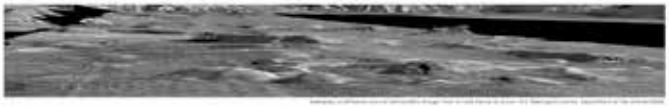
ARTISTS

JOHN ROLOFF

DISPLACED SEA / SEEKING THE PERMANENTE, 2014, INKJET PRINT ON DRAFTING FILM, 60X120CM. COURTESY THE ARTIST AND ANGLIM GILBERT GALLERY, SAN FRANCISCO.

John Roloff is an artist and professor at San Francisco Art Institute. He works conceptually with site, process and natural systems. With a background in science and geology, Roloff's work engages poetic and site-specific relationships between material, concept and performance in the domains of geology, ecology, architecture, ceramics, industry and mining, metabolic systems and history. Roloff's work has been included in exhibitions at the Whitney Museum of American Art, UC Berkeley Museum, San Francisco Museum of Modern Art, Smithsonian Institution, Photoscene Cologne, the Venice Architectural and Art Biennales. He has received fellowships from the U.S. National Endowment for the Arts, Guggenheim Foundation and California Arts Council. Roloff is represented by Anglim Gilbert Gallery, San Francisco, CA.



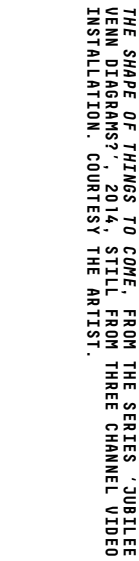








JOSH WODAK



THE SHAPE OF THINGS TO COME, FROM THE SERIES 'JUBILEE VENN DIAGRAMS?', 2014, STILL FROM THREE CHANNEL VIDEO INSTALLATION. COURTESY THE ARTIST.

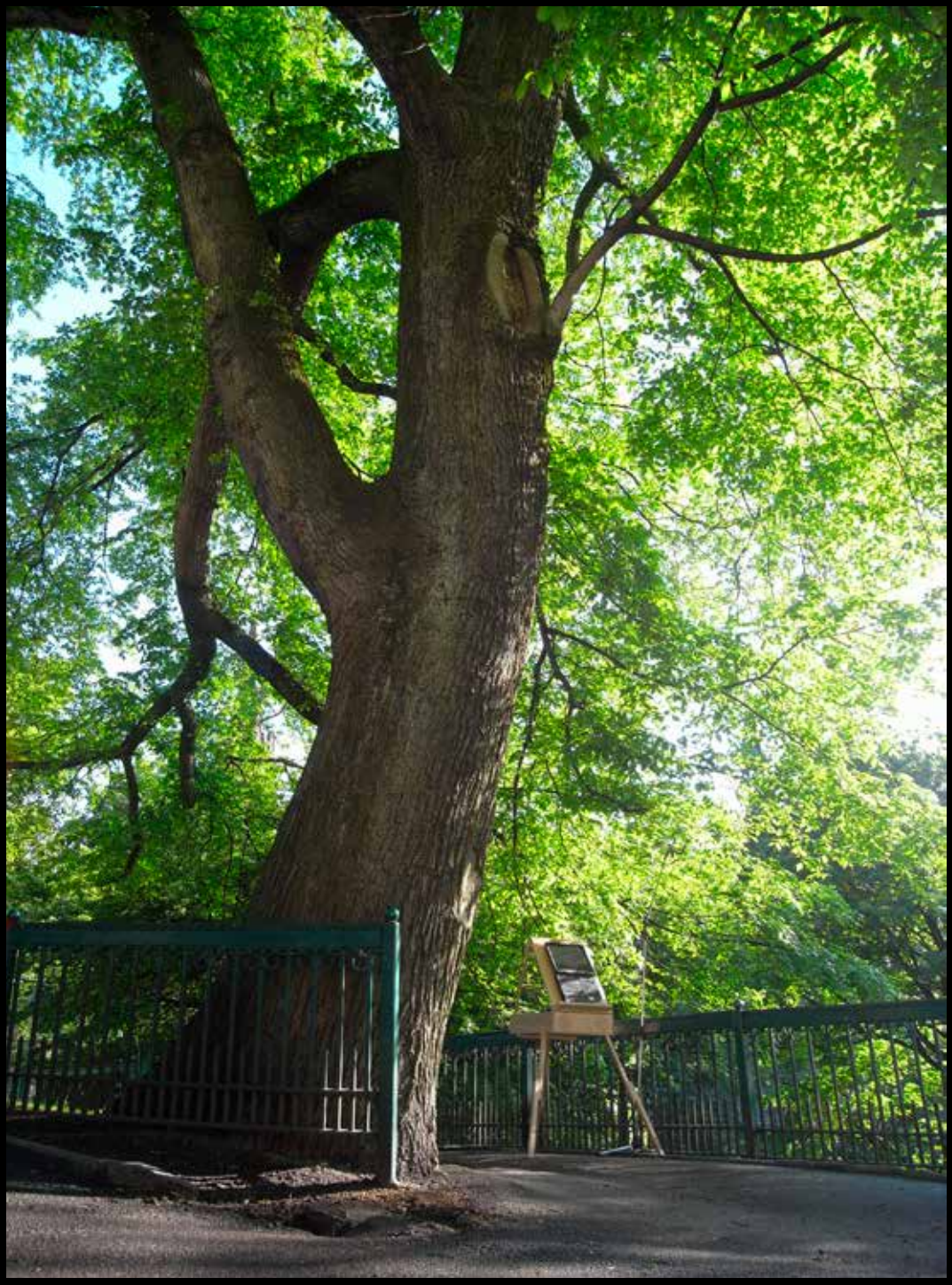
Josh Wodak is a researcher, artist and design educator in the Faculty of Art and Design, UNSW. His work critically engages with cultural and ethical entanglements between environmental engineering and conservation biology as means to mitigate species extinction and biodiversity loss in the Anthropocene. Wodak has a BA in Anthropology from Sydney University and a PhD in Interdisciplinary Cross-Cultural Research from Australian National University. He is also currently a Chief Investigator on the ARC Discovery Project *Understanding Australia in The Age of Humans: Localising the Anthropocene* and a member of the Sydney Environment Institute, University of Sydney. Wodak has worked with Carbon Arts on ElectriCITY Sparks and Sensing Sydney, and he has exhibited his media art, sculpture and interactive installations in art galleries, museums and festivals across Australia and internationally.



