DARK MOUNTAIN

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Issue 15 · Spring 2019

The Dark Mountain Project

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Cover Art
Slash & Burn
by Terje Abusdal

From the series *Slash & Burn*, a photographic project exploring the culture of the Forest Finns, slash-and-burn farmers who settled in the forest belt along the the Norwegian-Swedish border [for full story see Plates A]

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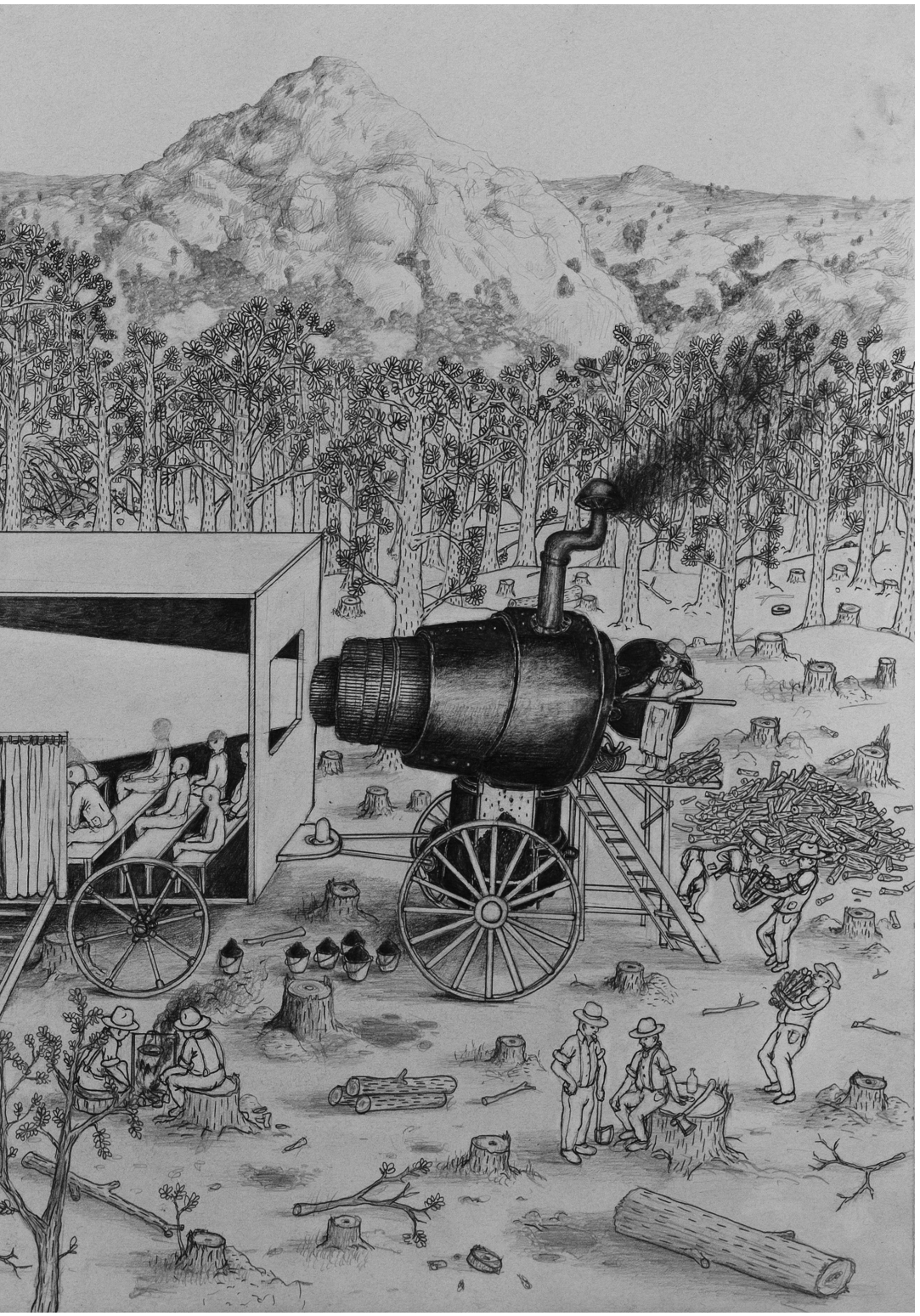


[previous spread]

EMMANUEL DEPOORTER
From the series 'You know the way and you speak the language' 2016–18
Pencil drawing

The drawings in this series are an attempt to reflect on different topics and themes, such as medieval graphics, Christian and historic allegorical and figurative images, but also theoretical frameworks such as psychoanalysis and existentialist philosophy.

EDITORIAL

In the Age of Fire

This past year saw infernos sweep through California, Greece, the Algarve, the bogs of Ireland, the forests of Costa Rica and even the Arctic Circle. Unprecedented heatwaves have caused thousands of deaths around the world – many countries suffered their worst droughts on record. Where once climate change might have seemed an abstract idea, or else a concern for the distant future, more and more lives are now being seared by the reality of environmental destruction.

At a time when the pace of change is accelerating, and the outlook for our world is beset by uncertainty, this book gathers the voices of witnesses from across the globe who are experiencing the shock of this new state of emergency. They speak of what it feels like to be alive in these times, what stories can guide our path through the flames, and what might arise from their ashes.

For many of these contributors, fire is no longer a metaphor but a terrifying new reality. We were struck by the volume of submissions that documented the all-too-real wildfires, forest fires and house fires that obliterated ecologies – both human and more-than-human – in the summer of 2018. Becca Rose Hall's elegy 'Fine Particles of Brilliant Forests, Burning', reminds us of the innumerable life forms those fires consumed. Writing in British Columbia, she says: 'There is no line, now, if there ever was, between there and here, burning and breathing, their life and our own.' In northern Sweden, Ingrid Reiser records the shock of flames reaching her cabin, while in California, Neale Inglenook dwells on the joys and fears of being a new father as his fragile home is threatened with devastation.

As old certainties go up in smoke, these months have also seen the sparks of something new. Even during the short time in which this collection has been put together, there has been a tangible shift in urgency, a speeding-up of awareness and action; these rumblings of renewed energy are felt within the book. In 'The Children's Fire', Bridget McKenzie writes of ecological despair and the fury of young people, while Meg, her

18-year-old daughter, reflects on her involvement in the activist eruption of Extinction Rebellion. Dark Mountain co-founder Dougald Hine considers this changing cultural landscape and shares his thoughts on how we might reshape our ideas of hearth and home in the years to come.

Some of the authors in this collection explore how hope and despair contend for space within our hearts. In the Arctic, Anna Rose-Prynn finds a new twist in the old poetic paradox of a love that freezes and burns at the same time, while Liberty Lawson shows how heat-driven bleaching of the coral reefs is destroying the optimism of marine scientists. Mike Cipra's letter home from a dusty trailer park is a prayer to the Earth for deliverance.

With all this in mind, we chose Terje Abusdal's photograph as our cover image because, like the story of combustion, it's at once beautiful and demonic. The mark at its centre could be a portal into another world, a burn, a black hole, or the melting of the celluloid that reminds us that we are merely watching a constructed narrative.

Dark Mountain has always attempted to find new ways to tell stories in the face of multiple crises, whether ecological or existential. Sometimes this takes the form of a reaching-out: connecting to the uniqueness of a place, auditing layers of inherited history and thought, or attending to the patterns and details of the natural world. Sometimes it takes the form of a turning-inward: a deepening-into mythic and imagined realms, a descent into the shadows of the psyche, or simply an honest account of human feeling.

And yet, in whichever direction we move, the same truth stares back at us: that the story of the individual as a stable and bounded unit – itself a very recent invention, historically speaking – is limiting, isolating and fundamentally untrue. In conversation with Nick Hunt, novelist Richard Powers, whose latest novel *The Overstory* places the more-than-human at the centre of the narrative, points out that 'there is no separate thing called humanity, any more than there is a separate thing called nature.'

Full acknowledgment of this truth might bring radical change. We are not what we thought we were, and we need not – almost certainly cannot – continue to be what we have been; if the fires we have unleashed have brought destruction in their wake, they might also hold the promise of new possibilities. Their light could reveal truths hidden in shadow for too long, their heat crack open new ways of living and thinking that may serve us in the years to come, just as forest fires open the seeds of the lodgepole pine.

Fire has been our constant companion, tool and adversary on our long, strange journey so far on this Earth. It has given rise not only to industrial civilisation but to human culture itself, while periodically reducing our homes and habitats to ash. We turn to it as metaphor to express the light of reason and the most elemental parts of our nature, and, at this pivotal moment in the human story, it stands as a symbol of the danger and difficult choices that lie in our path. In such times, in Charles Bukowski's words: 'What matters most is how well you walk through the fire.'

What that walk will look like, how swift our pace or how carefully we place our feet are actions still to be determined. But accepting the fact that there is indeed a fire, where before we had only seen smoke, is the first step in beginning this daunting journey.

– Dark Mountain Editors,
Spring 2019

ROB LEWIS

Getting Started

After many days silence
I feel worthy of words again.

I set the pencil tip on the page edge
as if stepping into a field without buildings,
and start walking.

Beyond the margins, north and east,
forests are burning. The ash covers our cars
with its ghostly dispatch, an escaped alphabet
spelling loss.

It is always with silence
that the quiet world falls, and between the quiet
and the silence there runs a long dry river.
We are only now making out its banks,
which are coming closer. The kneeling there
will be like eating dust.

And still in the ground, the faint earthquakes
of oil trains running back and forth, empty and full.
To the south the refineries blaze, oil tankers
stacked in the harbour. They seem unstoppable,
as though their schedules are set
in something harder than madness.

Overhead the sun tolls red,
the light strange, more martian
than earthen, an alien bell
over an ash-fed ocean.

Who would guess the day would come
when even the sun would call for rebellion.

I hold the pen loosely, like a bow,
and begin to run.

DOUGALD HINE

After We Stop Pretending

The setting could so easily seduce you. Painted wooden houses line three sides of a square of grass: the red house, the white house and the low wooden barn between them where the bunk rooms are. On the fourth side, the slope falls away, past the village library, past the station house and the railway tracks to the lake. A strip of an island a hundred yards offshore, then miles of water stretching to a wooded horizon.

The first clue that something is wrong should be the colour of the grass: dead-yellow already in the first days of June. No rain for weeks. The radio says we had the hottest May in over 250 years, but seeing as the oldest continuous temperature records anywhere began in Stockholm in the 1750s, you can probably stick a few zeros on that figure.

Now look again at the island – the one in the photograph on the home-page for this school called HOME – and see how it changes when I tell you that the scatter of low buildings by the jetty is the oldest preserved oil refinery in the world, the soil still poisoned from spills before our grandparents were born. This is where we meet, in a landscape whose beauty is haunted by a history of extraction. Whatever else there may be to say, this is the background against which our voices rise and fall.

A train pulls into the platform. Among the passengers who disembark, there are a number wearing rucksacks, looking around to find their bearings. They take in the lake and the island and the hostel on the hill. Together, they begin the short climb that leads to where we are standing, and, with their arrival, something shifts: this school, which has so far been a story Anna and I are telling, becomes something larger, messier and more substantial. For the next few days, in these borrowed buildings, it will be a place where our ideas and fears and longings get tangled up with those of the people who have taken up our invitation, an invitation to 'a gathering place and a learning community for those who are drawn to the work of re-growing a living culture.'

One member of the group that week stands out in my memory. Fran is not the loudest presence; a large, gentle man in his early forties, he can be humble almost to a fault, yet there is a steadiness that marks him out. Here's what I think it is: out of the whole group, he is the only one who hasn't come alone. I mean, he made the journey solo, sleeping on overnight coaches, but he was able to do this thanks to the support of dozens of people who chipped in to crowdfund his way to Sweden – and so he arrives with a small village at his back, a community to which he already had to explain what was calling him here, and by which he is held. Sometimes in the sessions, I can see their faces leaning in over his shoulder.

A few months later, I'm planning a trip to England when I get a message from Fran: would I like to come and visit his hometown and give a talk? So that's how the two of us end up sitting on this low stage in an arts space in Stroud, along with our hosts, Emily and Ali; the four of us watching as the seats fill up and the queue stretches out the door, hoping we don't end up having to turn people away. Looking out at this crowd, I'm guessing a good few of Fran's villagers are in the house tonight.

Well, it seems the folks without seats are happy to stand at the bar, and the whole room listens intently over the next two hours as we talk about what it might mean to take seriously the question with which the invitation to our school began: 'What if the culture you grew up in was broken in ways that you didn't even have words for?' I talk about things I've learned over the past decade with Dark Mountain: about how despair is not a thing to be avoided at all costs, nor an end state; about how much of what makes human existence endurable lies beyond the reach of the state and the market, unmarked on the maps we've inherited from recent generations; about the role that art has played as a refuge for those aspects of reality that retreat from the gaze of those who would measure and price everything, that slip away like deer into the forest; about the hunch that, whatever hope is worth having today, it lies on the far side of despair, where the maps run out, at the margins or hidden in plain sight.

Fran and I talk about what it means to make room for this within the ordinary fabric of our lives, among the everyday pressures; creating pockets, spaces to which it is safe to bring more of ourselves than it would be wise to bring to many of the workplaces, educational institutions or families we have known.

Then right at the end of the night, just as Emily and Ali are drawing

things to a close, they invite a friend up to the stage, a woman I haven't met yet.

'A few of us are organising a rebellion,' she says. Not words I was expecting to hear, but as she goes on, I realise that I'm listening to something new – or new to me, at least. This is the voice of an activism that comes from the far side of despair, that has room for grief, that calls for courage rather than hope, that frames the stakes of climate change as starkly as anything we've published in *Dark Mountain*: this is not about saving the planet by changing your lightbulbs, it's not about how we can sustain the way of living of the Western middle classes or fulfil the promises of development or transition to eco-socialism; it's about how many species will be driven out of existence in the decades ahead, and whether our own is to be among them.

Two weeks later, Extinction Rebellion delivers its demands to parliament, and as November goes on, their actions bring parts of London to a halt: blocking the five main bridges across the Thames, then holding up rush hour traffic at key junctions around the city, morning after morning. Even the organisers seem taken aback at the scale of the response. The other week, my mum called to say she'd heard a BBC radio documentary about Gail Bradbrook, and wasn't that the woman I'd told her about from Stroud?

From the occasional Facebook messages we exchange, I get the sense that Gail and those around her are riding a storm now, so I'm glad we got that chance to meet briefly in the relative calm of the weeks beforehand. And it seems fitting that the thread of serendipity which brought us together should run back to the gentle presence of Fran and the weave of generosity that brought him to Sweden in the endless days of early June.

'What do you do, after you stop pretending?'

I wrote those words one night in the spring of 2010, as we were preparing for the first Dark Mountain festival. They became the frame for the Saturday programme on the main stage, and when Paul and I wrote a comment piece for the *Guardian* ahead of the event, it ran under the headline: 'The environmental movement needs to stop pretending'. Among the crowd who gathered in Llangollen that weekend, there were those who came expecting us to offer a vision of what the environmental movement should do instead, and they were disappointed. I remember one guy from Manchester who was outright furious, railing to anyone

who would listen, writing to us afterwards to demand that we refund his ticket.

Maybe there are people whose ideas are born crystal clear and arrive in the world just as envisaged in the imagination, but my experience has always been that projects stumble into being: any new undertaking has to wrestle its way clumsily through the muddle of what you thought it would be, past the temptations of what others want it to be, until – if you're lucky – it starts to reveal what it's capable of being. In the case of Dark Mountain, it was only some years in that I saw clearly that this project wasn't the place from which to 'do' anything. Whatever else, it has been a place where people come when they no longer know what to do; a place where you can bring your despair and put it into words, without being judged, without feeling alone, and without a rush to action or to answers.

There's a subtlety here that's not well served by the pugnacious rhetoric of some of what got written in the early days. Activist writing often has the tone of telling everyone else what to do, and that certainly carried over into the ways I used to word things. The subtlety is this: to insist that the space you are holding is not one from which plans can be made or action taken is not to claim that no one should be taking action or making plans.

There's a video on YouTube, an hour and eight minutes in the quiet, slightly shambly company of Roger Hallam. It was filmed in a university lecture theatre last May, soon after the meeting at which Roger, Gail and a few others came up with the idea for Extinction Rebellion. If you sit down to watch it, make sure you have time to get to the end: I had to stop halfway and wait till the next morning, and this was a mistake.

The first 40 minutes are where he presents the climate science, attempting to add up how much warming is already inevitable and where this would take us. There is something mesmerising about the parade of numbers – 1.2° that has happened already; 0.5° within a decade from the loss of the Arctic sea ice; another 0.5° from CO_2 already emitted but not yet fed through into warming; the water vapour effect, doubling the impact of warming from other sources to give another 1° – and this is just the start, he adds. Somewhere around the 3° mark, we'll lose the Amazon – assuming Bolsonaro hasn't got there first – and this will bring another 1.5° of warming. Having got this far, Earth will tip further into a hot state, outside the conditions under which humans are capable of living.

I've been reading, thinking, writing and speaking about this stuff for

long enough to know that a certain caution is called for. As one climate scientist put it to me, the bits we know for sure are scary enough, without stating worst-case scenarios as facts. Still, watching the first half of Roger's talk was enough to give me a sleepless night. Maybe we need those nights every so often, to be brought back to the existential core of our situation, to have the layers of reasoning with which we insulate ourselves peeled off.

'Why we are heading for extinction,' begins the title of the talk, 'and what to do about it.' The remaining half hour is the bit about doing. What is striking is that Roger makes no attempt to row back on the bleakness of what he has already told us. There is no bargain on offer here – 'If everyone does X, then all this scary stuff will go away' – only the observation, backed up by research on social movements, that those whose willingness to act endures the longest are not the activists who are motivated by outcome, who need to be given hope and to believe in their chances of success, but the ones who are motivated by doing the right thing. It's the first time I can remember seeing a call to action which explicitly invites people to go into despair. In the closing minutes of his talk, Roger speaks about 'the dark night of the soul', the need to move through the darkness rather than avoid it. This is a call to rebellion that is framed in the language and draws on the traditions of mysticism.