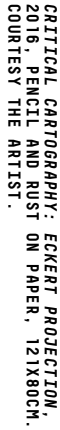
TIM COLLINS & REIKO GOTO

Tim Collins and Reiko Goto have been working collaboratively over the past twenty years, with new media, philosophy, science and technology, exploring meaning through experience, reflection and in-studio practice. They are interested in the small contributions art makes to public discourse about places and things. Their studio is based in Glasgow, Scotland. Recent work has been exhibited at the Perth Museum and Art Gallery; at Summerhall for the Edinburgh Science Festival; and at ON - Neue Musik Köln, Cologne and Kaohsiung Museum of Fine Arts, Taiwan. Collins & Goto presented at interdisciplinary seminars and conferences in Italy, Finland, Germany, Sweden, Taiwan, UK and Australia. Their essays have been widely published, most recently *Imagination and Empathy - Artists with Trees*, in 'Ecologies of participation: co-producing knowledge in more-than-human worlds'.

PLEIN AIR WITH ELM, ABERDEEN, 2010, PHOTOGRAPH. COURTESY THE ARTISTS.



TRACEY CLEMENT



CRITICAL CARTOGRAPHY: ECKERT PROJECTION, 2016, PENCIL AND RUST ON PAPER, 121X80CM. COURTESY THE ARTIST.

Tracey Clement is an artist, arts writer and PhD candidate at Sydney College of the Arts. Her current research explores the possibilities of JG Ballard's novel, *The Drowned World*. In 2015 she coordinated a group show, *Mapping The Drowned World*, in which five other artists joined her in responding to the novel. Clement has recently presented her research at the *Art, Science, Oceans* colloquium, University of Sydney; *European Utopian Studies Society Conference*, Newcastle University, UK; Science Fiction Research Association Conference, New York, USA. Clement is known for creating artworks that meticulously utilise labour intensive techniques for their conceptual resonance. Clement has exhibited widely, both in Australia and overseas, and she is the Online Editor for 'Art Guide Australia'.



DAVID HAINES & JOYCE HINTERDING

David Haines and Joyce Hinterding are artists based in the Blue Mountains west of Sydney, who work collaboratively and individually to investigate the unseen forces that accompany our existence. Enamoured by the occult, science and philosophy they create multi-sensory works employing things like antennae, scents, sculptures and videos. Recent exhibitions include: Cosmos, Daejeon Museum of Art, South Korea, 2016; *Wrap Round the Time,* Nam June Paik Centre for Art, South Korea, 2016; *Meta.Morf, Nice to be in Orbit*, Trondehim Museum of Art, Norway, 2016; *Energies, Haines and Hinterding*, Museum of Contemporary Art, Sydney, 2015. Their up-coming exhibition *Resonances Magnetiques* at La Panacee Centre of Contemporary Culture, Montpelier, France will be their first survey exhibition in Europe. Haines and Hinterding lecture part-time at Sydney College of the Arts, and Hinterding is the artist board member of the Museum of Contemporary Art, Sydney. David Haines and Joyce Hinterding are represented by Sarah Cottier Gallery, Sydney.

ENCOUNTER WITH THE HALO FIELD, 2009/15. STILL FROM SINGLE-CHANNEL VIDEO WITH SOUND, 3.38 MINUTES. COMMISSIONED BY THE AUSTRALIAN NETWORK FOR ART AND TECHNOLOGY AND ART MONTHLY AUSTRALIA, SUPPORTED BY THE AUSTRALIA COUNCIL FOR THE ARTS. COURTESY THE ARTISTS AND SARAH COTTIER GALLERY.



ELAINE GAN



OSCILLATION & INVASION: TEMPORALITIES OF THE MEKONG RIVER, 2016, PHOTOGRAPHIC DIGITAL PRINT, 102 X 43CM. COURTESY THE ARTIST.

Elaine Gan is art director and postdoctoral fellow at Aarhus University Research on the Anthropocene in Denmark. Gan's interdisciplinary practice combines methods from art, science, and environmental humanities to study the timing and temporal logic of more-than-human socialities. She makes speculative diagrams to exploring collective rhythms and disruptions that emerge between species, landscapes, and machines. Gan holds a PhD in Film & Digital Media and Anthropology from University of California, Santa Cruz and has been an artist fellow of the New York Foundation of the Arts and the Whitney Museum, Independent Study Program. Recent interdisciplinary art-science projects include co-curating an exhibition, *DUMP! Multispecies Making and Unmaking*, Kunsthal Aarhus, 2015, and co-editing an anthology of essays, 'Arts of Living on a Damaged Planet: Stories from the Anthropocene', University of Minnesota, 2017.



KATH FRIES

WITHIN, 2016, BEESWAX, PLEUROTUS OSTREATUS (OYSTER MUSHROOMS) AND LOG, DIMENSIONS VARIABLE. COURTESY THE ARTIST.