I don't say that this is without precedent; indeed, part of Roger's argument is that the rational, secular logic of mainstream Western activism, with its dependence on promises of progress, is the anomaly, while the stance for which he speaks has more in common with what has sustained grassroots movements in other times and places, and continues to do so. But this is the first activism around climate change in the West that I've encountered that has roots this deep, that draws on spiritual traditions without slipping into New Age wishful thinking or fantasies about a collective evolution of consciousness. It's the closest I've seen to an activism that can answer that question I didn't know how to answer back in 2010: what do we do, after we stop pretending?

In late July, we hired a car and drove north. This was the middle of the wildfire season, the Swedish authorities were dropping bombs on burning forests and borrowing firefighting planes from Italy. Our county got off lightly, but there were nights when you could smell the smoke on the air. We'd be following a backroad between villages and a convoy of fire engines would come speeding past. Coming home one evening, on the

radio, two young hipster comedians from Södermalm were sniggering about how stupid the countryside people are and why don't they just move to Stockholm rather than live out in the sticks and wait for their houses to burn down – and I thought: what the fuck, does it not occur to them that the rest of the country might be listening?

We stayed on a farm and the farmer told us that she had a problem: in this heat, the lambs didn't notice the shock from the electric fencing, so they were getting out and running everywhere. But her farm was lucky, she said, they had about three-quarters of the fodder they would normally have at this point in the year. In other parts of the country, farmers were trying to send their animals to slaughter because they couldn't feed them, except the slaughterhouses couldn't handle the number of animals the farmers wanted to send them.

At almost any moment in human history, this would be the highest-order crisis a human society could face: to have to slaughter your herds before summer is out because of a lack of fodder. For half a dozen generations now, we've lived in a world that is bound together by supply chains whose effect is to distribute the impact of any local crisis across the whole system, so that a failed harvest in the American wheat belt is more likely to cause bread riots on the streets of Cairo than on the streets of Chicago. This works until it doesn't, until the frequency of local crises strains the global system to breaking point. In the meantime, while the system holds, it means that those whose ways of living place most strain upon the system will be the last to notice.

'What you people call collapse means living in the same conditions as the people who grow your coffee.'

This was Vinay Gupta, on a Saturday afternoon in Llangollen in 2010, in the soulless converted sports hall of a venue where we held that first festival. It was one of those lines that everyone seemed to remember. There was talk of putting it on a t-shirt.

I realise now that I have taken consolation in such thoughts.

When Marks & Spencer put up those posters that said 'Plan A: Because there is no Plan B', I asked: no Plan B for who? For posh supermarkets and department stores, or for liveable human existence? Or do we no longer make the distinction?

When I wrote about Cormac McCarthy's novel *The Road*, it was to point out the thread of irony running through it: you've got this kid and his father pushing a shopping trolley down a road. In one scene, the

father finds what might be the last can of Coke in the world and presents it to his son like it's a sacrament. Isn't there something that gets missed here, among the biblical cadences and the apocalyptic horror: the traces of a satire on our inability to imagine a liveable existence beyond the bubble of supermarkets and superhighways?

Before Dark Mountain came on the horizon, I'd read my way through the writings of Ivan Illich, from the revolutionary moment of the early seventies, when he wanted to show that 'two-thirds of mankind still can avoid passing through the industrial age', to the late eighties, by which time he had seen environmentalism co-opted into the oxymoron of 'sustainable development'. And still he was able to glimpse in the fiction of Doris Lessing, or the everyday realities of his friends in the barrios of Mexico City, 'what kinds of interrelationship are possible in the rubble', among the 'people who feed on the waste of development, the spontaneous architects of a post-modern future.'

In talks, I would tell the story of the Natufians. Late in the last Ice Age, in the territory marked on our maps as Israel and Palestine, they lived in year-round villages. They were among the first people anywhere to settle and they lived like this for 1,500 years, fifty generations, long enough for any memory of their ancestors' wanderings to pass into the dreamtime of gods and culture heroes. Then came the Younger Dryas, the 1,200-year cold snap that turned Europe back to tundra and broke the pattern of the seasons which watered the wooded valleys in which they had made their homes. They knew nothing of the processes by which this climate change had come upon them; it was not a consequence of their actions, only a shift in the weather. Within a short time, they abandoned their settled way of life and became wandering gatherers and hunters, returning to the old villages only to rebury the bones of their dead in the ruins of the houses.

Then I would recall a passage in *After the Ice*, Stephen Mithen's history of the prehistoric world, where I first learned about the Natufians. He sends a time-traveller to walk unobserved through the lives of the people he is writing about: coming upon a band of late Natufian nomads, he follows them to a gathering in one of the ruined villages. The interment of bones is accompanied by storytelling, feasting and celebration; the connection between past and present is reaffirmed. In Mithen's reconstruction, these days of festival offer a respite from the hardships of the present. Yet afterwards, as the people go back out onto the land, they do so gladly: 'They are all grateful for the return to their transient lifestyle

within the arid landscapes of the Mediterranean hills, the Jordan valley and beyond. It is, after all, the only lifestyle they have known and it is the one that they love.'

These stories were never meant as lullabies. We are living through a tragedy whose measure exceeds our comprehension and most of us are implicated in this tragedy. We were born into this situation and there is no simple way to free ourselves from it. The grand summits, the uplifting rhetoric of leaders, the protests at the summit gates: none of this will make it go away. The changes we make to our lifestyles, the meat we don't eat, the flights we don't take: none of this will be enough. We will not make this way of living sustainable, nor anything like this way of living – and yet, I've always felt able to add, this need not be the end of the story. There will almost certainly be creatures like us around for a good while to come, and though they will live with the consequences of the way we lived – though their lives may be hard, as a result, in ways we do not like to think about – they will not simply live in our shadow: the way of life of those who come after us will be, just like our own, the only lifestyle they have known and the one that they love.

I stop now, as I'm writing this, to take a swig of coffee, and I try to think about the lives of the people who grew the beans, the landscape in which they were grown. I try to think about the lives of the people who assembled the computer at which I type these words, the people who mined the minerals that went into its making, the places they were taken from the ground. The conditions in which the people who grow our coffee live are not simply a default, back to which you and I might tumble should the project of civilisation (or 'development', as it's known nowadays) collapse. Our lives are more entangled than that, joined by global supply chains which stretch back into the unfinished history of colonialism and its plantations, where the lives of people and plants were subject to a brutal simplification.

Still, I have taken consolation in such thoughts, in the awareness that there are vastly more ways in which humans have made life work than the lifestyle which happens to prevail around here, just now. This way of living could unravel without that being the end of the story, the end of any story worth telling. I still hold this to be true, but lately I find there are more nights when I wonder whether anything will survive the unravelling.

Mid-October. Still tired from the two-day journey back from England, my first morning home, and I've agreed to record an interview for the *Culture* show on Swedish national radio. The presenter and I sit on a bench in the park across from the railway station. He starts off asking me about the fires this summer. He's hoping I'll say that something has shifted as a result, but all I can think of is the stream of comments, overheard at the hairdressers or the supermarket, or around my in-laws' dinner table, through the rainless weeks of July and August. 'Isn't the weather amazing?' people would say to each other, and 'Don't the farmers complain a lot!' and 'The government should really buy more of those planes so we don't have to keep borrowing the ones from Italy.'

After the interview, I start to wonder, though. Perhaps something has begun to shift, below the surface: a change in the conversation about climate change in certain places, a darkening realism, a movement in the boundaries of what it is possible to talk about. I've had some strange encounters lately with people on the inside of institutions who have lost all faith in the usual stories about how we're going to manage this mess we're in.

That speech last September by Guterres, the UN Secretary General, was unusually stark: 'I've asked you here to sound the alarm,' he begins. 'If we do not change course by 2020, we risk missing the point where we can avoid runaway climate change.' Of course, in the next breath, he is insisting that there are great opportunities ahead for green economic growth, because anything else is still unthinkable. In quiet corners, though, I've heard the unease of people whose job it is to put together the numbers and show how all this can be done: the need to leave the assumption of growth unquestioned is pushing them into claims that are clearly absurd. Their question is how to voice the unthinkable in a way that will have a chance of getting heard.

Here's what I think I'm picking up, as we head into 2019: the official narratives about climate change are under strain from so many directions, there may just be a major rupture coming. Another straw in the wind is Jem Bendell's academic paper, 'Deep Adaptation: A Map for Navigating Climate Tragedy', released in August and downloaded over 100,000 times by the end of the year. From foreign correspondents to solarpunk hackers, I keep hearing how it's reframed the discussions going on in all these different worlds. To many *Dark Mountain* readers, the message of the paper won't come as a great surprise: 'near-term social collapse' due to climate change is inevitable, while catastrophe is

probable and extinction possible. But when this suggestion is made by a professor of sustainability leadership with twenty years' experience working with academia, NGOs and the UN, it has a different kind of impact, at once a symptom of the shift that is underway and a contribution to that shift.

Something similar applies to Extinction Rebellion. In its framing of the situation in which we find ourselves, in the energy which has gathered around it and the speed with which all this happened, it may well be among the first movements of a new phase in the story of our collision with the realities of climate change. If this reading of the signs is anywhere near right, then there will be other movements along soon, other kinds of rupture and other kinds of work to be done.

There's an old video from Undercurrents, the activist film network, shot in 1998 at the Birmingham G7 summit. Thousands of Reclaim The Streets protesters gather outside New Street station. On an unseen signal, the crowd spills out into the road, whistling and whooping, swarming around buses and cars, outnumbering the yellow lines of police. In the chaos of the minutes that follow, a stretch of urban freeway is occupied; part of the concrete collar of ring road thrown around the city centre by modernist urban planners in the 1950s, it's an appropriate site for a movement that has grown out of protests against the road-building plans of the current government.

A couple of tripods have gone up, the sound systems won't be far behind – but right now, there's aggro up at the front, where a few vehicles are still caught inside the reclaimed zone. A man just drove his car into a small group of protesters – not at any speed, just trying to nudge them out of the way, just threatening them with half a tonne of metal – and now he's out of the car and arguing with the police, as more protesters put themselves in front of his car, holding a banner, and now the police are letting him get back in, and now he is putting his foot down and driving straight ahead, as everyone manages to leap aside, except for one young man who is still on the bonnet of the car as it accelerates beyond the last police lines and out onto an empty dual carriageway.

I've never managed to track down that video, though people have assured me it exists, but I was the guy on the car, and it was only luck that meant I walked away that day with nothing worse than bruises and shock. And while it was a drama at the time, I'd hardly thought of this in years, until I saw the livestreams of the swarming protests where lines of

Extinction Rebellion activists were stopping traffic at major roundabouts in London, the queues of impatient motorists, the sound of car horns.

I learned two things the day I went for a ride on a Birmingham bonnet. The first was that I am not the person you want on the frontline, when tempers are fraying and the adrenalin is rushing. There must have been ten of us in front of that car when the driver put his foot down, and the other nine all managed to throw themselves clear. I love the ones who can keep cool and make good calls in the heat of the moment, but that's not me, and my reflexes aren't going to come to anyone's rescue.

Compared to the days of Reclaim The Streets, Extinction Rebellion seems strikingly sober, yet there's still a headiness to any movement as it gathers momentum. Watching from afar, as friends use their bodies to stop vehicles, I realise that I believe in the work that they are doing and I know that there are other kinds of work that will be needed, away from the frontlines. Among that other work, there's still a need for the space Dark Mountain holds, not least as a place to retreat and re-ground, but it's no longer my time to hold that space: I've known for a while, and it's been official since October, that I'm moving on from this project. So that brings back the old question: what do you *do*?

The second thing I learned that day in Birmingham was more unsettling. As the car drove off, I went chest down on the bonnet, looking into the windscreen – and then I rolled over, and he swerved to throw me off and I landed, half-running, tumbling to the ground. But in the moment before I rolled over, I remember seeing the driver's face and knowing that he had no more clue what to do next than I had, that we were caught in a shared helplessness.

It's the end of the year and Anna and I take a couple of weeks offline to rest and reflect. Walking beside the lake in the small town where she grew up, we talk about this sense that something is shifting, and what this means for the work that seems worth doing now, how to frame what is at stake. 'It's about negotiating the surrender of our whole way of living,' I say.

There's a thing called the Overton window, the boundary of what is 'thinkable' to governments and decision-makers: what you can talk about and still get taken seriously, inside the rooms where the decisions get made. I have an image of the window as a windscreen, an expression of helplessness on the face behind the glass.

Unthinkable things are going to happen, that much seems clear.

'You should stop going round saying we're all going to die,' someone

who spent time in those rooms told me, years ago, in an early online argument about Dark Mountain. 'I don't think I've ever gone round saying that,' I wrote back, 'except in the non-apocalyptic sense that, sooner or later, we are all going to die.'

There are things you can't see clearly through that window, possibilities that go unmarked on the maps according to which the decisions are taken. We can come alive in the face of the knowledge that we are all going to die. And in the meantime, before we die, we can try to live out some of those possibilities: the ways of being human together that are hidden from view when the world is seen through the lenses of the market and the state; the ways of feeding ourselves that get overlooked because they don't work as commodities. We can try to negotiate the surrender of our way of living, without pretending there's any promise that this would make it all OK, without pretending we even know what OK would look like. We can have some beauty before the story is over, without pretending we can be sure how long we've got.

It was Anna who came up with the name – before we thought of it as a school, when we were just talking about creating a hospitable place to bring these conversations together. 'It's not a centre,' she said. 'We're not starting a community. It's our home, and everything else starts from there.' It doesn't come into being on those weeks when we advertise a public course, when people we've yet to meet make long journeys to be here. Those are just the times when we're able to open up the work that's already going on: the conversations we bring together around the kitchen table, the people who come and stay, the thinking that gets done in their company. This part of the story is clearer now than when we made that first invitation to the course last June. We're clearer, too, about the urgency: the need for quiet spaces where bridges can be built between troubled insiders, an awakening grassroots and what one of our collaborators, Vanessa Andreotti, has taught us to think of as the 'knowledge-carriers at the edges'; spaces of negotiation, away from the frontlines. Clearer about the role of the network we have built, our ability to bring people together and the consequences this can have. So this is our answer, just now, the place where we might have something to contribute, the work we're going to do.

BECCA ROSE HALL

Fine Particles of Brilliant Forests, Burning

British Columbia is burning, like so much of the West and, like so much of the West, Seattle is smoky, the streets dim and Victorian, the mountains hazy, the particulate levels exceedingly high. Particulates: the particular bits of the burning things, the things burning being the Northwest's forests, the forests and their beings.

Which are first of all trees: snags, sprouts, saplings, old growth, monoculture third-growth firs. And spruce needles, bigleaf maple twigs, alder catkins, yellowing green cottonwood leaves, hemlock heartwood, root tannins of yellow cedar, pitchy upright alpine fir cones, resin blisters of western white pine, the hand's-breadth-thick bark of old Douglas firs. And farther east, the puzzle pieces flaking off of ponderosa pines, pines that are impervious to fire to a point – and then past that point ponderosa needles, branches, limbs.

And the smoke is the claw marks in aspen trees climbed by bear cubs, and the black scars in the white bark of birches where elk scratched their antlers. It is mycelium-laced snags sprouting witches' butter and artist's conk and varnished red-brown *reishi*. It is the orange punk of ancient western red cedar stumps. The spring-green of bitter cherry saplings. It is whole alder leaves, blackened and untouchably delicate, swirled up, blown south, crushed finally by air.

The haze between the hills is blacktail deer hair caught in salmonberry thorns, chickaree middens and the stumps that held them and the chickarees too when the fire trapped them. It is empty shells (brown-spotted, pale blue) in Swainson's thrush nests in curving Douglas maple trees. It is flame-orange northern flicker feathers fallen in sword ferns, and the sword ferns. It is licorice fern, deer fern, maidenhair fern, bracken. It is dry and dormant mosses flash-charred into dust.

The dust in our lungs is lettuce lung and lungwort, pimpled kidney and peppered moon, frog pelt and freckle pelt, forking and beaded bone,

ragbag and tattered rag, antlered perfume, sulphur stubble and common witch's hair. Blood-spattered beard. False pixie cup. Devil's matchstick.

The weird redness in the few beams of sunlight is the berry seeds from black bears' scat. And the berry bushes: huckleberries red black blue, serviceberries, thimbleberries, salmonberries, blackberries, black raspberries, dewberries, elderberries, snowberries, gooseberries, mooseberries, kinnikinnick, salal. It is cow parsnip and lady's slipper, columbine and bleeding heart. It is the foxglove and fireweed of clear-cuts and the trillium and wood violet of old forest glades. It is the medicine of devil's club and corn lily.

The rasp in our throats is slime from stones in small streams turned to steam. It is the rust of broken culverts in old logging roads, pressure-treated posts holding road signs and trail signs, the grasses and oxeye daisies that grow in gravel roads. It is the tarred wood of bridges. It is melted asphalt.

The orange tint to the moon is the burnt bones of long-dead wolves, the flesh of whole voles. It is the black and yellow millipedes that smell like almonds when scared. It is the leaves the mountain beavers dried and stacked like hay for the winter. It is the pearly eggs of slugs. It is spider webs and spiders, iridescent flies. It is thousands upon thousands of mosquitoes. It is weasels and martens and fishers, Pacific tree frog, giant salamander, old and slow-moving lynx.

All of them burning, rising, floating, flying, settling in our lungs, on our skin, on lawns, skyscrapers and lakes. A film in our water glasses, grime on our windshields, dust on our backyard tomatoes. Hundreds of miles from where they grew, these forest particles become part of our place. There is no line, now, if there ever was, between there and here, burning and breathing, their life and our own.

MIKE CIPRA

Letter From the Suburbs of Death Valley

Dear Mom, the speed bump coming into my trailer park
is huge, like a holy asphalt mountain, so when you come to visit,
you must slow your tiny car to the speed of the desert tortoises
who wander the washes west of this ruined meridian.
The children who jump the speed bump on bicycles
have strength in their legs and dirt in their hair – they are
so beautiful on a Saturday afternoon, shining
when I return from the liquor store with a 12-pack
in the trunk and a list of adjectives in the mind,
soaring, glorious, lost, amazing,
inspired by the pair of hawks that fly in circles
over the trailer park's septic pond,
but in fact applicable to any life form thriving here.
It is a strange existence, punctuated by late nights of writing
and frightened glances from neighbours in the morning.