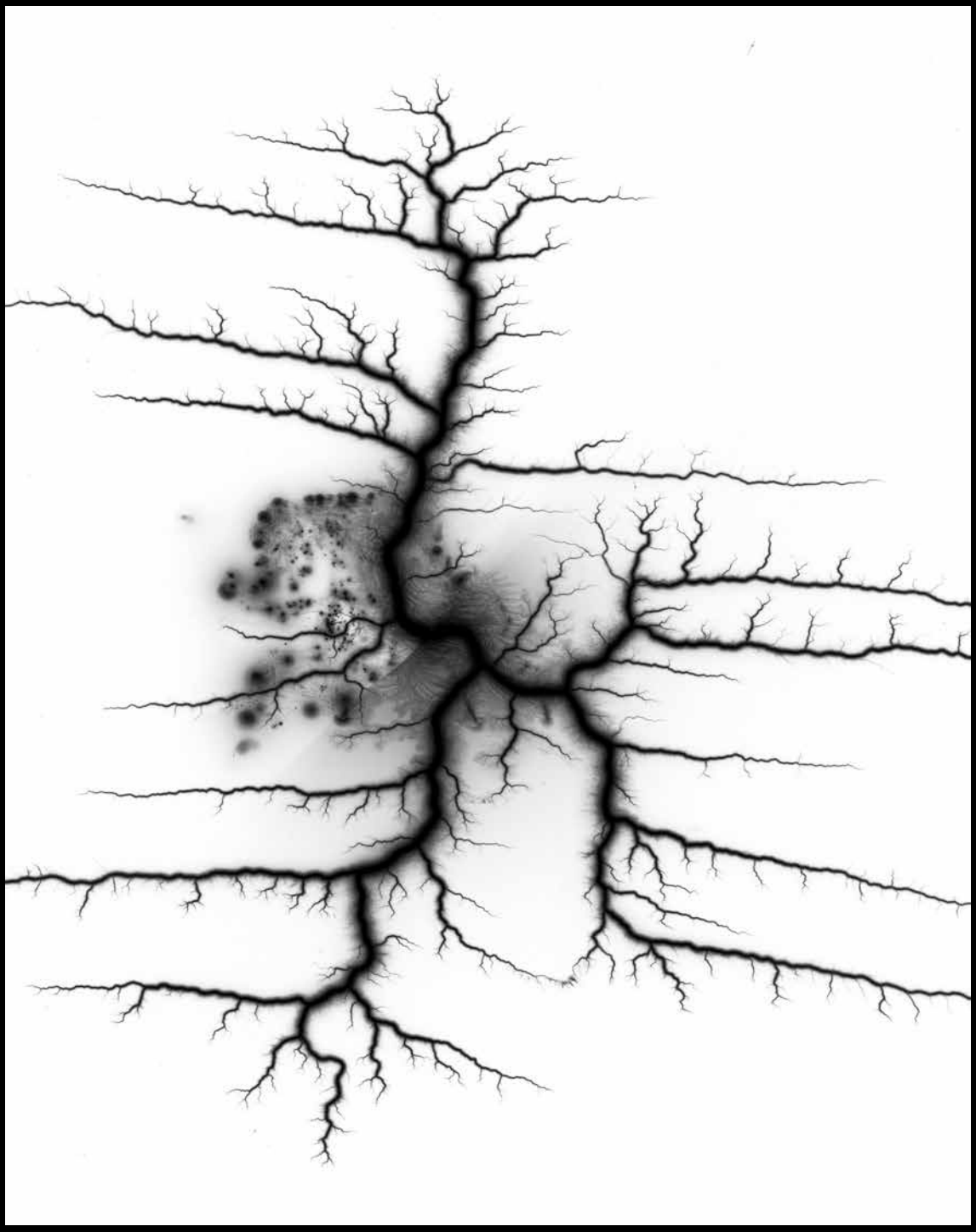
Kath Fries is a Sydney based artist, her practice-led research concerns embodied encounters with materiality, ecologies and site. Creating sculptural installations that engage with the fragility, tactility and impermanence of experiential present time, she exhibits in conventional galleries and non-traditional art spaces. She has received awards from the Japan Foundation, Ian Potter Cultural Trust and Australia Council. Fries is on the board of Viscopy and chairs the John Fries Award. She has been an artist-in-residence at Artles Creative Centre, Hahmajärventie Finland; Fremantle Arts Centre, WA; Bundanon Trust, NSW; The Lock-Up Museum, Newcastle; and Laughing Waters, VIC. Fries is a current PhD candidate at Sydney College of the Arts, and recently presented at the *Encountering Materiality: Art, Science, Language* conference at the University of Geneva.



SEAN O'CONNELL

Sean O'Connell is an artist who works in matter and energy, exploring force and substance through experiments documented in image, film, sound and objects. His experiments seek alternate ways of perceiving materials, focusing on the internal flux of force and energy, towards an alternate apprehension of the world. O'Connell has a background in metalwork and has exhibited sculptural, kinetic, wearable, and film-based works in Sydney venues such as Sherman Galleries and Roslyn Oxley9 Gallery, as well as abroad in Japan and Paris. His work is represented in several Australian public collections including National Gallery of Australia and Art Gallery of South Australia. O'Connell is currently completing his PhD at Sydney College of the Arts.

THE FORCE OF MATTER - CHROMITE, 2016. ILFORD ORTHO EMULSION EXPOSED WITH 45,000 VOLTS DC ACROSS CHROMITE ORE. COURTESY THE ARTIST.



PENNY DUNSTAN

Penny Dunstan is a Newcastle based artist and agronomist working with land rehabilitated after open cut coal mining in the upper Hunter Valley NSW. By employing analogue and digital photography, topographic and stratigraphic drawing, and soil exploration she derives lived encounters with terraformed lands. Dunstan is a PhD candidate in Fine Art at the University of Newcastle. She is a member of the Australian Society of Soil Science and has exhibited her work at the Land Dialogues conference in Wagga, the Rehabilitated Soils conference in Singleton and Curve Gallery in Newcastle. Recently, Dunstan participated in the Dark Mountain Anthropocene Project in Devon UK and the Eden Project at a rehabilitated mine site in Cornwall UK. Earlier this year she was an artist-in-residence at Hill End NSW, where she worked with re-vegetated ex-gold-mining landscapes.

SOIL MONOLITHS, 2016, SAMPLES OF THREE RECONSTRUCTION MINE SOILS: NATURAL SOIL, REHABILITATED SOIL 2 YEARS, REHABILITATED SOIL 22 YEARS.120X135X12CM. COURTESY THE ARTIST.



BRYDEN WILLIAMS

FIRE SPRINKLER ABOVE CAMPFIRE, 2016, DOCUMENTATION OF SITE-SPECIFIC INTERVENTION USING FIRE SPRINKLER SYSTEM, WATER PUMP, CASUARINA AND INCIDENTAL SITE MATERIALS. COURTESY THE ARTIST.

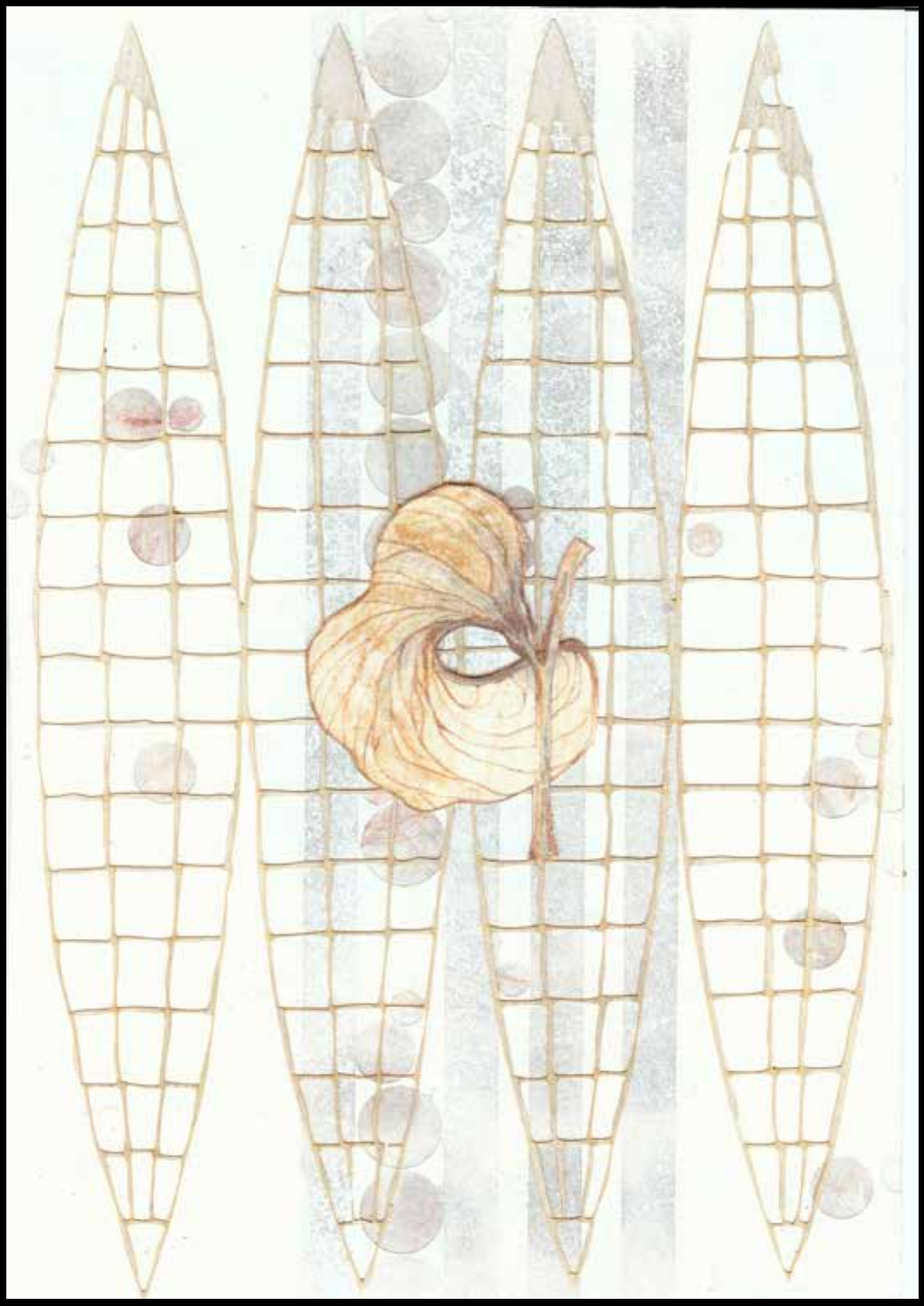
Bryden Williams is a conceptually driven artist, whose work is concerned with processes of decay and preservation, organic and artificial dualities. He often engages with site as a means of challenging the containment of space, objects and time. Williams is currently a Masters of Fine Art candidate at Sydney College of the Arts. He has exhibited in Australia and aboard. He has exhibited in Australia and abroad, won the 2013 New World Art Prize, and was a finalist in the John Fries Award. Williams has been an artist-in-residence at The Bogong Centre for Sound Culture in Victoria, Red Gate in Beijing and is about to start a six-month residency at UdK in Berlin.