Nothing here is normal except the proselytisers
who come door-to-door on a regular schedule to save souls,
regardless of whether the souls are lonely
or poor or drunk or beaten by husbands
or just plain out of luck, there are many,
many churches willing to sign you up.
I haven't fooled around too much with Jesus just yet,
but if I do, I'll have more friends than I can count.
While I was preparing this very letter, the insistent tapping
of Mormons woke me from the couch, where I was passed out
beside empty beer cans and a pen leaking blue ink. Don't worry,
I am not drowned by words or liquor or irony or what other people think,
and every day I watch the sun go down on the desert,
turning our sky into something violent for a while.
I miss you, Mom. Tell Pop I miss him too,

and tell him I am working hard on my book.
The words come easily some nights
and are more difficult other nights, unpredictable
as the wind which fans a smouldering trash fire
at the county dump – a conflagration of waste that has been burning steadily
for three weeks. According to a disc jockey on the country radio station,
this here trash fire could last all summer and fall,
until the sadness of heartbreak puts it out.
The talk radio host on the competing religious frequency
predicts fire until the absolute end of the world.
Longer even. Every day, I touch the end, I am paid to spill it under my nails
and in my hair, as I drain gallons of used motor oil, the fossil blood
of the Earth scorched in metal hearts of motorhomes and SUVs.
Although I believe in no God that can slow our consumption, I pray to Her;
believe me Mother, every word I write is part of my prayer.

ROGER BYGOTT

A bird flies out of a forest

Ink drawing

A spontaneous ink drawing emerging from the unconscious. It captures a moment of shadows shifting, a crack in the undergrowth, a brief panic of power and fragility, a fleeting drama of birds and beasts.

INGRID M. RIESER

The Fire Season

Autumn

It's my first morning in the cabin. The autumn sun cheerfully salutes me through the curtains, but there is a vague feeling of unease in my gut. I get out of bed and, bracing myself, get ready to check the election results from the night before. The far right is on the rise in Sweden, and the results are sure to be appalling.

Before I can stomach that punch of reality, I must have coffee. I flick the switch for the pump that carries water from the little well behind the house. The tap sputters and groans as it usually does, splashing water down my shirt. But today, something is different. It sputters and splashes, filling the kettle a couple of inches, and then … stops.

Stops? That's never happened before. I quickly switch the pump on and off (the default solution for those of us who are technologically challenged).

Still nothing.

My heart sinks and I prepare myself for the worst. The worst is also, unfortunately, the most likely: the well has run dry.

It's the very first day of what is meant to be a year-long stay in our cabin in the mountains. You'll find it about a mile from the road, just at the tree line. Birches, juniper bushes and heather are scattered around the building, with a mountain heath just beyond. The swallows and thrushes, and often the crows, hang about – even the occasional capercaillie is startled from its perch when I come out in the morning. A gurgling brook tumbles down on the far side of the house, and beyond it the open heath unfurls until it reaches rounded mountains in the distance.

My partner's grandparents built this house in the 1950s, after falling in love with the light and colour of the mountains in this remote part of northern Sweden. His grandfather was a budding artist at the time and

the cabin doubled as his studio; the mountain light inspired hundreds of the paintings that sprang from his brush.

Much is the same as it was then. The wood-burning stove, bookcases filled with art books and classics, the tiny kitchen, most of the well-worn furnishings, the favourite chess pieces, and even the oil paints and brushes, still in the cupboard. But much has also changed. The cabin used to be out in the open, but the tree line has crept higher up the mountainside with the rising temperatures, so that the little house is now nestled in a sparse forest of birch.

Why move up here, to this remote, roadless, storm-ridden and wind-worn piece of moor, fairly close to the local village of ski resorts and mountain bike trails but pretty far from anything else? When people ask, I hastily run through the list of semi-acceptable answers:

'I want to see what it's like to live more rurally.'

'I want to be outside every day.'

'I want to work less, live more.'

'I grew up in the mountains and want to live there again.'

The truth is, I don't really know. Somehow it just seemed to be one of the few things that it made sense to do. Maybe by being here, I'll find out why I needed to come.

I spend the day on the phone with my mother- and aunt-in-law, and they help me call the plumber, two well-drilling companies and the Swedish Geological Survey. Most of them agree: likely there is nothing wrong with the pump – the well is probably empty. The drought of the summer has left groundwater levels at a record low, and the drillers say they are overrun with calls from owners of empty wells.

For now, I can get water from the brook. There's even a hose with a funnel at the top, that carries water down the hill and straight to the tap. If there happens to be a dead animal or dogshit further up the creek, that could be an issue. And once the brook freezes over in winter, things may get tough. But for now, it will do.

With some reluctance I check the election results. The far-right party – the nationalist and essentially racist Swedish Democrats – have not done as well as expected, but still garnered 18% of the votes. That means over one million Swedes voted for them, and they are now the third-largest party. The Green Party, which had been in a minority government with

the leftish Social Democrats, were completely demolished and barely made the election threshold.

The results are disturbing. But I can't escape the feeling that these are just ripples in the wake of a much greater, shifting tide. What do we expect when the ecological world is unravelling at the seams, our economic-growth machine fuelled by cheap fossil energy is sputtering, and climatic changes are happening faster than we could have imagined? The symptoms of these ailments, such as unemployment or refugee crises, will predictably induce many people to seek simple answers motivated by fear: 'us-and-them', nationalism, conservatism, maybe fascism.

Their response is a superficial one. But so is ours. We have been blindsided by hateful rhetoric, getting ourselves tangled up in reactive debates on symptomatic issues. We work towards 'sustainability', but without questioning the underlying logic of progress.

As I fill a bucket of fresh water from the brook I can't help but marvel at the irony: fleeing north to the wilderness during election day, only to wake up to an empty well and a dangerous party rising to a very powerful position. A poignant reminder of what I already know: we are all part of the same big story, and there is no getting away. We are all inextricably linked in this web of creation and destruction.

I consider what I think I know: we are faced with changes on a planetary scale that will rock and possibly topple the foundations of our societies. The question I ask myself is this: as this great tide rolls in, what work does it make sense to be doing?

Summer

Another morning, two months earlier: we're at the cabin for a summer visit, and I wake early to the sharp smell of fire. I step outside and see the haze creeping up between the trees. A yellowish fog, murky, obscuring the valley from view.

Fires have already been raging for a couple of weeks. The one closest to our cabin is over 100 kilometers away, but it is close in mind. We're all walking around with a sense of unease, as if waiting for something. For the rain, I realise. For the haze to dissolve and blow away.

The heat would be bearable if the brook was alive and flowing. But it's been standing still the past few days, reduced to puddles of muddy water flecked with floating clumps of moss and dead insects. There's water in the well, but we constantly worry it will run dry. We use the water sparingly, washing the dishes with frugal care.

There is nothing else to be done. So, we wait.

The haze doesn't go away. Instead it settles down in the valley like a noxious blanket, lingering for days and days. The scent is disorienting: it smells of cozy evenings around the fire. But there is no comforting crackle, only distant, rolling thunder, without the release of rain.

I should be enjoying the warm weather, being able to sit outside without a jumper every evening. But the dazzling weather unsettles me. I can't even truly appreciate the absence of mosquitoes, knowing it's because of the lack of moist hatching places. It's all so urgent, but so placid. A warm breeze is gently blowing, the sun beaming benevolently. But instead of the playful song of the brook, there is the scent of scorched birch and pine. Such a slow-moving, beautiful catastrophe.

There are special reports on the radio. A woman speaks quietly about packing, evacuating their home. Putting the chickens and rabbits in cages on the truck, before rushing back to the house to pack the most necessary items. She tells the reporter, 'It's hard to know, in a situation like this, what to bring with you.'

Yes, I wonder. *What do we bring with us, when things fall apart?*

Spring

I'm at a climate conference. The weather is spectacular – unusually warm for Sweden in early May – leaving the participants sweating during sun-drenched coffee breaks. The heat has also unleashed a pollen explosion, leaving a sizeable group of conference-goers red-eyed, sniffling and drowsy. In a matter of weeks, fires will be spreading across the country, but of this we are blissfully unaware.

As happens almost every time I really engage with the numbers on climate change, I am left deeply depressed. At our current rate of emissions, we will have spent our remaining global budget of carbon in less than fifteen years. Within the next few years we will know whether two degrees of warming is likely or inevitable.

What are our possible responses to this kind of despair? My first reaction is always an overwhelming urge to try to 'fix' the problem. If there is a wrong, can't it be righted? This approach has led to a life of activism in which I have moved between various causes, guided by the hope of making a meaningful impact. I've pondered strategy, theories of change and leverage points. Those chapters have been invaluable, and in large part made me who I am. But the upcoming move to the mountains seems to signify a shift. *Am I withdrawing, abandoning the struggle?* I fret. *Is this what giving up looks like?*

The question of hope drifted in and out of the conference sessions. Or rather, the question of how we fill the hope-shaped hole in our souls, now that our chances of avoiding catastrophic climate change are fading fast.

One researcher, Vanessa Andreotti, shared a Brazilian saying that stayed with me: 'In a situation of a flood,' she said, 'it is only once the water reaches your bum that you can actually swim.' Could it be, that while the water is still at our ankles, we are incapable of imagining what swimming would be like? Could it be we might even learn to breathe underwater?

If we decide the current system is not 'fixable', what paths are then open to us? Andreotti offers some clues. We might try hacking the system – using the system's resources to create something which undermines or defies its logic. But when attempting to play the system, you always run the risk of being played instead. Another possibility is to leave altogether and try to set up a new, separate alternative, simply walking out (think

eco-villages). In both cases, you will risk 'reproducing modernity's violence', inadvertently bringing with you the very evils you hoped to escape.

But Andreotti also proposes a third path – that of hospicing. We think of hospicing as caring for the dying, and that is exactly how Andreotti and her colleagues intend it. They describe hospicing as

> sitting with a system in decline, learning from its history, offering palliative care, seeing oneself in that which is dying, attending to the integrity of the process, dealing with tantrums, incontinence, anger and hopelessness, 'cleaning up', and clearing the space for something new. This is unlikely to be a glamorous process; it will entail many frustrations, an uncertain timeline, and unforeseeable outcomes without guarantees.

Here is, I thought, *some piece of the puzzle*. Modernity has us caught in the straitjacket of our own thinking, and even as we try to extricate ourselves we are inadvertently tightening our bonds. Perhaps we can't learn to free ourselves, to swim, until the water is up to our bums. So what do we do, as the waters are rising? Perhaps we hospice, and try to see what can be composted from the waste this society leaves behind.

Winter

Autumn storms have snatched most of the leaves from their branches. Now only a few tattered hangers-on in umber and orange still remain. The distant mountains are white with the first dustings of snow; winter comes early here.

I've gotten used to the water situation now. The hose from the brook has become clogged with wads of fallen leaves, so I just get the water using the white enamel bucket from the kitchen. Approximately two buckets a day is enough, if it's just me. Some part of me doesn't mind the hassle. Here, at last, is something tangible I can do in the face of global warming: I can go to the river with my bucket. *This is climate change adaptation in practice*, I grimace to myself.

A dear friend comes to visit, and we talk of the times we find ourselves in. She tells me about working at a climate information booth during an election: 'Plenty of people would come up to talk, saying, yes, we are "screwed" and therefore we might as well enjoy ourselves. Take the kids to Thailand for Christmas, or fly to Antarctica to see the glaciers before they melt.'

I find myself asking: How is moving (albeit temporarily) to a remote cabin in beautiful surroundings different from that kind of blatant escapism? Perhaps in some ways it's not. There is much solace to be found in the rustle of birch leaves, in the shifting textures of the seasons, or in the simple joy of wood-burning stoves and shorter to-do lists.

Yes, in that way this is a retreat from the fray. But in others, I hope, it is an advance. Perhaps, in the best of cases, withdrawal can mean seeing more clearly what it is we should bring with us when things fall apart. Instead of burying my despair beneath a 'can-do' attitude, I could try to honour it. I could allow it to nestle in my heart and rest quietly there. That might free my modern mind enough to discern what new seedlings can be found growing in the muck of the mess we're in – delicate shoots that we should take care not to inadvertently trample in our scramble to fix the unfixable.

I try to take stock of my situation.

What don't I have? Solutions, fixes, answers or bullets of silver.

What do I have? One empty well. Two buckets, maybe three. A deepened resolve to not turn away from the pain of a dying world; if I can, to

carry with me some treasures we cannot bear to lose and honour what new sprouts are making themselves known.

Where to begin or how this could happen, I do not know. I have a suspicion that I can't think my way out of this one. I might as well start with taking the buckets to the brook and chopping firewood for tomorrow.

As I write these last lines, another storm of wind and snow rages outside, and it has already knocked the power out. I don't know how long it will be gone, but I make sure to keep the wood-stove burning so the temperature won't drop too much while the electric heaters are out, and so that I have some way of heating my dinner.

Living up here does make some things crystal clear:

Without the water in the brook, there can be no blood in my veins.

Without power from distant windmills, the sunlight that the birch has captured and stored for me is my only source of heat.

The wind and the sky and the mountains are so very big, and I am so very, very small.

Sources & inspirations

Andreotti, V., Stein, S., Ahenakew, C., & Hunt, D. 'Mapping interpretations of decolonization in the context of higher education' *Decolonization: Indigeneity, Education & Society* 4(1), 2015, pp.21–40.

Kingsnorth, P., 'Dark Ecology', in *Dark Mountain: Issue 3*, 2012.

ANNA ROSE-PRYNN

They Said: The Arctic is on Fire

They said: The Arctic is

loveliest journeys in
extreme unliveable cold
because love needs, sometimes, to be
cold
hard and bright:

the quiet hard plain of the lake
speaking hissingly, sonorous,
to the whoosh and whisk of the skid
of the sled and the dogs'

whickering tugging labour across
the ice. Their breath, ours,
smoke aglow
and the heavy breath of the wind
in the burdened pines

fall and smatter of snow
and stars show themselves
in the dying light.

Then they come: the unfurling
hands of the cold sky-dwelling fire
sweep with green the big white
ice, encircle the stars

and make of the night a
flickering cave, pulsing to a silent
beat as beautiful feet in dance, and

hung entranced with a living changing
stalactite.

They said: The Arctic is on fire

From the match set in the Sahel
map, the burn has finally
spread. The lake, collapsed
to liquid, boils; in angry crackle the
blackened pines come down.

Maybe the sky-fire flees blind in smoke,
amazed to gaze on an earth-fire red and
biting where red teeth never bit

not knowing if the dogs will burn –
fur caught like balls of bark or
if in the heat-slushed tracks they harnessed ran
they now will founder, drown

KEVIN MACCABE

We Are Where We Are

When Leo opened his eyes there was something different about the sitting room. It was filled with smoke. It shouldn't have been a complete surprise as he had smelt smoke earlier in the day, but a cursory inspection had not disclosed its source, so he had decided to watch the football. Tedious defensive play from both sides had sent the game to a dreary nil-nil and him to sleep. In the meantime the situation in his house had apparently deteriorated and ignoring it was clearly no longer an option.

He rolled off the sofa onto the floor knocking over a half-filled can of lager, which was annoying, now he would have to clean the carpet as well. Better stay low, that seemed to be the thing to do, he had seen it in a film or something, and so he crawled over to the door. Fumes were streaming up the from the basement utility room but the hall was otherwise clear so he stood up and went to the kitchen to get a bucket of water. He had a fire extinguisher under the stairs, but it was new and rather expensive. Better to wait for a real emergency.

After a brief search, he remembered his bucket was catching a drip at the back of the toilet in the bathroom, so he went up the one and a half flights of the quirky three-storey building to get it. The bath taps thundered a good twenty litres of water into the bucket and he took it to tackle the orange flame that was now licking along the skirting boards in the hall. The liquid load arrested its progress and he returned upstairs for a refill.

When he tried to descend again, the bottom step was glowing a healthy red, so he tipped the water over the bannister. It hissed and fizzled but did not make much of an impression. The lower storey looked lost.

We are where we are, he thought. As long as the fire stayed where it was, he would be okay, so he went into the bedroom to think about what to do next.

The afternoon sun poured in as he opened the curtains. Across the road he could see another house also on fire. In the window of the second floor his neighbour was sitting in his study watching television, which he found

reassuring. In his own house, he realised the kitchen was now out of commission, but he didn't really need a kitchen to live, he thought, he could order takeaways. His plan to adapt to life one and a half floors up began to take shape.

No 'fridge was a bit of an issue, but when he was a student he had made one using a bucket of water and a large cloth. It was good enough for six-packs of beer, so it would probably do for milk and cheese.

The master bedroom would serve as his new living room and from now on he could sleep in the spare room, although he would have to move some of those boxes. In fact, he could throw them down the stairs and the fire would burn them.

Okay, this was better, these were solutions.

He moved the double bed over to allow room to set up an office. He would have to work from home now that he couldn't get out. See, it wasn't all bad.

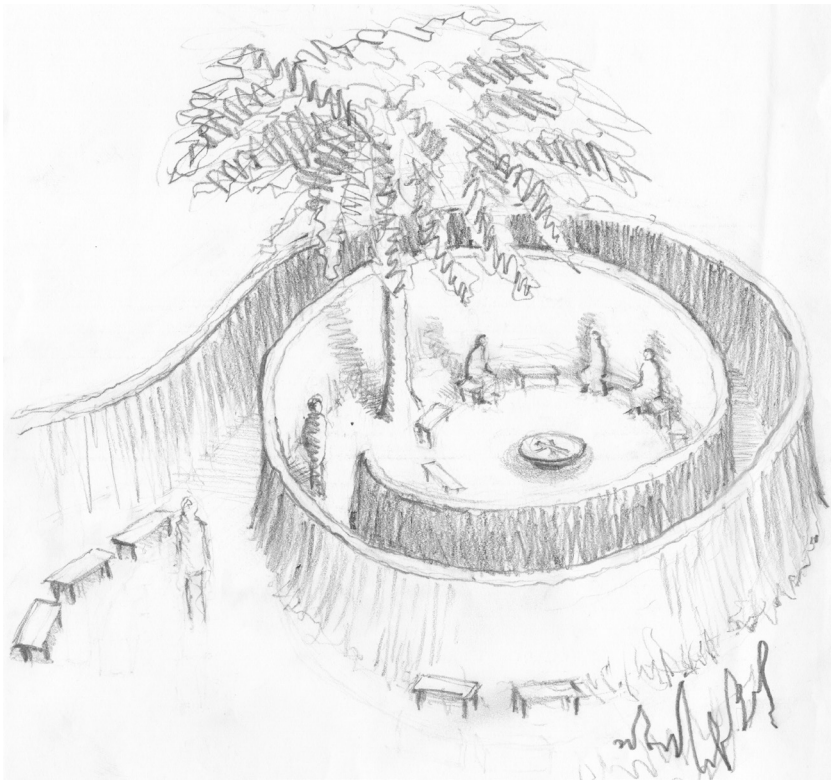
All the running around had made him feel sleepy. He assumed that was what it was, although the smoke made him a bit drowsy too. So he decided to take a nap. His acceptance that he had to move on from living at street level had taken all the stress out of the situation and he slept very well.