DEPOSITION LINES, 2016, MIXED MEDIA, 21X30CM. COURTESY THE ARTIST.

EMMA ROBERTSON

Emma Robertson researches theories of mapping and new developments in creative thinking processes, exploring the relationships between words, objects and memory in mixed media drawings and bookworks. She is an Associate Professor at UNSWAD and a Fellow of the Royal Society of Arts, London. Robertson has exhibited in Norway, Italy, France, USA, Germany, Czech Republic, UK and Australia; and her work is held in seven international public collections. For her current PhD practice-led research at Sydney College of the Arts, Robertson extended previous work with scientists at the Sydney Royal Botanic Gardens, to explore new ways of telling stories about the impact of climate change on rare and endangered Australian flora.



DELL WALKER

Dell Walker's practice-led research into artists' unconscious contributions and hidden motives, leads her to often to pick up plastic rubbish. This detritus evolves into large, surprisingly beautiful sculptural installations with political punch. Like unconscious thought, rubbish is usually ignored, pushed aside and buried, yet both have far-reaching ramifications. Walker is a final year PhD candidate at Sydney College of the Arts, and recently presented and exhibited at the *2016 EcoArts Australis 2nd National Conference* at the University of Wollongong.

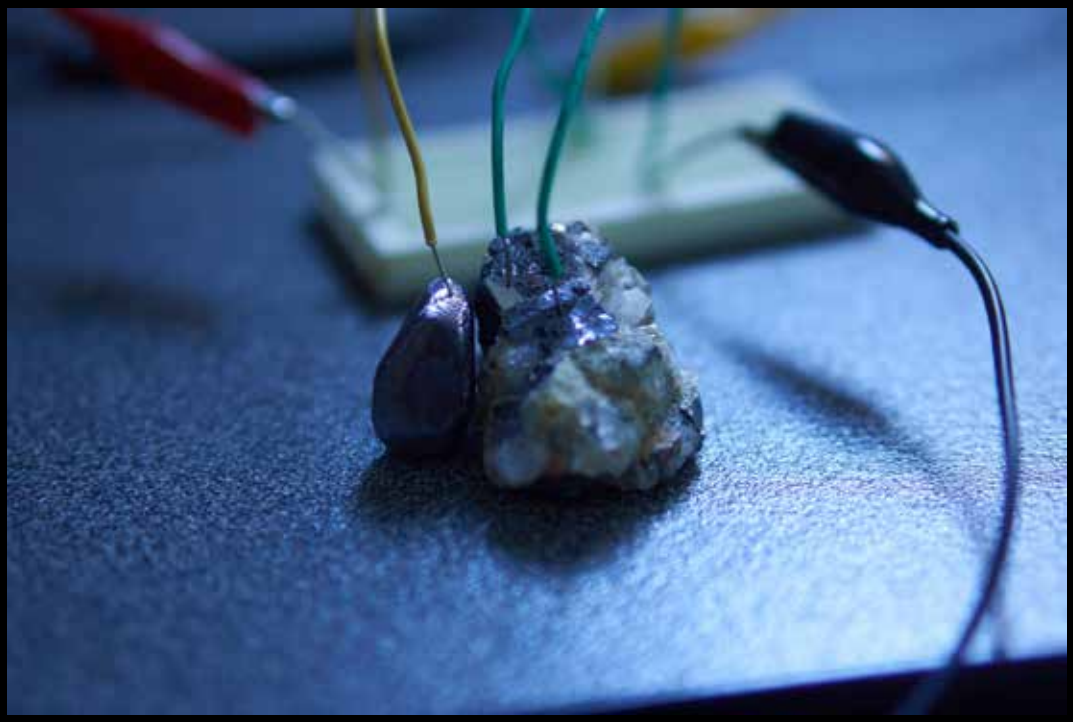
A GROWTH ECONOMY, 2016, (DETAIL OF WORK IN PROGRESS), SALVAGED POLYSTYRENE FOAM PACKAGING, DIMENSIONS VARIABLE. COURTESY THE ARTIST.