When he awoke it was dark. He found a can of lager under the bed, it was his lucky day, and he cracked it open. Looking across the road, he could see his neighbour still slumped in front of his television. He raised the can in his direction, sound bloke, he wasn't panicking, took a swig and went to the bathroom.

He stumbled to the toilet across the landing, now dense and black with smoke. When he flushed he realised he had no soap, so he wrote it down. There were bound to be lots of things he would need for his new elevated lifestyle.

Outside the bathroom, tongues of flame lapped at the top of the stairs and the carpet was smouldering. The fire was advancing faster than expected, which was a big disappointment. He had been thinking that the ground-floor fire was really a problem he could leave for the next owner. Well, he had a third floor; that was the advantage of these townhouses, what a shrewd purchase. So he gathered a pillow and his toothbrush and made his way upstairs again.

If the fire spread any further, he always had the attic. And, if he was honest, it could do with a clear-out.



ZETTE ROME

Into the Black

Charcoal drawing

The visitor walks a path between walls of black carbon, pulled out of the air by plants and fixed by human intervention, until they reach a central enclosure. Around a healing fire, under the sheltering branches of a tree, emotions around climate and the broader ecological crisis can be safely held, expressed and acknowledged.

ROBERT ALCOCK

Into the Black

Idea for a land art installation on the themes of carbon and climate

The material

I started making biochar at home about eight years ago. This involves: taking the prunings from our trees and bushes, which have been quietly absorbing carbon dioxide from the air all summer long, and piling them up to dry; burning them in a restricted airflow to drive away all other elements until only carbon remains in the form of finely divided charcoal; then soaking this in a nutrient-rich compost tea, to create a soil improver that will make our heavy clay lighter, more workable and richer in microbial life. Research into the benefits of biochar is ongoing, but what is known is that the carbon thus fixed should stay safely locked up in the ground for hundreds if not thousands of years. In a particularly pleasing irony, I use a kiln home-made from discarded oil drums. It's like running the fossil fuel economy in reverse.

Fossil fuels and climate change are the elephant in the room, the whale in the washtub, and a huge problem that most of us collectively agree to ignore. Climate scientists issue yet another urgent warning but the newspapers lead with 'that Strictly Come Dancing kiss'. Activists bring a capital city to a standstill, and the media focus on the pantomime antics of politicians.

When we do hear about climate change, the figures – gigatonnes of carbon, atmospheric parts per million, degrees of warming – are liable to wash over us without any real awareness taking place. UK average annual CO_2 emissions are seven tonnes per capita, equivalent to two tonnes of pure carbon. But what does that really mean? A bit more, perhaps, if you have *made* five kilos of carbon (roughly the output of a single burn of my oil drum kiln, which takes an hour or so) and realised that if you wanted to neutralise the supposed carbon footprint of the average Brit, you'd have to make that much every single day of the year.

Of course, set against the scale of the climate crisis, making biochar in your back garden is a purely symbolic action. Out of shot, from Lancashire to the Ecuadorian rainforest and the Canadian tar sands, the global economy carries on raiding ecosystems for its carbon fix, and excreting the toxic residues into land, water and air. I might try and 'do my bit' to 'offset my personal contribution' to climate change, but my private calculus of conscience makes no real difference to the world. Yet there is a hidden power in symbolic actions, 'for it matters not how small the beginning may seem to be: what is once well done is done forever.' (Thoreau, *Civil Disobedience*).

The installation

Exploring the symbolic aspects of biochar led me to an idea for a land art installation called *Into the Black*. The title alludes to the literal black of carbon, but also to paying off our 'ecological debt' to the earth/atmosphere and thus getting 'out of the red, into the black', while facing up to the dark shadow side of our global fossil fuel economy.

The installation would be built mainly out of biochar and clay soil, which are mixed together with water to form a lightweight building material similar to cob. This mixture is poured into plywood slipforms that are gradually moved to form a wall about 60m long by 2.5m high, curving inwards in a spiral. The foundation is made of charred branches, stone or other local materials. A small roof of charred wooden shakes, boards or shingles may be added to extend the wall's lifespan. The installation could be located in any public outdoor space with regular visitors and where there is access to water, clay soil, and a supply of prunings from trees and bushes, agricultural waste or other feedstock for burning to produce biochar.

The visitor walks a path between walls of black carbon, pulled out of the air by plants and fixed by human intervention, until they reach a central enclosure where there are places to sit around a kiln under the sheltering branches of a tree. The spiral path symbolises a journey from the present-day world to an imagined future characterised by community and connection with nature; but this journey requires that we pass through and encounter the black (shadow) side of our culture and industrial economy.

The healing fire at the heart of the spiral is lit and tended whenever

possible by a firekeeper who may also tell stories, make music, perform site-specific ceremony, or just keep a space for silent meditation and reflection. In this central space, emotions around climate and the broader ecological crisis can be safely held, expressed and acknowledged.

The clean-burning conical kiln produces more biochar which can be applied to the soil locally, sold, or perhaps even used to continuously extend the wall. At the end of the installation's life, the biochar clay wall can itself be recycled as a soil improver. The overall message is a hopeful one: ways to reverse ecological destruction *do* exist, provided we accept the task of transforming ourselves.

JESS RICHARDS

The Naming of Kings

King Fire is dying, I'm sure of it. Sometimes I think I am the only person in these caves who knows this. It's a premonition that feels true, because I have a deep connection with fire. I am slow with it. I give flames my breath, and wait for them to take their own. Fire is not fire, without air.

My hands are light as the sweep of my broom moves grey ashes to the edges of my cave. Changing matter into energy has always been my passion, and I hope that with the death of the king, the changing of this particular word will not destroy fire completely.

In our country, the king chooses the name which is given to him when he is crowned. When he dies, the name is removed from our language and a new word is used instead. Out of fear, we are all obedient. Several words have already been removed, and we use the new words even though they still seem wrong to us.

What will fire be called, when King Fire is dead?

I am a warm-hearted man who acts as a firestarter for all the other inhabitants of the caves on our mountain when I'm needed. We have chosen to live far away from the cities in which bad news is passed rapidly. Occasionally we are sent things they no longer want, but think we might have use for. Clothes bundles, old shoes, electrical items and mobile phones which don't work without plug sockets. We make small toys and sculptures for each other from them, for our children, for marriage gifts. We are told little of what goes on, and rarely even think about it. The only official news we are always given is the news of our king, when he dies, when he is replaced.

We live quietly here. But when we call each other, the whistles or shouts echo down to the valley and up to the clouds. When I am called, I wrap up in furs and go to help immediately. Without a fire at the entrance of our homes, the bears come. Without another fire inside each cave, the cold settles in too fast, and people get sick. I use flint to make sparks. I have a bag of tinder which I carry with me whenever fires have been accidentally extinguished.

I see this as my job, the job of my heart, not a job of trade or money. We all work through the days, mining coal from quarries. Noise is rare here. We have chosen to live this way. Sounds come from weather and tools and trees, and travel the air. Sounds are present in our dreams and memories of the places we have left behind. The cities we all lived in but rejected before finding our way here. Perhaps all of us would prefer to be alone, at heart. This is the kind of place you can only find if you leave the noise behind you and keep searching and searching for somewhere new to call home. But we live together because we need each other for survival in this bleak landscape.

Though our fires are kept lit for as long as they'll burn, sometimes they go out during storms. If the passing-gas comes from the west and brings snow in flurries, the fires can be extinguished. I remember one such storm. It was a terrible night. I had thirteen fires to light, all within a mile of each other. But the snow was thick and wet. The storm raged. In this landscape of great rocks and drifts, I was the only thing moving.

I relit all of them. No-one panicked. No bears came. No one was frost-sickened, though for weeks afterwards I had chilblains which covered my feet even though they were fur-booted. Once all the fires were lit, a cheer which spanned a whole mile crashed through the snow's silence. One cave started it in my name, and the name of fire, and the next took up the cheer and sent it onwards.

Silently I sat beside the fire in my own cave, with flames in my heart from the sounds of my neighbours cheering because fire had been returned to them. I burned with pride for the first time in my young life. Fire, the bringer and keeper of life. For that one night I pretended to myself that I was a king with the name of King Firestarter, but that I would live for all eternity.

Our king is a distant king, but everything we used to find familiar is now distant. I've always thought that every king or all power is something terrible. I don't know if that's the truth or a lie, but in our caves we've no need for either. Because I love fire, and King Fire is going to die during my lifetime, I am fearful of his death.

I wonder who would hear me, if I were to still speak the word fire, but only deep inside my gut. If it never reached my mouth or became sound, what could the consequences be? It is law that anyone who uses the name of a dead king is removed from their kin, their home and their work. In a trial which lasts exactly twenty-six minutes, the number of alphabet letters, they are rapidly sentenced. The jail is built in a mountainside

thirty miles north of here, and the cells are clay-built miniature rooms. It's like a hive of prisoner bees. Not worker bees, because no work is allowed to be done. And that is the punishment for using the name of a dead king, to be made useless. As forgotten as a word that's been sentenced to death.

Useless is the most desperate thing of all. We all fear having no reason to keep breathing.

The king before this one only reigned for two years. His name was King Sword. And now sword is a word that has been removed and replaced with a new one. Our new word for sword became that dying king's last words: *no-no*.

That king was an aggressive one. He believed that taking the name Sword would carve his path to greater power in a straight and clean line. He would cut down the boundaries between cities and counties and countries, and build his own walls. He would widen his empire with a great army of supporters. But he was killed by a no-no in a battle with some other king.

The choice of the replacement word depends on what kind of state the king's mind is in when he's dying. King Wind was only on the throne for one year before being assassinated. And yet in his last breath, with a smile on his face, he replaced the word *wind*, with *passing-gas*.

On King Dark's death, the word dark was removed from our language and replaced by the word light. The original word, light, retained its original use. So after King Dark died, dark became light, and light remained light.

How to describe a zebra? Light and light.

While King Dark was still alive, I worried about this. It was rumoured that King Dark had many nightmares and was a highly fearful man. He had chosen what he feared as his name. I think many of them do. They might seem full of hatred, but behind their hatred is misplaced fear. King Dark wanted the word dark removed from our language as his legacy. He chose what it would change into in the moments before his death. Everyone thought he must have seen a friendly albino ghost.

'Losing dark is a blow,' my father said, 'especially since we'll now have too much light. But everything with two poles has a line between them. A continuum of shades, pegged out to dry in the passing-gas.'

I wasn't reassured. I asked him, 'and how will I describe the pupils of my eyes, when I'm taken to bed by my bride?'

'They are light.'

'So this is how I am to be blinded.'

Since King Dark's death, I only ever speak the word dark inside my mind. The punishment of uselessness is too harsh. But I do remember what darkness was like when it was allowed its own name. It was stronger, then. A force and a power and a beauty. Now we say that our coal is light, some essence has gone from it. It's as if to take away a word that is used to describe something creates splits in the substance of the thing itself. We gain little financial reward when coal is hacked from the quarries in great lumps, which then crack and split into charcoal.

The fire at the entrance to my cave is burning blue instead of golden. I am thinking of the dancing eyes of the wife I will marry in a few months but my heart is in my throat. The fire knows what's coming.

As the flames have predicted, word of King Fire's death arrives tonight.

There's the sound of a claxon. At the entrance to my cave, I look into the valley below.

A man lights his way with a torch. He waves it to summon us. He rides a light horse, and wears a small no-no sheathed to his thigh. There is no road leading to us, and a forest to be hacked through to get here, unless you know the route our wagons take when we're transporting coal. The path to our cliffside caves is jagged and steep, and best managed by goats and horses.

Gathering up my tools, flint, axe and tinder so I can start a fire, I emerge from my cave. Others are carrying food and blankets and we're murmuring to each other as we climb down the steps which are carved into the rocks. The valley is sheltered by pine trees. We all want to hear this man's words, as the journey he's taken to make them will have been a long and difficult one.

As I light a fire, others busy themselves by spreading blankets on the ground for our guest's comfort. He is a tall man, and cramped from the horse. He doesn't yet want to be seated.

He paces as he claps his hands. 'I'll speak before I accept your hospitality.'

We halt in our tasks, our eyes on his lips.

He announces, 'King Fire is dead. In his final speech, he decreed that *when I die, the word for fire will become the word water*.'

'So this,' he brandishes the torch, 'still burns as flames, but is called water. Does everyone understand?'

My father and one of the elders approach him. The elder looks into the messenger's eyes as she replies, 'We've read all the books we were sent

when your libraries closed down. We reimagined the meaning of your historical texts with kings' names blanked out. We understand you too well, which is why we choose to live far from you.'

My father places his hand gently on her arm as he says, 'We will light our waters to keep ourselves warm and dry. When our waters are blown out, we will relight them.'

Our bonwater is burning but the flames are ghostly thin. I stack the logs high, to build a stronger base. We warm stew in a pot balanced on sticks. The messenger eats with us before he travels onwards.

As he's about to depart, there's a sharp singing noise from inside his pocket. He draws out his mobile and prods it as if trying to dent it.

I glance at my future wife who's fanning the timid flames, desperately trying to keep the water lit. She's got thick long hair and wisdom in her eyes. She glances at me, looking worried, and fans the flames more urgently. I wonder if for the rest of all time, water will be this frail. I will have to find some way to make its flames stronger, for all of us, if we are to survive. Perhaps I should ask this messenger to send us some recycled paraffin or used petrol. The word water weakens energy even if the matter it's transformed from is strong.

The messenger puts his mobile away again, his eyes scanning our suspicious faces.

He says, 'I've just had a text. The new king has chosen his name. King Wife. He's chosen the name bitterly. He's already announced that when he dies, all married women shall become husbands.' Almost inaudibly, he murmurs, 'He's known for having been cruel to both his wives. But the irony is, with this choice of name he'll have to think about wives every single day he reigns.'

As the messenger mounts his horse and rides away, he calls over his shoulder, 'The king is dead. Long live the king.'

My future husband narrows her eyes as she glances at me again. She kicks at a log in the water. It sparks, and subsides.

I smile at her as she leaves the waterside and sits next to me. I say, 'There are many routes which lead deeper into these mountains. Perhaps there's somewhere far enough away to hear no word of any king.'

Her eyes shine. She leans close to me as she whispers into my ear, 'We could let the roaring wind gust and let coal gleam dark. We could protect ourselves with swords.'

And I whisper back to her, 'If one fire in this whole country is still called by its own name, it would surely burn brighter than any crown.'

The flames burn deep gold as we whisper the word fire.

She nudges me. 'Did you see that? Fire, fire, fire …' The flames strengthen and gleam bronze.

My father glances at us with a frown and a slight shake of his head.

Speaking louder, she replies, 'water spreads.'

Everyone's packing up their blankets and leftover food. They climb back up the cliff steps and return to their caves.

My future husband kisses my cheek and I wrap my arms around her. We sit quietly together for some time, watching the flames change from bronze, to gold, to silver.

To smoke, to lightness, to nothing.

KEENE SHORT

Notes on Preparing for a Wildfire Evacuation

I.

Place sticky notes on the framed photographs that are most important to you. No more than you can carry in a single load out the door when the next wildfire washes over the mountain. Tall masked figures in yellow jumpsuits, with ash stains on their legs and chests, will knock on your door to tell you that you have fifteen minutes to evacuate. When you leave, bring only those photographs you have marked. Memories are a finite resource.

II.

Hike the forest when permitted. During summer, there will be restrictions in place. It will be hot and dry, and you will see deer on the trail, their thin legs ambling over the fur-coloured rocks. Above, jaybirds, and below, rattlesnakes and gophers, balancing twin desperations. The firefighters will be strained for work/stress/ego, and one will light a fire outside the city, just to have a monster to fight, and it will grow out of control like everything in the world, so fast and stalwart like a sunrise. More restrictions will be put in place.

III.

Rake the dried pine needles from your home every autumn. They fall from the ancient ponderosa pines that grow so close to your home they knock against your roof on windy days. The dry needles are a quilt of fuel around your house and in your backyard, but you can minimise the damage they can do. It's autumn, so buy limited-edition orange garbage bags with jack-o'-lantern faces of black see-through plastic. When full and bulging with the season's kindling, you will have instant Halloween decorations.

IV.

Never let a good disaster go to waste.

V.

Keep a sack of pet food handy for when the masked strangers in yellow jumpsuits knock on your door. It will be hot and dry, and you should learn to care for your pet in these conditions as you would care for yourself. Hydration is key, and shade is crucial. Be kind. They did not ask to be born into this world, and they do not understand why they are here, why it is so hot, and why the smell of fear is in the air.

VI.

In grade school every spring, make an escape plan with the rest of the class. Learn the basics: stop, drop, and roll, save yourself first, have a planned place to meet. In the bright library next to the chapter books about Hank the Cowdog, draw a floor plan of your house with red lines indicating the most direct routes to the street for when the wildfire hits. Make a list of essential items. Learn not to be attached to anything; toys,

trailheads. Learn that when it's especially hot and dry, and when the wind is moving consistently, wildfires can outrun humans, even deer. Wildfires breathe as they sprint downhill, their legs smashing the forest floor as they chase you, their white, hot claws outstretched.

VII.

When residents are not permitted to hike the forests, watch documentaries about wildfires, smokejumpers, the red chemicals that planes disperse into the burn zones. Like hurricanes, fires have names, but unlike hurricanes, they are not named after people but the places they destroy, the way counties and states and rivers are named by white settler colonists after the indigenous communities they burned alive: Radio, Aspen, Schultz, Carr Canyon, Horseshoe, Brins Mesa. Memorise this logic: fires that destroy become what they destroy in name and history.

VIII.

Find charcoal in the woods and steal it. Take it home one autumn, the smell of pine needles and mulch everywhere you turn, and try to draw with it. Try to create a new image from the burned bones of a tree. Stain your fingers with charcoal. Let the smell seep into your clothes, and draw something like an apple, a fruit that does not grow in the desert, a fruit you have eaten every night for dinner in clean red-yellow slices, a thing you take for granted enough to put on your list of emergency foods that are easy to gather and easier to carry.

ARNOLD SCHRODER

Do Not Worship the Deities That Came Before the Fire

When civil rights icon and former presidential candidate Jesse Jackson rode a spotted horse toward the burning barricades on North Dakota State Highway 1806, I finally started coming to terms with the end of the world.

Naturally, I already knew that epochal transformation was underway from, say, atmospheric carbon dioxide concentrations, the extinction rate, or a cursory assessment of human behaviour. But the end of the world is inherently mythological, as is the human mind. We are creatures as hopelessly bound to our narratives as we are bound to our sexuality and our fear of snakes. Jesse Jackson, the burning tires and burning sage, the tear gas and acoustic weapons and rocket launchers, the drumming and the war songs – the moment only seemed plausible if one imagined it had been described in prophecy, and the prophecy subsequently forgotten.

It was a sufficiently mythological stimulus to provoke a conclusion which can be concisely characterised as: *We are living in the story of the end of the world*. This was somehow more palpable and psychologically meaningful than: *We are living at the end of the world*, or the more understated and strictly accurate: *We are witnessing a cataclysm without precedent*.

The fires people set that day, 26th October, 2016, in an effort to stop construction of the Dakota Access Pipeline, were extinguished by the next night. Dreamlike encounters with celebrity were fairly common at Standing Rock – the Green Party presidential candidate arrives to spray paint bulldozers people are locked to, the guy who plays the Incredible Hulk in the movies wanders past your camp – and, leaving the barricades as he approached, I didn't even see Jesse Jackson. I just knew he was mounted on a horse a mile down the road, preparing to approach, and the mental image of it, in that warlike context, immediately took on a

quality roughly akin to a many-armed deity wielding skulls and weapons, crowned by fire. It produced a decisive rupture from whatever semblance of the former world I was still clinging to.

Less concisely than: *We are living in the story of the end of the world*, the moment said: *The world we live in now will exist in relation to the old one as a dream to waking, as an unhinged hallucination to everyday consciousness, and whoever clings to the prosaic forms and conventions of the former world will be devoured by the new gods and monsters that are being birthed in its flames.*

Two years later, the impression seems justified. Clinging to the prosaic forms and conventions of the former world, people with respectable opinions occupied themselves, during the time we battled the pipeline, with dismissing a reality television star as irrelevant – until that night, 12 nights after police extinguished the fires, when he was elected president of the United States.

It is not a trivial detail that this decisive, bodily sense of global change occurred in the presence of fire. Scientists and environmentalists have been refining their language of unprecedented suffering and intergenerational catastrophe for decades, and every instance of such communication – if the criterion for success is that one could walk down a street somewhere and it would *feel* like a social response of any kind was occurring, even one of mere acknowledgment – has failed. Some of the reasons for this are very immediate, rooted in the vicissitudes of current and recent politics and culture, but some of the reasons are fundamental, rooted in the human minds' intrinsic barriers to comprehending and functionally integrating the reality of collapse. Witnessing the fiery transformation of the highway into a battleground between what felt like mythical forces that day, I realised that on some level, despite years of avid engagement in climate science and having given up on any semblance of a normal life to fight the fossil fuel industry full-time, I too was subject to these intrinsic psychological barriers to comprehending something so vast; I was *in denial* about climate change.

The political, strategic form of climate denial, rejecting that it's happening at all, has somewhat monopolised the term denial, so that we can no longer talk about it in a more common psychological sense, in the sense that we simply *don't process* information that is too challenging. This can be observed in the ability of the human mind to completely suppress recollections of traumatic events, and it can be observed in non-human minds, in the dazed look that sometimes comes over prey animals'

eyes when they stop fighting with a predator and mentally depart from the experience of dying.

My fiery revelation convinced me that, for most people most of the time, whatever our worldviews, global collapse is simply beyond our emotional and psychological scope, if it is presented in non-mythic terms. The moment of psychological integration I experienced didn't occur because I was explicitly processing anguish over a doomed food system or an ocean populated only by plastic. I'd been doing those things for years. It occurred because I had a religious experience; and I didn't have a religious experience because I was seeking one, but because of *fire*.

A religious awakening born in fire is existentially valuable because it allows for comprehension of what we are experiencing, and it is also, at least potentially, utilitarian, because it allows us to overcome paralysis resulting from witnessing a truth we haven't come to terms with. It is the moment we stop negotiating with reality, stop thinking anything is too terrible to happen, and accept every outcome as possible – paradoxically, this moment of acceptance is also the moment our capacities become mobilised to affect outcomes. The human mind can systematically suppress memory of a trauma, but it can also heal, and when healing occurs it is associated with a phase of recovered memory and acute crisis, where the painful reality becomes absolute and all-encompassing before losing its power. One PTSD researcher describes the initiation of recovery as the moment one ceases rejecting what is happening and begins to *flow with the symptoms*. Fire is the stimulus that allows us to instinctively, corporeally experience the global ecological trajectory, and thus to flow with the symptoms.

This scientific notion recapitulates an ethical and spiritual relationship to adversity that is fundamental to traditional societies, a perceptual framework that candidly embraces the unbearable and emphasises overcoming pain by confronting it. It is a framework evident in texts like the *Hagakure*, which instructs samurai warriors to accept the reality of death and all its emotional consequences, to meditate on the image of one's own inevitable corpse and conclude that one is already dead, before going into battle. It is a framework evident in the Norse *Ragnarök* prophecy, which tells us that Odin will fight the wolf Fenrir, will die in that battle, and the wolf will devour the sun, and tells us this in the form of a prophecy delivered *to* Odin, so that he must go into a battle to save the world knowing that both he and the world will die.

We don't need to explicitly recapitulate tradition, and we probably

can't – we need to recapitulate the psychological resilience and agency traditions conferred on people. We need to witness our own truths and have our own religious awakenings in response to them. This statement is not predicated on any supernatural beliefs, but on the understanding that the cross-culturally recurrent modes of perception that constitute the religious mind reflect innate properties of human psychology, and that it is the religious mind which engages those realities, like death and the end of the world, that other perceptual states cannot encompass. The religious mind is attained through our evolved capacities as opposed to external divinity, but it is a distinctive, real perceptual state, which can't be described in terms of other domains of human psychology. One doesn't need to posit a deity to have a religious experience witnessing the fires that have come into this world; one only needs to witness them *without* some interpretive framework that diminishes their truth.

Arguably, conditions have recently progressed to a point where religious awakening in the presence of ecological collapse is possible, because we have recently entered the era where the planet's behaviour intuitively, undeniably *feels* apocalyptic, regardless of whether people have an interest in 'environmental issues' or not. 2017 was the first year wildfire smoke blackened the skies over major cities throughout the west coast of North America and made breathing painful for days on end, and the first year mainstream news outlets consistently used the adjective 'apocalyptic' to describe the fires. With respect to certain moments – like the hazy reddish-orange glowing sky over Disneyland, or the melted cars and dead horses of Santa Rosa, California – they consistently failed to find any other.

Most people will never have an emotional response to topics like species interdependencies or methane reservoirs beneath ice, but most people have trouble not coming to a conclusion like 'the world is ending' in the presence of a fire tornado. 2018 was the year the fire tornado came to California in earnest, a phenomenon of cyclonic winds created by fire which beget more fire, a vortex of flame towering hundreds of feet above the forest, accompanied by a roaring sound that only seems plausible if one imagines it was first described in a prophecy.

But if all that is required to have a religious experience is to witness the fires that have come into this world without some interpretive framework that diminishes their truth, there is certainly no lack of interpretive frameworks to do just that, and many of them have the tragic aspect of belonging to environmentalists. As the 2018 fire tornados raged in a more

plausible image of god than is to be found in religious iconography, California Governor Jerry Brown appeared on television to gravely intone, in his best we-must-band-together-to-save-civilisation-before-it's-too-late voice, that the fires were unprecedented, and that they illustrated the existential threat of climate change.

It is difficult to overstate the extent to which this statement to the public seemed likely to diminish people's sense of both crisis and awe in the face of what they were witnessing, made as it was in rhetorical modes born in the world as it was before Jesse Jackson rode to the burning barricades, and a reality television star became the most powerful person in the world, and Disneyland glowed a hellish red. The language of CO_2 emissions and existential threat simply cannot convey the elemental truth to be witnessed in the physical world. Like myself during the years I fought the fossil fuel industry, Jerry Brown is someone who is both constantly engaged with the subject of climate change and in denial about it.

Environmentalism has a long history of converting intuitive and universal truths into cryptic and specialised ones. Long ago, the environmental movement established a trajectory to failure by assuming success required seeming reasonable, and that seeming reasonable meant using science. Armed with graphs of CO_2 concentration curves and alarming statistics about rates of deforestation, the environmental movement has experienced constant dismay at people's adherence to competing, less rational cultural frameworks, failing to grasp that we are the very clear inheritors of one of the most effective modes of irrational reasoning in existence, which says: *God is enraged. God is the wind, and god is screaming. God is the fire, and god has come to remake this world.*

Crucially, however, while unprecedented fire certainly goes a long way to conveying wrath and judgement, it also conveys beauty and wonder. Finding a path through the fire means perceiving the fire with reverence, even as it threatens us with destruction, even as we give aid to those who have been displaced by it and grieve for those who have died. It means finding in fire some of the same joy and sense of connection with something vaster than ourselves that we find in the contours of mountains shaped by glaciers or the screaming of a mountain lion. It means exalting in the fact that the same fires that are unleashing extinction are also destroying the machinery of civilisation (the 2018 California fire season achieved for a week what 25 years of international climate negotiations, and more than a decade of state climate planning, never achieved for even a moment: It closed Interstate 5 and the adjacent railroad corridor,

fundamental physical predicates of the consumer economy on North America's west coast).

One doesn't need to stand directly before a towering inferno in order to witness its truth. The sense of divinity lingers. Where fire tornadoes raged in the summer, there is now a landscape in which, unique among fire-scarred landscapes I have visited, one can walk for days, through drainage after drainage, and never once encounter a living tree. There are places with dead trees still bearing their dead needles, places with trees whose needles burned, and whole black mountains of nothing but ash, but this is the extent of the variation. The quiet is uncanny, and feels almost like the land itself is still in silent awe of the power of the force that visited it, and the silence spreads to human visitors, so that they find themselves lacking for words other than brief, repetitive phrases of astonishment.

It is beautiful.

KEVIN SLOAN

Saint Snow

Painting

This draws inspiration from old religious depictions of saints enduring their tortures. I have personified the idea of snow, a delicate and ephemeral phenomenon, into a sentient snowperson/saint. I became intrigued by the possibility of creating an image that simultaneously speaks of frozen winter and intense heat. The solution was to create a snowman being burnt, an impossible, sad and compelling concept.

EMMANUEL DEPOORTER
From the series 'You know the way and you speak the language' 2016–18
Pencil drawing

The drawings in this series are an attempt to reflect on different topics and themes, such as medieval graphics, Christian and historic allegorical and figurative images, but also theoretical frameworks such as psychoanalysis and existentialist philosophy.

MEG MCKENZIE

Exploding Woman

Gouache painting

I painted this after going to an Extinction Rebellion protest, to the occupation of four London bridges. After hearing speeches from activists from all over the world, I just felt as if the planet, all humans, and myself, are losing our ability to reproduce into the future. This woman's womb is exploding like a volcano. It's the end of fertility.

BRIDGET MCKENZIE

This is the Children's Fire

honouring the voices of young climate activists

The speaker and writer Mac Macartney named a leadership course and then a book *The Children's Fire* after the fires lit by First Nations peoples that reminded them to base all decisions around the welfare of unborn children, both human and other-than-human. Macartney explains: 'This is a pledge to life, a commitment to the responsibility carried by each successive generation to safeguard the vitality and regenerative capacity of the earth.'

Our global leaders are stomping over Children's Fires, kicking sparks into drought-ridden forests and grabbing what they can. But in response, all over the world, young people are taking to the streets.

They are joining Zero Hour marches, School Strikes for Climate, sit-ins with Youth Rising and Sunrise movements, and forming Extinction Rebellion groups.

They are cleaning beaches, protecting forests and speaking out for clean water and air.

They are calling for leaders to stop thinking only of their own pockets or political parties.

They are challenging the structures of power and asking big questions.

And no wonder. The costs of climate change will fall on the younger two-thirds of the global population, and on future generations, while the profits from ecocidal industry are kept by the older third.

Young people tend to speak obvious truths with emotion, and are less likely than high-status adults to obfuscate and manipulate. Studies of teenage brains show that stressful situations cause them more emotional pain than adults feel. Can there be anything more unthinkably stressful than facing the meltdown of a liveable planet? Odd, then, that when adults describe stressors for young people, they rarely mention the planetary emergency. This may soon change. The young people speaking out

today about this emergency have no wishful thinking, no concern to hide the alarming truth.

Some notable activists are Jamie Margolin of Zero Hour, Xiuhtezcatl Martinez of Earth Guardians, Timoci Naulusala from Fiji, Ridhima Pandey from India, and Greta Thunberg from Sweden. Greta is a descendent of Svante Arrhenius, the first scientist to use basic principles of physical chemistry to project global temperature rises from burning fossil fuels. His 1907 book, *Worlds in the Making*, explained how climates can change planets and that humans are capable of making such change. Carrying Svante's fire, Greta speaks with great clarity. At COP24 in Poland, she told the world: 'We have not come here to beg the world leaders to care for our future. They have ignored us in the past and they will ignore us again. We have come here to let them know that change is coming whether they like it or not.'

Calmly, she throws burning-hot facts at adults: 'You are not mature enough to tell it like it is. Even that burden you leave to us children.' She adds: 'You say you love your children above all else, and yet you are stealing their future in front of their very eyes.'

In August 2018, Scandinavia was afflicted by unprecedented wildfires, so Greta decided to skip school until the Swedish government reduces emissions in line with the Paris Agreement. Her stance tindered the global movement School Strike for Climate, with regular strike protests on Fridays in Sweden, Germany, Switzerland, Poland, Ireland, UK, the Netherlands, US, Australia and beyond. The strikers say that this is 'zero hour', that there is no time left to take action, so they cannot wait to graduate from school. Their banners proclaim: 'This generation will not wait'. They assert that what they are learning will be no use on a dying planet, particularly the skills demanded by the growth-based economy that is killing the Earth. A young, unnamed Londoner, speaking in a video of a school strike protest outside Downing Street, said: 'If they're not teaching us the most important thing, which is what's happening with the climate, there's not much use in learning all of these things about the world if there's not going to be a world to live in. I'm personally worried that our planet's going to become uninhabitable… This is everyone's future and our future.'

Veronica Hester, a 15-year-old spokesperson for Climate Strike Australia, says: 'In school, we have seen the raw truth of climate change: videos of our dead and dying Great Barrier Reef, increasingly shocking statistics, forecasts of a worrying future. Seeing this, we students do not

shout at each other across the classroom. We sit in a shocked silence. Afterwards we shout, with our signs and our demands. Because how can an educated person know all we know, and do nothing? We can push our politicians to represent us, not lumps of coal.'

Jamie Margolin of Zero Hour asks: 'How am I supposed to live my life and pursue happiness when I can't go outside in the summer and am living on a planet where record-breaking storms, epidemic wildfires, and heat waves are displacing, sickening and killing thousands?' She adds: 'How in the world am I supposed to be optimistic when I am literally being given warnings not to go outside and breathe the air?'

My 18-year-old daughter, Meg, has attended several Extinction Rebellion events. I asked her what motivated her to go. She replied: 'The question is, why don't others go? You see all these disaster movies where the planet is coming to an end and everyone comes together to save it. But the world *is* literally ending and people who might fantasise they can save the world just aren't doing it. Other young people just do Instagram activism to make them feel good but don't do enough that's real. I feel it's going to get to a point when people think they've got nothing left to live for, because there's no going back. But we've got to make sure we don't reach that point.'

After attending her first Extinction Rebellion event, she came home and painted a female figure with her fertile belly exploding like a volcano, throwing fire into the air.

Some will say that I have co-opted my daughter into climate activism, or that adults are deliberately amplifying young voices for sentimental effect. I spoke to another parent who has attended Extinction Rebellion events, Becky Burchell, who bore a sign that said: 'What will we tell our children?' We talked about being co-activists in partnership with our children. Being parents is what motivates us to activism. For those who do not want to bring children into a burning world, being a non-parent is what motivates them to activism. For young people, the prospect of *not* living to be parents is what motivates them to activism. It is care for others that drives us all to call for safety; this is an animal thing, and it is sacred.

'We need the fire of climate change to be confronted,
not left to engulf my generation.'

Veronica Hester, Climate Strike Australia.

CATE CHAPMAN

Legacies

The dry earth looks fretful, fit to blow away –
one steep ploughed field tear-streaked with erosion
like the aftermath of an avoidable upset.
I'm told the soil only holds another hundred harvests,

and then – what? There's a blank in my mind
where the words should form.
We'll all be dead by then, of course,
gone from these minds
that grow kinder even as our bodies soften towards age,
then fade back into earth and dust, or
– who knows? – perhaps the shell of the body cracks open
to release us whole, a perfect yolk of light.
Either way, someone else will feel the fallout:
we didn't tend the children's fire
and now the whole world burns.

Does it matter that we tried?
What words can we possibly offer the future?
How can we do anything but turn our palms up
and say sorry. *Sorry*: that most inadequate of words. Sorry
for what we've been part of.
Sorry that our rage wasn't loud enough
to sound against all this noise –
these great roaring tides of avarice and inertia.

Forgive us, child. Believe me: we screamed until our throats were raw.

MATT MILES

What The Work Is For

Who gives you work, why should you do it?
– The Clash

At 6:30 every morning it begins. I log on and start working through the queue that, until a certain point in the morning, grows faster than I can process it. My task is to quickly copy-edit, categorise, rank and post news items and stories relating to scientific developments to a website. The stories come in from everywhere: Singapore and Sweden; Austria and Australia; Brazil, South Africa, Russia, China, and just about everywhere in between. This deluge of digital information that threatens to drown me arrives in a torrent of words and letters, images and video – announcements from an alphabet soup of acronyms representing universities and research institutions: ETH Zurich, MIT, ESA, TU Munich, A*STAR, RUDN, KAIST, KAUST, UNSW, NASA. Every day, they tell me about the work they are doing.