KENNETH MITCHELL

CRYSTAL AMPLIFIERS, 2016. QUARTZ, GALENA, SILICON CARBIDE, ELECTRONICS, DIMENSIONS VARIABLE. COURTESY THE ARTIST.

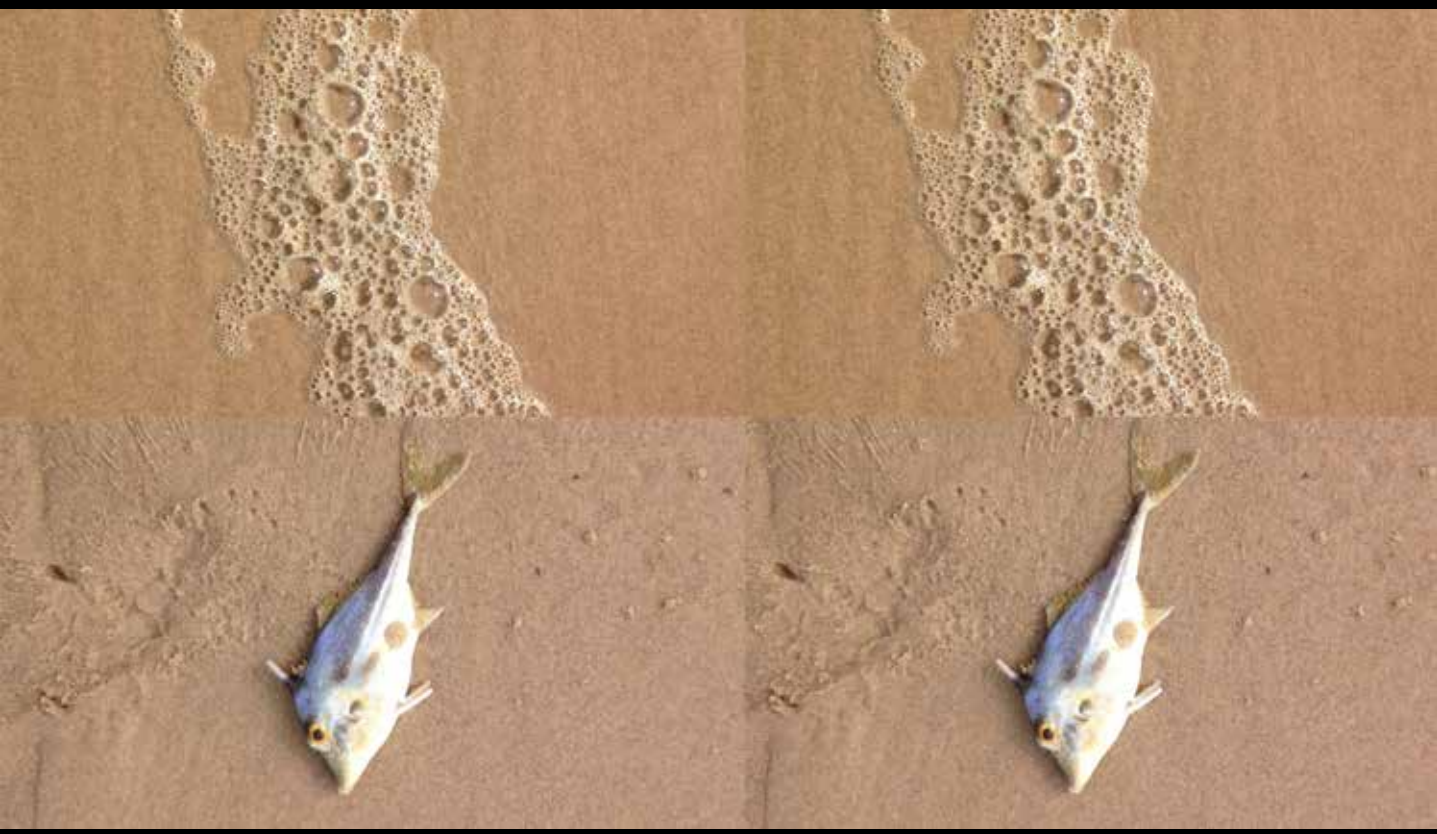
Kenneth Mitchell works across a range of media including sound, still and moving image, custom electronics, sculpture, installation and performance. His works engage with the transduction of subtle dynamic forces into the field of audible perception allowing us to listen in on the otherwise inaudible. Mitchell is currently a PhD candidate at Sydney College of the Arts and has exhibited and performed both nationally and internationally including at Dlux Media Arts *d<art 01* at Customs House, Sydney, *Hidden* in Rookwood Cemetery and *The Auricle Sonic Arts Gallery,* Christchurch.



MADELEINE BOYD

Madeleine Boyd produces work that engages with contemporary art and investigations into non-human perspectives. These current daily inquiries into the nature of existence extend dialogues beyond human-centered interests to become inclusive of the perspectives of matter, other species and the influence of technology on perceptions of lived experience. Boyd recently completed a PhD at Sydney College of the Arts. She continues to work as an exhibitor, writer and curator with the Australasian Animal Studies Association and the New Materialism in Contemporary Art SCA research cluster. Boyd has presented her original concepts on art practice-led-research and the philosophy of new materialism at several academic conferences, and her academic papers have been published in 'Antennae: Journal of Nature in Visual Culture and Animals in the Anthropocene'.

SANDS OF TIME, 2016, STILL FROM SOUND AND ARCHIVAL IMAGES VIEWED THROUGH GOOGLE CARDBOARD COMPATIBLE APP. COURTESY THE ARTIST.



MASTERCLASS

THE SEA WITHIN THE LAND

2 - 6PM TUESDAY 17 OCTOBER
Sydney College of the Arts and Callan Park

This masterclass with international artist John Roloff will explore site-engagement processes focusing on Callan Park as the site of Roloff's Sydney project, The Sea within the Land. The masterclass will involve walking the site; discussing the area's past, present and future (in relation to geology, mapping, flora and fauna, and human engagement - the Gadigal and Wangal traditional custodians, history as colonial estate and psychiatric hospital, and current uses); and an outside workshop with above-ground echo-sounder technology.

SYMPOSIUM

FUTURE STRATIGRAPHY
2 - 6PM
TUESDAY 18 OCTOBER
SCA Auditorium,
Sydney College
of the Arts

The *Future Stratigraphy* symposium will explore ways of understanding and envisioning the materiality of country/ landscape across disciplines, cultures, and time'.

PROGRAM

2PM
WELCOME, Oliver Smith
ACKNOWLEDGEMENT OF COUNTRY, Janelle Evans
KEYNOTE LECTURE
John Roloff

3PM
MATT POLL, Curator Indigenous Heritage and Repatriation Project, Macleay Museum, University of Sydney
RON BOYD, Conjoint Associate Professor, School of Environmental and Life Sciences, University of Newcastle

3.30PM
PANEL DISCUSSION
John Roloff, Matt Poll, Ron Boyd Chaired by Tracey Clement, PhD candidate and writer

4PM
Break

4.30PM
ARTIST TALKS
SCA Galleries

INFORMATION & ENQUIRIES

HTTP://SYDNEY.EDU.AU/SCA/RESEARCH/NEW-MATERIALISM/INDEX
SCA.NEWMATERIALISM@SYDNEY.EDU.AU

ACKNOWLEDGEMENTS

Future Stratigraphy is presented by the New Materialism in Contemporary Art research cluster at Sydney College of the Arts, the University of Sydney.

6 – 29 OCTOBER 2016
SCA GALLERIES
MONDAY – FRIDAY: 11AM-5PM
SATURDAY: 11AM-4PM

CURATOR: Katherine Fries
PROJECT TEAM: Oliver Smith, Liam Garstang, Mikhaela Rodwell, Madeleine Boyd and Andrew Lavery

The New Materialism cluster wishes to thank all participating artists and writers, the SCA Galleries installation team, Jack McGrath, Nick Greenwich, Angel Gill, Callan Micallef, Karen Benton and Janelle Evans.

Published in Australia in 2016 by
Sydney College of the Arts
The University of Sydney
Balmain Road, Rozelle
Locked Bag 15 Rozelle, NSW 2039

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Cricos Provider Code: 00026A

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EDITOR: Kath Fries, Oliver Smith and Oliver Watts.
DESIGNER: Katie Sorrenson.
FRONT COVER IMAGE:
Sean O'Connell, *The Force of Matter - haematite*, 2016. Courtesy the artist.
BACK COVER IMAGE:
Sean O'Connell, *Silicon carbide study*, 2015. Courtesy the artist.
ISBN: 978-1-921558-13-9

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