The work is happening in labs there, or under the ocean somewhere else, or in a forest that is disappearing, on ice that is melting, in an atmosphere that is changing. Or maybe the work is being done by a computer that 'lives in the cloud'. The work progresses daily, moving ever forward as discoveries are announced, new products released, data points confirmed. To my mind, the work comprises two main types.

There is the work that occurs in laboratories, university research centres, hospitals, or sometimes observatories or terrestrial ground stations, and it is usually focused on the future. This work concerns itself with the perfectibility of the human condition through eliminating disease, or the resolution of a looming energy crisis through sustainable biofuels, or breakthroughs in computing via new developments in materials or physics, or the elimination of tedious and hazardous work through the application of automation. This world is the techno-utopian paradise of convenience and easy living that our science has been promising us since

the early days of the 20th century. It exists, for the most part, as it almost always has; in the future.

Then there is the other work, the work that often occurs in the field, in the natural world – or what's left of it. This is the work of the present, but also of a very different future than what those other scientists imagine; it is solemn and serious work. It seeks to grapple with the ever-worsening calculus of species loss and extinction, or to confirm or update a trend of warming and drought, or to announce the existence of yet another unimagined atmospheric feedback mechanism. The world of the present is clearly visible here, in the reports of massive crop losses due to drought, or of ever more destructive hurricanes due to warming oceans, or of plastic-choked and acidifying seas.

This warming world of the present – the research subject of the climatologists, ecologists and earth scientists – is increasingly defined by fire. Whether in the literal sense of the fires that now regularly sweep through many of the world's remaining forests. Or by the combustion of fossil fuels that has brought about our present predicament. Or on another level, that of James Lovelock's metaphor of the fever state of Gaia – as the planet, in critical condition, struggles with a life-threatening disease. This is our reality, and to me it looks more and more like hell.

In William T. Vollmann's recent book, *No Immediate Danger,* the author begins his inquiry into the so-called carbon ideologies that have brought us to our current situation by posing the question, 'What was the work for?' He offers this definition of work, based on language taken from a World War Two primer for US Navy midshipmen: 'An internal combustion engine is *a machine for converting chemical energy by burning a fuel with air in a confined space and expanding the products of combustion, extracting energy as work*.' This strictly thermodynamic definition of work, limited though it may seem at first, actually illustrates many broader assumptions built into our civilisation's historical understanding of the idea of work.

At the heart of this definition there is fire too, the *ur*-technology of human civilisation from which the scientific imperative arises and evolves. The use of fire may be the seminal development marking the rift in consciousness that separates culture and nature, the ever-growing chasm between the human and the more-than-human world that brings us to our current state of crisis. It is also an usurpation of the power of gods, a Promethean gesture of rebellion against the very notion of death and

limits. Fire generates heat and light through the release of energy. It is ultimately an embodiment of the directed, life-giving energy of the sun itself.

But fire also symbolises the two engines that drive our civilisation: technological progress and economic growth. It requires a regular input of fuel lest it burn itself out, just as science and technology require a steady influx of new ideas and intellectual energies, hungrily burning theory to ash in order to advance. Likewise, the growth paradigm of economic progress is a roaring blaze that threatens to consume itself unless continually plied with ever-greater quantities of resources and capital.

Throughout the first 200 or so pages of Vollmann's book we hear the question 'What was the work for?' repeated over and over again in various formulations, as the author addresses his readers of the not-too-distant future in an attempt to explain how the presumptive hell of their present – a much hotter, radioactive and extremely toxic world of scarcity and strife – emerged from the short-sighted and often frivolous societal choices made in our collective present.

As the author frequently attests, the world of our present must, by way of contrast, seem like heaven to future generations. 'Don't you wish you could have what I did? Wouldn't you have enjoyed a life of equally luxuriant selfishness?', he asks of his putative future readers, as they sift through the ashes and charred remains of a civilisation that, in every way possible, consumed itself.

Though his voice is often riddled with irony, there is also a recognition here – a pervasive sense of resignation and futility – of the moral conscience of our present, which did know better than its actions would suggest, as it succumbs to the irresistible momentum of a runaway civilisation speeding towards collapse. To acknowledge this position is to admit the powerlessness of the individual embedded within our society. It is the position of a tiny cog in a much greater machine. And so as his work proceeds, Vollmann, with a mechanic's eye, deconstructs the various parts of the heat engine that together make up our civilisation of the present: waste, power, agriculture, industrial chemicals, manufacturing and so on. But in understanding the parts that make up the whole and their interplay with each other, we come no closer to understanding its ultimate purpose. There is no definitive answer here to the question, *What was the work for?*

Sometimes I envy the scientists. I don't think they ever question what their work is for. Maybe they are motivated by getting rich from patenting new technologies, or maybe simply by working on the world's most urgent and pressing problems simply for the sake of solving them. At the heart of it all there is simple human curiosity and the will to discover, and this I understand.

I consider the mind-boggling vastness that is the workpiece of the professional astronomer, immersed in the details of other worlds existing at almost inconceivable scales and distances. Or the physicist, at the other end of the scale, studying incomprehensibly small and strange particles, the glue that holds the universe together. Or the materials scientist, working out the latest formulation for 2D nanoscale surfaces or quantum computing switches. These are the scientists in the photos – lab mates huddled in a grinning group around the bench, aglow with the pride of an important advance and yet another publication in a prestigious journal. They know what the work is for: it's progress, after all.

Modern science and its rigorous methods and principles represents perhaps the most extreme example of what the psychologist C. G. Jung referred to as 'directed thinking'. Directed thinking exists in contrast to the much older non-directed mode of thought governing dreams, myths and images that Jung spent most of his career investigating and describing. Jung's dichotomy seems to run parallel to several familiar oppositional dualisms – for example, logos versus mythos – though as he describes it in *Two Kinds of Thinking*,

> We have … directed thinking, and dreaming or fantasy-thinking. The former operates with speech elements for the purpose of communication, and is difficult and exhausting; the latter is effortless, working as it were spontaneously, with the contents ready to hand, and guided by unconscious motives. The one produces innovations and adaptations, copies reality, and tries to act upon it; the other turns away from reality, sets free subjective tendencies, and, as regards adaptation, is unproductive.

The most striking contrast in Jung's description of these two modes of thought however, is the laborious and 'exhausting' nature of directed thought – in itself, work – versus the playful, easy and spontaneous nature of non-directed or fantasy thinking.

But the dominance of directed thinking as a driver of civilisations is

only a relatively recent phenomenon. While certainly there were scientists and technicians in the ancient world as well as the medieval Arab world and elsewhere, scientific thought as ideology, 'a dialectical training in directed thinking', as Jung puts it, really only begins with the rise of scholasticism in medieval Europe. But why is this?

> Inquiring minds have often wrestled with the question of why the first-rate knowledge which the ancients undoubtedly had of mathematics, mechanics, and physics, coupled with their matchless craftsmanship, was never applied to developing the rudimentary techniques already known to them … into a real technology in the modern sense of the word, and why they never got beyond the stage of inventing amusing curiosities. There is only one answer to this: the ancients, with a few illustrious exceptions, entirely lacked the capacity to concentrate their interest on the transformations of inanimate matter and to reproduce the natural process artificially, by which means alone they could have gained control of the forces of nature. What they lacked was training in directed thinking.

What is even more interesting here is the ultimate *why* that underlies the ancients' lack of interest in developing a mode of directed thinking that Jung attempts to explain almost parenthetically in a footnote. Essentially, due to a ready supply of cheap slaves, there was no need or interest for technological innovation with regard to labour-saving inventions. Perhaps most importantly though, 'the interest of the man of antiquity was turned in quite another direction: he reverenced the divine cosmos, a quality which is entirely lacking in our technological age.'

Bound up in these two reasons that, according to Jung, underlie the failure of past civilisations to develop a rigorous directed thinking – that is, science – are assumptions that get back to that ultimate and current question of ours, *What was the work for?*

Throughout most of human history and up until the relatively recent past of the Industrial Revolution, work – at least in terms of tedious or physical labour – was for slaves. Almost every civilisation throughout history has relied on slaves at one point or another to meet its labour needs. Britain outlawed slavery and the slave trade in the early 19th century, but only after the Industrial Revolution was well underway. A few decades later the United States tore itself apart over the issue, with the industrial-

ised abolitionist North prevailing over the agrarian pro-slavery states of the South in the bloody American Civil War. Many historians and economists have remarked on the significance of the transformation of civilisations from relying on human labour to that of machines. It's certainly no accident that slavery was successfully abolished only after fossil fuel resources and the machines they powered became available to replace the labour of slaves.

But was the solution – the replacement of slaves with machines and resources to power them – really a morally superior position? Andrew Nikiforuk, a Canadian writer and journalist who has covered many environmental issues of the day, among them the mining of tar sands, goes so far as to equate civilisation's profligate use of fossil fuels with slavery. To him, the technological progress ushered in by the age of fossil fuels is anything but emancipatory. His book, *The Energy of Slaves: Oil and the New Servitude,* offers many convincing arguments and much historical evidence to back this up. He writes, 'The new carbon-based slaves did not immediately replace human ones – in many cases, they made conditions worse for decades – but they did change human thinking.' Ultimately Nikiforuk argues for a new type of abolition movement, one that confronts our sense of societal entitlement to currently abundant streams of surplus energy and recognises the true moral, economic and ecological costs associated with their use.

There are many victims – both human and otherwise – of the fossil fuel spree that has been underway for the past 200-plus years, but future generations will likely suffer the harshest consequences for the actions of their predecessors. As Vollmann writes of the princely conditions of current life made possible by cheap fossil fuels, we, the occupants of the present, must seem as nothing so much as selfish, greedy and uncaring lords and masters to the slaves and serfs of the future, who will have been both economically and ecologically ruined by our actions, much of them in pursuit of trivial gratification or pleasures. Future generations will understand bitterly what their own work is for.

D. H. Lawrence was one of the most outspoken critics of the technologically obsessed modern industrial society he saw evolving in the Europe of the early 20th century. Perhaps best described as a Romantic anti-capitalist, Lawrence spent much of his life travelling the world in search of ancient and indigenous cultures from which he hoped to glean insight into a sense of primal consciousness and natural connectedness, both of

which had been lost to the modern world of his day. Through his travels to Sicily, Australia, Mexico, Sri Lanka and elsewhere, he sought to recover this same spirit of reverence for 'the divine cosmos' that Jung recognised in his appraisal of the ancient world and its rejection of the path of directed thinking. In much of his writing and art production, Lawrence eschewed an increasingly mechanistic and technologically fixated civilisation that was bent on destroying the natural world and turning its human inhabitants into automatons. Though he died of tuberculosis at a relatively young age, Lawrence knew well what his life's work was for.

In the last major work before his death, *Apocalypse*, Lawrence writes,

> I would like to know the stars again as the Chaldeans knew them, two thousand years before Christ. I would like to be able to put my ego into the sun, and my personality into the moon, and my character into the planets, and live the life of the heavens, as the early Chaldeans did… Because *our* sun and *our* moon are only thought-forms to us, balls of gas, dead globes of extinct volcanoes, things we *know* but never feel by experience.

Perhaps nowhere in his writing is the contrast more clearly made between the mythic, primal connection that earlier cultures held to the earth and the cosmos, and the abstraction, intellectualisation and separation inherent in the modern scientific, techno-industrial understanding of the universe.

Watching the great North American solar eclipse of 2017 from the 97% totality zone, I was reminded of that passage. My experience of the much-hyped eclipse, as I watched it in a hay field with a group of friends, had been disappointing to say the least. As they thumbed their smartphones and scrolled through news updates from viewers to the west, the sky grew darker and we all donned our mass-produced eclipse glasses. I focused the lens of my DSLR camera on its pre-positioned tripod and stared through an optical filter as the circular body of the sun began to disappear. The landscape grew eerily dark for a few minutes before the light again began to strengthen and the sweltering August heat returned. Later, when I downloaded the photos to my computer and reflected on the day, I was vexed by how utterly mediated and disconnected the whole experience had seemed.

The eclipse I had witnessed was not the occultation of the sun by the

moon's shadow, but rather the blotting out of a much older way of thinking and being by a mode of thought that is fundamentally separate from the nature and cosmos it is duly erasing in so many ways. Is this progress?

In spite of what you may think at this point, I am not opposed to science. I appreciate the work of scientists and their latest discoveries as much as anyone. After all, it is the scientists who are daily sounding the alarms about humanity's horrific effect on the planet. There is a difference, however, between science as a category of thought and a repository of knowledge, and the ultimately anti-human ideology of technology and scientific progress that – like the latest California wildfires – will consume everything in its path before it dies or is extinguished.

So I do this work every morning for a few hours, sorting through the science. My work is aided by an algorithm that mines keywords and attempts to identify errors from the texts. One day, the AI behind it may not need me at all, and by some this will be seen as progress. In any case, this little work I do, for an hourly wage for part of a morning, supports the greater work.

I have done many kinds of work in my life – from building houses to writing grant proposals to coding up websites. It wasn't until recently though, that I began to think about what the work I was doing was really for. None of the jobs I had done for money had ever provided me with a lasting sense of satisfaction, and when I thought deeply about it, I realised how damaging my job, my income, my lifestyle, was to the planet and most of the beings living on it.

When the global economy unravelled in 2008, I lost a job but gained an understanding of how completely and fragilely interconnected are the systems that this civilisation depends on for its survival. It is undeniably a machine, as Paul Kingsnorth has characterised it, but in particular this civilisation is a heat engine that depends on the burning of fossil fuels. It is lubricated by the grease of advertising and consumerism, and kept in running order by economies, governments and militaries, and at the most basic level by the taxpayers and consumers that ultimately work to support them – the cogs in the machine.

A few years later, I found myself in a relationship with a woman of like mind. Neither of us felt we could participate for much longer as cogs in the machine, and so we too chose to withdraw, to the figurative desert of the Appalachian countryside, to fight for our moral convictions while experimenting with self-sufficient living. Unlike many of the abolitionists

who fought against slavery however, we realised that a political solution would not likely be forthcoming to manage the effects of climate change or to regulate the behaviours of the global elites driving it. With Brexit, Trump, and now the election of Bolsonaro in Brazil, the outlook for the planet seems even dimmer. It was always our belief though that the only change that could ever really make a difference must come *en masse* at the individual level. It may never happen, but imagine the transformative power of millions of cogs in the machine opting out, cutting ties with the slave masters of the corporate state, refusing to do the work that is killing the future.

But we also withdrew to the countryside to follow our bliss, as Joseph Campbell, perhaps Jung's most famous American disciple, did during the years of the Great Depression. We withdrew to find ourselves in doing work that matters to us: reading, writing, growing our own food, making art, raising animals, and spending as much time as possible in the natural world of our surroundings.

As I write this closing paragraph, the world seems once again poised on the brink of chaos. Another global economic crash is looming, dangerous politicians hold the reins of power again, and the early effects of climate change are wreaking havoc around the world, just as the scientists predicted. I don't know what the future holds, but I think I finally understand what the work is for.

LIBERTY LAWSON

Salt to Salt

October 2018

The strip of sea separating India from Sri Lanka is so narrow that the god Hanuman, Lord Krishna's most devoted disciple, was said to have crossed it in a single, giant leap. The shores yearn for each other, earth-bound fingertips outstretched, a geomorphological Michelangelo. The shallow waters between the two peninsulas are punctuated with an ellipsis of archipelagos, white calcium carbonate cathedrals that can be seen from space, thrust from the deep by animals too small to be seen by human eyes. Corals are a paradox and a miracle. They are the Earth's greatest architects, fragile conglomerations of animal, flower and mineral. Alchemists that can turn sun into stone.

I push down onto the waxy surface of my surfboard, straddling myself in the quiet space between sun and moon. A turtle's nose appears alongside me, sighing. Her ripples lick my shins. I see this turtle almost every day. Her shell is mossy, freckled with barnacles, scarred with ominously large teeth marks. Almost as tall as me, and perhaps a century older. She has known these waters for a long time. Longer than we have. She knew times when fish only fed the men who speared them, a time when jellyfish weren't plastic bags.

Out on the wide horizon, cuttlefish dance in the lights of cargo ships, baby corals settle on upturned oil cans and whales wander, alone, in waters too wide to ever meet. The first star needles its way through the dusty pink haze as I turn to paddle slowly back towards the shore.

The bay is a day's journey from Colombo. Out of the train window, the asphalt peels back into dirt paths and electricity poles grow into coconut palms. There is no electricity in the crumbling stone building, a huge abandoned apothecary, seemingly so out of place on the edge of the beach, with sand spilling into its door frame. At sunset I lean my surfboard against a tree while I peel off my wetsuit, and with salt beads

clinging to my arms, I run my hand along the walls to find my way around to the back. An extension had been added to the original facade, and the new walls are rough, a conglomeration of huge shards of coral suspended in concrete.

It was here that I found a book, by chance, tucked backwards on a dusty shelf. The black cover had faded to a freckled grey, the pages gritty with salt. Arthur C. Clarke, *The Reefs of Taprobane*. Clarke's sci-fi fame has eclipsed his non-fiction pursuits, but he was an avid scuba diver, one of the first, in fact, and he took many of the earliest underwater photographs of coral reefs. Clarke spent a year winding up the coast of Queensland, exploring all of the same islands and atolls of the Great Barrier Reef that I have. He made Sri Lanka his home, fifty years ago, when it was still Ceylon.

I lay awake with Clarke's book, shrouded in a thick cotton mosquito net, listening to the distant thunder of the waves. He spent half a lifetime on the outer fringes of this very reef, dancing with kingfish, manta rays and barracuda, befriending curious chubby groupers. I read about corals 'too beautiful to be true'. At first, Clarke sought treasure, but the insipid desire for gold was soon eclipsed by the kind of curiosity and reverence the underwater world can't help but inspire in those who explore it. 'Unlike the jewels of the land,' he writes, 'born amid fire and inconceivable pressure far down below the surface of the earth, coral is the creation of life, growing only in the sun-drenched shallow of the tropic seas.'

I grew up beneath hazy blue eucalyptus canopies. The Three Sisters outside my bedroom window, incisors in the timeless yawn of the Jamison Valley. A landscape defined by change, ebbing and flowing to rhythms far beyond those of our human existence. The tallest eucalypts could splinter into matchsticks in a flash of lighting. Frosts and mists would colour the blue horizons white for weeks. The pulsing shriek of cicadas in the summer would only relent when wildfires tore through the bush, close enough for us to feel the heat on our cheeks. This land, what is now known as Australia, was birthed from fire. Even as black ash rained from the sky, we learned that this was something to celebrate, not mourn. Seed pods crack open in the flames, scattering a confetti of new life into the wind. Green ferns and saplings unfurl from scorched earth. Just as the scars of floods carve the way for waterfalls, the fires cleansed the land for rebirth, from incineration comes reincarnation. I was never brave enough

to peer on tip-toes into an open casket, but even when the flames licked at the doorstep of my parents' house, I knew that death is not always something we need to grieve.

The eucalypts taught me to make peace with endings, to find comfort in their promise for renewal. But these are small consolations compared to dying, as a verb, cruelly drawn out as it often is. Perhaps this is why slow deaths are harder to reconcile with. There is an uncertainty, there is no neat ending or release. The process of grief begins long before tragedy has struck, and with death it begins again, doubles back in doubt and transcends the simple linearity of Kübler-Ross' five stages of grief.

Long before I saw them in the flesh, coral reefs were the subject of many of my school projects. The biggest threat, I would recite to my classmates, was the crown-of-thorns starfish. In the nineties the gyres of plastic in the oceans had yet to be discovered. The greenhouse effect was talked about in abstract, distant terms. A problem for our children's children. A problem for generations we would never meet. My school, bound by dry brown coral-like bush, was far from the magic of tropical coastlines. Corals were phantasmagorical Darwinian psychedelia, and reefs were still the wonders of the world.

Corals are indeed strange and curious beasts. They exist beyond the linearity of human time, blooming over eons rather than seasons. Corals are complex symbiotic organisms with little regard for the neat boundaries and taxonomic categories we humans wield. They transcend the space and time of human life, they rest in the confluences of concept and reality, at the limits of our comprehension and dimensionality.

Corals, as we think of them, are microcosmic colonies of millions of tiny animals, polyps. Like us, they cannot help but transform their landscapes. The polyps excrete calcium carbonate, a mineral which builds up to form the solid limestone substrate of the reef. The individual polyps themselves are each just a few millimetres wide, only a mouth and a few tentacles, living tessellated in perfect symbiosis. Their tissues are home to zooxanthellae, even more minuscule organisms, capable of perhaps the most miraculous ability of all earthly beings, photosynthesis, turning sunlight into oxygen and nutrients for the polyp. In exchange for this, the zooxanthellae require 30-degree heat, year-round sunshine, crystal clear tides – and for millennia, this was not so much to ask. The waters around the equator provide ample sunlight to keep both tenant and

landlord satisfied, and so these tiny symbioses were able to build whole reefs and coral atolls, unfurling and blossoming along coastlines and continents.

There is a startlingly primal beauty in the reef, a place so dizzyingly diverse and complex, so inextricably entangled and so delicately balanced. The epitome of a billion years of co-evolution. It cannot be reduced to statistics, it is something that must be experienced, and Clarke hadn't written a book of logic, his sentences overflow with wild passion. His voice, wry, witty, eloquent, was comforting to me as I ran my hands on his pages. He was a witness to the majesty of these tiny organisms. Clarke died in 2008, but his philosophy was eloquently summarised in a profile written in the *New Yorker*, back in 1969, just after his first published book on coral reefs: '[Clarke's] style is a singular amalgam of scientific erudition, speculative imagination, and a profoundly poetic feeling for the strange and only partly understood objects – stars, moons, planets, asteroids – that populate our universe.' This was someone who dreamt of the stars and the skies and the depths of the oceans. Like me. In the words of Stanley Kubrick, Clarke 'can take an inanimate object like a star or a world, or even a galaxy, and somehow make it into a very poignant thing that almost seems alive.'

In 2016, the Great Barrier Reef, which covers 350,000 km² along the north-east coast of Australia, underwent a massive coral bleaching, the worst in recorded history. High temperatures and little cloud cover resulted in record-breaking sea surface temperatures. When waters are too warm, the zooxanthellae slow down the production of energy, and the polyp spits them out. The zooxanthellae are brightly coloured, and this process results in the coral bleaching to an almost fluorescent bone white. Real estate on the reef is usually lucrative, and the coral expects new tenants to swiftly repopulate it and colour its flesh once more. But if the water remains hot, the coral begins to starve. Eventually, brown algae spread across the coral surfaces, and its skeletons begin eroding back into sand.

I was fresh out of my undergraduate degree as the first swathes of billowing white unfurled, having just started a PhD researching coral ecology. I travelled to islands on the Great Barrier Reef, and I saw colour draining from the reefs, draining from the faces of the researchers standing witness. One in three corals bleached, and most of those died. Headlines called it *a once in a lifetime event*. But in 2017, it happened

again. A long and blistering El Niño hindered the cooling monsoon, and the corals that survived the 2016 bleaching were once again engulfed by relentlessly fiery tides.

Every time I sat down to write, every time I reduced this tragedy to a statistic, every time I wanted to project a message of hope, cynical nihilism poured out. The estimate of how much plastic was in the ocean seemed to double every few months, marine parks were suffocating under agricultural runoff, and funding was still going to mining instead of conservation. Eventually, I deferred my studies to work for an NGO in Southeast Asia. It seemed more acceptable to feel my heart breaking when I was knee-deep in oil-slicked water than in a windowless office. I worked with Indian fishermen whose nets brought up more plastic than fish. I built artificial reefs in Indonesia to nurse the corals smashed by boat anchors back to health, only to have the frames stolen out of the water and sold as scrap metal. I would dive with a knife, even on the tourist beaches, to cut out hundreds of meters of discarded fishing line that could slice across entire reefs, decapitating them overnight. I surfaced with my pockets filled with nuggety little *Drupella* snails, which thrive like cockroaches in polluted water and can grind their way across a coral, killing it, in a matter of hours. I realised that even my ethically produced wetsuit was made from microplastics – tiny nylon threads ready to collect toxins and poison marine animals or even the corals themselves. I had avoided thinking about death for so long, and now, in the technicolour reef I had dreamed of since I was a little girl, I was drowning in it. This was no seasonal bushfire from which the forest would rise rejuvenated, like a phoenix, from the ashen soil.

There are no fields of poppies here, and I wonder how this war, the Anthropocene, will be remembered, a war which we are doomed to lose but still we fight. Perhaps we will leave our plastic fragments embedded in the fossil record. Scars from where we tried to draw out the Earth's deepest treasures, oblivious that she had surrendered everything to us long ago.

Usually, you can hear the coral reef long before you see it. It hums with life. The clicking symphony of thousands of tiny shrimp, the crunching of parrotfish jaws and the rolling bass of the waves overhead. I was broken by the time I reached Sri Lanka, the sliver of hope I had clung to for so long unravelling at the seams. When I ventured out into the bay, in search of Clarke's wonders, the reefs I found were eerily quiet. Ghostly, still.

Algae-coated rubble. Murky, turbid water. A lone black and white banded sea snake, curled around a coloured plastic straw. After a few days, I swapped my diving mask for a surfboard. It was easier to imagine Clarke's oasis from above the surface. The reefs of Taprobane are fiction now.

For decades, battles raged beneath these gentle waves. On the white sand shaded by languid coconut palms, baby turtles were plucked from their eggshells before they ever saw the sea. Divers would empty bottles of cyanide over corals, scooping up the poisoned fish and selling the bare few that survived to markets and aquariums. The cyanide kills indiscriminately, all the way up the food chain, from the coral's tiny zooxanthellae, and eventually, to the divers themselves. Dynamite fishing is equally merciless. Glass bottles stuffed with layers of potassium nitrate or kerosene, dropped onto a reef, will blast out a hurricane of coral shrapnel and a shock wave that stuns fish and sends them to the surface by rupturing the organs with which they control their buoyancy. To this day, the high tides of most south Asian coasts litter the beaches with mounds of tinkling coral bones. The reefs, stripped bare, are now sandy graveyards.

Clarke made Sri Lanka his home, and he knew her waters well. Better than anyone, perhaps. Corals are conspicuously absent from Clarke's futuristic fictions. As one of the first to bear witness to the taking up of such heavy artillery, Clarke eventually refused to dive again. He knew the reef was more than a site or a statistic or a dot point on a heritage list. Some say that it was polio that he succumbed to, but either way, helplessly watching the gradual wilt of something you love is a uniquely torturous way to break a soul. It precipitates a kind of grief that coils deep within the bones. I feel it too. But I still wonder if our tears are salted with grief, or guilt.

I am perhaps part of the first generation to grieve an ecosystem. In the past, we have lost wars and countries. We have seen towns engulfed by waves, winds and lava. We have felt the threat of nature to humanity, and we have at times meekly tried to assert our control over her, but never have we seen nature self-destruct so violently, and with no-one but ourselves to blame. Witnessing loss on this scale transcends individuality. It is a grief that encompasses all humanity, that will unfurl in convolutions, over generations. And of course, we deserve this pain, if nothing else. Our arrogance just adds salt to our wounds to assume that Nature is waiting for human mercy.

Whether we leave this earth in search of another, or whether it shakes us off like flies off wanton boys, life will return to the incarnadine waters

left by the Anthropocene, the human age. The tides will change, and the dark slime of algae will recede back to the depths. This will happen on the earth's timescales, not ours. Corals grow only a few centimetres a year, making some of the enormous *Porites* boulders on the Great Barrier Reef thousands of years old. The reefs themselves are millions. They ebb and flow, the intermingling of species change, and spectrums of zooxanthellae come and go. The earth won't grieve for us pallid humans, on our knees along the shore. Corals are alchemists, infinitely cycling through their reincarnations. They have seen ashen skies and frozen seas, and sure as the summer bushfires clear the forest floor so the saplings can unfurl, the reefs will unwaveringly bloom again.

References:

Bernstein, J. 'Out of the Ego Chamber', *The New Yorker,* 9th August 1969.
Clarke, Arthur C. *The Coast of Coral*, Shakespeare Head, London, 1959.
Clarke, Arthur C. *The Reefs of Taprobane*, Shakespeare Head, London, 1961.
Hughes, T. & Kerry, J. 'Back-to-back bleaching has now hit two-thirds of the Great Barrier Reef', *The Conversation,* 12th April 2017, bit.do/BleachingGreatBarrierReef
Kübler-Ross. E. *On Death and Dying,* Routledge, London, 1969.

JASMINE DALE

Uncertainty

An early memory of a film contained scenes of a white hot wind of fire, irrepressibly destroying everything in its path, producing the X-ray shells of cars and incinerating people in its wake. A nuclear wind. Even from a black and white memory, the heat of an atomic explosion was undeniable. Perhaps all children have an intuitive response to such horror. The American film, *The Day After*, first broadcast in 1983, inoculated my being with a deep-seated and convincing unease.

By 1997 I was immersed in my university study, writing a thesis on the newly emerging WTO and its environmental regime. To mention 'enhanced global warming' and the possibility of 'extreme weather events' was a bit of a risk in those times at the University of Durham. Every mention had to be backed up with phrases like, 'the proposed model by some scientists' or 'in the case of the potential scenario as predicted by'. IPCC may as well have stood for Insignificant People Concerned with Chimeras for all the weight it had in those cobbled streets and historic buildings. It was fine to mention Lovelock and the Gaia hypothesis; terra firma there; respected, English, the right type and soon to come out and back the status quo, satisfactorily detached from the grit of the consequences of lifestyle. Daisyworld and algae bloom a far-off universe safe in labs and journals.

The notion of extreme weather events, caused by human military-industrial activity, was filed in my brain under likely, recognising the reality that 90% of pollution occurs in the process of the production of goods rather than the disposal. This recalibrated my notions on recycling and consumption in general. This thinking drew into sharper focus the strange absence of naming the mass production and the consumption of these toxic goods and their processes as being at the heart of climate change and CO_2 emissions. Was I missing something? Where did sustainable light bulbs come into this?

Ozone holes, PCBs and genetic modification of plants had also firmly taken root in my consciousness while studying during those Durham

days. It was dry there though, rational; no moist, sweet loam to grow from. I gave that time its due, changed my own consumption habits, changed shampoo, gave up packaged food. Couldn't afford it anyway. I wasn't in love yet.

Simultaneously, a different relationship was breaking through the soil, less cerebral. From my gut. When I read the geography books, words like bioregion woke me up. The loss of 90% of Britain's marginal wetlands conjured pictures and feelings for a whole new way of thinking that arrived on my doorstep. Wetlands, here! Or rather, once were here; still this was a revelation. I'd grown up in Bournemouth, where a beach meant seven miles of pavement, very few forays into the heath beyond, and where adders and orchids did their best in shrinking lands. My mindheart eye skimmed the coasts of Scotland and saw the hinterlands of Aberdeen as once a wildernesses of intense biodiversity. Southampton, Avonmouth, all the edges of our land seemed to reveal their true nature; the immense concrete infrastructures somehow lost their permanence as the ghostlike past of millennia of wetlands and waterways, rocks and birds flooded my perception with the world that was. A world that felt more real to me even in its eradication. Every weekend I was out with the conservation volunteers, the empty marshes of Cleveland and Teesside now the kidneys for ICI. Worlds were colliding.

Lush, muddy, diverse, unknown. Cloistered in the university library, the tendrils of myth and images of mesolithic settlements somehow seeped into my mindheart; the lost wilderness of these islands. It wasn't the fantasy of merlins and maidens. It was earthiness. I'd found an emotional anchor to withstand the onslaught of facts, analysis and impotency of environmental politics; more visceral than the Avalonian ghosts. Soil, silt, fecundity. The uplift of joy in my heart to know we were more than a load of towns, that we too once had a living breathing system as productive as a rainforest. No longer did the exotic and distant shores of hot countries have all the cards, demand all my care and consciousness. I could fall in love with this land, these islands. There was something more than good pop music to assuage the painful 1980s childhood of estate agent lined high streets and the gobbling up of the last wild patches: the slow worm's field on my road replaced by tiny, flimsy houses.

I can't remember how consciously I connected the transition to a low-impact lifestyle with what I knew about climate change. I liked the idea of taking responsibility for my ecological impact; certainly seemed cheaper than renting and less boring than a graduate career. Looking

back I wonder how much my upbringing of thrift and relative poverty just happened to coincide with having nothing for ethical reasons. I wonder how much was I not taking up space or resources because that was what I was used to.

The new millennium came. I was living in mud. My carbon footprint about as consequential as a single fly. Simon Fairlie once said if you want to reduce people's energy use, take away their mains electric and services. It works.

I soon learned that canvas is flimsy and goes mouldy. Building a simple shelter in the woods seemed like a solution. I filed the study of climate change into the archives and set sail on the choppy waters of self-reliance. A low-impact life. Candles to back up LEDs run by tiny currents of small solar arrays. Water always from a spring. Toilets a simple seat and board between body and earth.

By the time Al Gore had decided to buy up as many micro-renewable energy outfits as possible and then let the world know it was time for renewable energy, I'd gone off climate change. Nearly a decade had passed between my exposure to this gargantuan threat and its inconvenient Hollywood debut starring Al. It seemed like a convenient truth for him to manipulate; create a sinister agenda where people were inundated with fear without mentioning the obvious reforms that were needed. A bunch of sixth-formers could work out the links between mass industrial agriculture, deforestation, the endless application of nitrates and accelerated climate change. Why didn't the eminent Gore mention those specifics? Was it too obvious to mention the links between all the stuff being made and the consequences? Apart from composing a punk haiku, 'what about the nitrates', to penetrate the dogma of carbon and the weird absence of warfare and farming and manufacturing from the watered-down public information, I didn't give a fuck for Al Gore's convenient omissions regarding climate change.

When the financial crash of 2008 showed up and Woolworths closed, it could have been framed as a welcome opportunity not an economic tragedy.

As the reverberations of the banking crises were felt around the planet, those of us living off the grid didn't notice. We were manifesting our dreams in earnest. The immediacy of babies in benders under the canopy of oaks. Everyday basics of shelter, water and energy, growing food, slowly evolved to be formalised into an ecovillage. However, any motivations amongst us of saving the planet quickly became just striving to meet

our basic needs. Within a few growing seasons, psychology took over from ecology and age and life took hefty swipes at even the best-intentioned of us. Our ecovillage became an egovillage.

Sincere attempts to design and envision our project, to evaluate and reform dysfunctions, were experienced by some as attacks. Disgruntlement germinated into dissent, the movement turned into an amorphous cause. It became an absent and distant king that we were to sacrifice our lives to. Which single movement was it? The Low Impact one? 'Back to the Land', the County Council Development Plan maybe? It was never really clear. A bowel movement that digested and excreted our well-being as a useless by-product of contemporary living? Us measly ants, living on mediocre wages, transforming meagre land into biodiverse havens. A one-planet ecological footprint mostly enjoyed through poverty, while penalised and monitored for every single transaction we make. A new feudalism while the world was burning fossil fuels.

Yeah, sure we had cars, we drove around. It wasn't the aftermath yet; we still lived miles from town and needed to go to shops, kids had to go to school, mostly. The most zealous opponents of our simple lives were retired conservationists ready to stick our fuel consumption in our necks like a blade, to wrench our petty sacrifice of mains services from our hearts as if it meant nothing, while pissing in their own drinking water, burning more oil to transport it and clean it. Striving, always striving. Repair the soil, bring in the mulches, build up the structure. Replant the woodland, reforest the edges to create microclimate. Tend to every tree, bush and plant with respect. Like a mad orphanage manager, I ran round that field tending to each of their needs with a businesslike eye for time and motion management; just enough attention to ensure the minimum of their well-being.

Thrival. Three years on my land after the crash of 2008, a subtle hum began to emanate from the saplings and shrubs. Only a metre or so high, their bodies occupying every spare inch to capture and store sunlight. Comfrey offering up its fat, sturdy growth again and again and again, its tiny prickly hairs to remind me it wasn't all tough and gnarly. Black, moist matter connecting the sparseness to create resilience as straw, manure, deadwood and compost covered the thin soil.

Five years on my land, birds and frogs and rats abounded. Lizards under stones, new plants, self-seeded, greeted me with the exuberance of toddlers. The electrics thrummed from the turbine and river. Pickles, jams, root crops and wine saw us through winters.

Now seven, eight years on, there's more food than we can possibly harvest. As blackcurrants give way to peaches, even sweet fruits and our quiet haven cannot soothe the wounds of 2017. We've moved on in the community from barely polite meetings, physical threats and youthful optimism. We're tired from years of debating, straining to see the other point of view. Finally I am defeated by the collective madness all humans are party to. As by tacit consent the ecovillage machine tears out my boundary through negligence and ignorance and short-sighted self-interest. Just like in conventional life. The final line has been crossed for me. I beat the bounds of my neighbours' property with my *bodhrán* at dawn for five days as the eclipse passes. We're still hanging in there. By a thread. Forget the children's holidays, forget building our house. We're in a last ditch attempt at thrival as we engage in the business of structural reform, untangling the most basic mistakes of group governance, a morass of misunderstandings that has become the shadow of our lives.

A turning point was reached; we'd done all we could to mitigate climate change in our own lives and our load on the earth's systems. We grew windbreaks to retain the soil, gave back wildlife corridors to the little folk. We planted good honest alder, ash, downy birch, willow and oak to soak up the extremes of wind and rain and runoff. Microclimates of elder, wild cherry, autumn olive and sea buckthorn flourish, more birds and berries than I ever dreamt of. Water, electric, fuel, sewage all dealt with by our own hands, harnessing the elemental forces for the necessities of an off-grid life. Not feeling smug, just grateful to have the opportunity and skill around me to relieve my conscience of further contribution to war and greenhouse gas in our atmosphere.

Now-reclaimed glasshouses skilfully hug the contour of our hillside. A palace for our tender fruits and vegetables. A repository for our grey water and the deluges of West Wales rainfall. An artful design to move the heat of summer up to the earth-sheltered mansion we've been building. A home to suit all seasons, a home adapted to whatever extreme weather may come. A home designed to accommodate generations of multiple families should economics and societal stresses create refugees in our lifetime or in years to come. A home built with love and the sweat of 400 good people.

*

My story started with a film. A scorching into my early memory of the possibility of man-made disaster, of immense fire. This story kind of ends with another film and another fire. My climate change exemplar house, raised from our own trees, stone and subsoil got its day of glory. It got on the shortlist for best-ever Grand Design, it was described as a clarion call, how new human dwellings could be the means to meet the climate challenge. How vain of me I wonder to feel proud of Grand Designs' praise and Kevin's respect, although I honestly never identified with being a green hero. After all, I'd kind of forgotten about my thesis and climate change; I was just locked into my low impact life as much as anyone else might be tied to a more conventional lifestyle.

The winter solstice came. Time to shut the borders. Taoism and gardening remind me; when decay has reached its zenith, breakdown occurs. Life can then recreate itself and make way for the approaching forces of light and spring to break through.

New Year's Day, 2018, a full moon. The day dawned bright and sunny, unseasonally warm and balmy for January. Everything was up to date: cleaning, mending, cooking. I'd even had a bath and written to the BBC to express my distaste at the blatant inciting of Islamophobia through a poor joke they had inserted a minute before midnight to tide us into 2018. Now I was feeling smug. Just a few adjustments to the children's rooms before they returned from the grandparents for a new year.

Strolling in the sun to the house to change the pillow slips. Black, black smoke pumping and billowing from upstairs windows.

Holy Fuck.

An instant recognition of the source of my profanity, that all my plans to outwit uncertainty and create security are over. My climate change resilient home is very much on fire. Holy, in its sacred potential, as a fire is often a cleansing, an initiation. My instantaneous acceptance that this was going to have to be processed as a shamanic, sacred incident, whether that's bullshit or not. Shadow and light. Destruction and creation. Entrances and exits. An opportunity to face demons and bring them into light.

Fire extinguishers, 999, panting, running, hiding myself in brambles while the fire crew got started. Crouching like a small animal in the hedgerow, a survival strategy to minimise my trauma so I could get back on the horse once the drama was over. Neighbours, both loved and those I detested, stand round gaping. Dog happy as anything to see so many

men in our garden, a good opportunity for people to throw sticks, she thinks.

I host the people I like with brandy and comforting words, zipping off to stop the fire spreading to my glasshouses with butts of rainwater. The sun continues to beat down, azure sky. Fire and wind thoughtfully send all the smoke over the hedge and up the hill in a north-easterly direction, sparing us and the fire crew from a sense memory of the event. Fluent Welsh comes through me to assure the compassionate police, now arrived, that there is no suspicion of foul play. I have the wherewithal to glance at a difficult neighbour and take a second as to whether it's worth getting her arrested. I decide the sacred aspect of my 'holy fuck' profanity would disapprove of such spite. I leave it be.

Cob, roundwood timber frames and straw bales are not that interested in burning, so the fire eats all the plastics and settles on wool and recycled polyester insulation to keep it going. By nightfall, the fire crew makes the decision to demolish the house, lest it smoulder and re-ignite. Now I'm truly speechless. Having been locked into a self-build cycle for 15 years I totally assumed we'd begin the re-build in the morning. Perhaps I am in shock. Firemen cry on the BBC Six O'Clock News at the destruction of the finest craftsmanship they've ever seen and their personal distress at witnessing the end of a dream. The end of a most ambitious stab at doing things well, doing it all with integrity, compromising nothing in ecological and creative terms, made with bare hands and wellingtonned feet. An irony for me to host the whole of the local village, now dressed in their fire gear; my heartfelt hope to be accepted into the local community, to realise my long-held dream to invite them all over after the house was completely finished to celebrate our lives in this beautiful region. However much difference there is between indigenous Welsh people and neo-indigenous land lovers like myself, we are united in our devotion to West Wales. And now they *are* here, the guys from Jewsons, the rugby coaches, electricians, the lot. And, now, the house is truly *finished*.

*

We assumed our house would be permanent, as the narrative of civilisation also assumes of its structures and its provisions for an unknown future. I wonder how society will exhibit grief as events unfold. My fire showed me how to acknowledge and allow the grief; showed me my burning anger and denial. Those cyclical feelings have cut their own path through me.

I do consider whether my fire might be a manifestation of some suppressed shadow stalking our lives, of how utterly desperate we became those last months. The fire itself seemed very involved with its own experience. Quite focused and intent. There was no malevolence. Only from our domestic point of view do we concoct a story of tragedy concerning events such as this. The fire swept down into our lives with a job to do; quite workmanlike in its manner.

As the full moon rose on New Year's night of 2018, the remnants of our best laid plans burned with the quiet intensity of a solemn ceremony. How strange my place is here, I remember thinking.

A year later I am still in utero, hibernating until I can root myself. There's no edible, perennial landscape around me now. I am dormant. My rented home is heated with gas. I'm learning new limits to my power and discerning how or whether at all to work towards my old notions of security. I still believe in the importance of stories. I have come to know the unconditional love of friends and strangers. I now have no choice but to live with uncertainty.

K.C. SNOW & J.P. HURST

Grills

Seven days out, the gas stations ran dry. We were too late, and even if we had wanted to evacuate, where would we have gone anyway? A secret about Florida hurricane destruction they don't talk about on the news is that modern building codes are pretty damn resistant to wind damage. Find a place away from the shore, away from previously-drained swampland – away from sinkholes – and the wisdom of riding out climate cataclysm in 'America's most vulnerable state' is actually some cosmic-brained intel we're willing to share with you.

The live oaks and the southern yellow slash pines don't give a fuck about your sustained hurricane-force winds. They appreciate the cleaning, frankly. Debris from Hurricane Irma was minimal, stuff our stationary brethren wanted to shed anyway. Boarded up and stoned, we slept through the eyewall passing just overhead. Chirping birds and blue skies greeted us in the morning. Devastation did not.

But the petrol pumps were still out and the stores closed and the power conglomerate said 'could be a month or more' before we get you turned back on. We lost most of our condiments and maybe a hundred dollars of vegan meats and cheeses made a thousand or more miles away. Tragic, in other words. And we hated that rose bush anyway, and *yeah that ring of pavers around the roses is kind of a perfect fire pit, so fuck it, grab a piece of that wire fencing*.

In making our dooryard fire, we ended up clipping out the rose bush – too thorny – and using whatever copies of the *Nation* we'd not yet recycled. We lost nary a shingle nor window, but ten inches of rain had soaked every log in the woods.

All around us, everyone else started their generators. Cooking commenced with natural gas, propane, camp stove, charcoal, or electric hotplate. That was 'our first', so we were a bit in the wind. Spent so much time boarding up the house (not many in the neighbourhood did) that we hadn't really planned for the day after. Or the day after that. *Or the whole fucking month*.

An odd thing to know about this place – a rural, master-planned community of large-acre tracts connected by dozens of miles of wooded trails – is that the original builder went bankrupt. You can spot the phases of development by the powerlines; pre-US Savings & Loan scandal development equals buried utilities. Everything built *after* 1989 means power poles and strung-up power lines. Said live oaks scandalously carved up to bring copper-trafficked communiqués and all the electrons you can eat through the treeline, vulnerable and exposed.

*

We weren't newbies to building fires. KC learned how to build a fire when she was a kid. Wisconsin is cold as a motherfucker. It used to be so cold there they'd cancel school because the wind chill would kill them. Like a true woodsman, she used a half a bottle of lighter fluid to get it going.

JP had had the advantage of knowing that someday, he'd build a *romantic* fire. Surprise future-her when she least expected it. While backyard camping with buddies, he'd purposely honed fire-building skills with wood and kindling of all stripes, to later make it through any pressured performance.

His first stage was an average Colorado snowfall and a day off work for both of us. We walked to the bodega, rented a movie, and picked up some firewood outside the grocer – measly wood bundle wrapped in heavy plastic of course. He used cereal boxes as kindling; she tried to act unimpressed. *No butane?!*

Though KC hadn't *needed* the romantic surprise, JP's heretofore hidden skills were most welcome. A Great Recession and several moves later, he taught her to build fires in North Carolina where the house was drafty and the winters harsher and longer than we had been told. She bragged of our fire-prowess to all who would listen. *No starter fluid* she would say at the dinner parties bleeding them emotionally dry. Another few moves and we landed back in Colorado again. We had 'upgraded' to multiple fireplaces all commanded by switch. One even by wireless *remote*.

*

Don't forget to change your batteries. The weather radio, a dozen lighters, and starter logs all now live in the laundry room in Florida. Ready for the next event. The next cataclysm. The next fire and the next wet firewood.

In the aftermath of Irma, the pumps eventually filled up again and the solar salesmen set out in their cars. One even tried hawking a diesel generator alongside an array. Photovoltaic sits atop our newly-constructed barn, so maybe the vegan cheese will make it through the next outage. There's 200 feet of bright orange extension cord to hook up the fridge to the panels. Off-grid solar is *illegal* in Florida, as are leased systems. To send power directly to the house, a series of breakers and inverters and semiconductors must trip and organise and reorient in concert. Then we can prop the door open and run out the electrical cord to power the fridge. After Irma, the bugs were awful. We didn't have solar then so we didn't have to leave the door cracked to charge the phones or power the modem.

So we hope for November instead of July hurricanes – though, in the near future, hurricanes will happen everywhere, at all times, in all possible months. Or, the North Atlantic currents stop altogether, and there's no more weather anywhere. At least, not like we can expect or imagine.

*

Our first meal cooked on the homemade grill was lukewarm at best. We reheated some leftovers. We tried and failed to make tea. We soon realised we weren't prepared in any way, shape or form to live outside the electrical grid. We were 'outdoors people'. Comfortable with dirt. But the 'indulgence' of electricity was something neither of us had ever lived without for longer than a few days.

In the evenings, we didn't miss Netflix – we still had our… *and chill*. But no lights at night meant no reading. That was the worst part of our power outage. Just sitting in the dark. Sweat getting old. And *not enough* people lost power, so we still couldn't see the stars.

Outside, we listened to the other generators choke and clog and rustle; even sleeping in the *lanai* with 85-degree weather and full humidity didn't make us give into the desire to burn yet more fossil fuel. As we lay under its screened-in roof, we began to hear the screech owls tremolo like miniature horses. We smelled the evening forest fragrances no book has yet helped us pinpoint. The hum of generators eventually disappeared as

gas ran out. The night was reclaimed. And we drifted off to sleep atop beach loungers.

An hour into that hard-fought sleep, we were awoken by the house returning to life. Its veins filled with pure electricity, and we sprang forth in cheer. We hugged. We were saved. It didn't last long. The darkness returned. We frantically checked our phones. Updates were the same: weeks still; months or more in some places. Without power! Without life. We faced the sorrow. We thought of our piddly stove and the *is this toxic?* grill-mesh. We sunk back to silence. To our sticky embrace.

*

Fifteen minutes later, our power was back, and for good. In the year since, only a car-crash and a lightning strike have caused the solar system to kick over and produce for our house directly. We still haven't drug out the extension cords yet.

In America, the West Coast is already aridified and likely to go up in smoke. The Southwest has rain bombs and aridification. The Midwest has ticks, and extreme: cold, heat, wet, *and* dry, along with pollution runoff from factory farming. New England is already overrun by Lyme's disease, and the entire Eastern seaboard will be subject to sea-level rise and massive housing displacement.

We've chosen a strange little spot in Florida. It's two hours from any job. Our neighbours regularly shoot automatic weapons. We go on dates to Pizza Hut. We've bet on this place to shelter us through whatever climate collapse is coming. And even though we've gotten solar, before the next hurricane, we're getting a fucking grill.

POLLY ATKIN

2545 Petroglyph Way

for Ulrike and Frank

When I landed they said the smoke from the fires
was making the sky heavy. The forested
mountains screened by white. Tonight
it oozed a magnificent lilac, the giant
sunflowers inching away with the light.
My feet are filthy and have been for days.
Buddy is barking on the side deck, and the moon
is a single headlamp flickering between
the trees behind the house: the old kind,
yellow and blurry. Down Darby the cows
are bellowing at the first star's thin high murmur,
calling more and more stars forward
like small deer out of the woods.
That liminal place the road is,
concrete at the edge of vision.
At home, it is already tomorrow.
Tomorrow I start to go home
where the fire sleeps, smouldering in intent
under peat, not yet present, not gone.

GARY COOK

Donhead Oak (1588)

Ink, charcoal and watercolour on paper

This acorn germinated in Donhead, Wiltshire around 1588. 2,200 species, from birds to beetles, fungi to lichens are dependent on oak trees. Some of the 2,200 are written into the background of the painting.

SARA HUDSTON

Power Lines

A foggy morning, early. Seen from above, the Marshwood Vale is a bowl filled with shifting heaps of whipped meringue. The haze hides hedges, trees and lanes. Only the pylons poke through, looped together with high-voltage cable, stomping westwards across Dorset into Devon. A spur zings up to Hinkley Point, where the nuclear reactor squats on the pink-grey mud of the Bristol Channel.

Under the mist blanket, down in the Vale, I walk in luminous vapour, shot through by the new-risen sun. A man died here one morning in the mid-1960s, one of the crew building the power lines. He fell from a high girder and broke his neck.

My dog bounds over wet grass, following a ragged hedgeline of overgrown field maple, blackthorn and hazel. He's scenting deer tracks in the dew. I stump behind, conscious of the hard, bone-breaking clay underfoot. It's been a long drought and the pasture is lumpy and unyielding, rebutting my boots.

We're going to the pond. It stayed full all through the dry summer, fed by a seeping spring below. The sides are steep and shady, fenced with barbed wire and sheep netting. Mature oak and ash trees grow down to the edge, their roots deep in black loam. It's not a place for children to play.

The autumn sun is rising directly behind the pond trees, projecting misty beams through their branches, creating an orb of light. I can see this globe in three-dimensions, nestling in the twigs and sending out fiery rainbows as it shifts and dazzles. It's *there*. Not a hallucination, not something you need to use make-believe to see.

'Ah,' thinks my brain, neurons firing, 'beautiful. Look how the sunlight refracting through suspended water droplets in the mist has created a marvellous illusion, a natural hologram.'

And then I'm not exactly sure what to do next. I have identified and explained the spectacle, I've appreciated its beauty for a few moments and now, to be completely honest, it's getting a bit boring. So I open up

the camera app on my phone and take some photos. Perhaps I can capture the experience. Then I can post it on Instagram! I'm behaving like those 18th-century tourists who went all the way to the Lake District and stood with their backs to the mountains so they could view the scenery nicely framed in tinted hand-mirrors.

I feel mildly ashamed and tell myself that photos will document the sight and help me remember – as if the thing itself were somehow not memorable enough.

The photos, of course, are hopeless. They don't show the 3D effect, the glistening, nuclear power of the sun projecting itself and burning up the mist. It's merely some trees and a smallish blob of light. I have documented what I saw and rationalised its causes. What more is there?

As a child, the poet William Blake saw 'a tree filled with angels, bright angelic wings bespangling every bough with stars.' Evidence of a strong imagination, possibly mental instability; why not a plain account of what was there in front of him? He saw angels and the face of God because he cherished his inner vision. At the age of nine he was already weaving powerful legends. If I shared Blake's cosmology, his inner sense of meaning, might I have seen something similarly remarkable?

What would others have seen? People have lived in this part of Dorset for thousands of years. There was a Roman garrison at Waddon Hill and perhaps a shrine where the church now stands. Before the Romans came, Iron Age Celts built forts here on the borderland between the Durotriges and Dumnonii tribes. They practised elaborate burials, interring individuals with bronze hand mirrors engraved with flowing patterns, coiling like river currents. A thousand or so years earlier still, someone dropped and lost a polished stone axe head a couple of fields away from where I am standing. Then it was a damp, woodland wilderness. Further back again, Palaeolithic hunter-gatherers left scatterings of carefully worked flint tools.

These people bequeathed evidence of a fertile, symbolic life. Looking through their eyes, perhaps they would have seen more than I did. They could have observed the same thing as me and anchored it to a wider meaning. How feeble and washed out my response was in comparison to the past – when people lived as part of Nature, in tune with its wonders!

But I'm kidding myself if I think that. My melancholia is not new. It's part of a grieving that has been going on for 200 years or more. Blake was born and grew up in London, aware of its 'marks of weakness, marks of woe.' And I'm not the first to stand 'on this pleasant lea,' and wish for

'glimpses that would make me less forlorn'. In his sonnet 'The World Is Too Much With Us' William Wordsworth, the man who loved daffodils, lamented his lack of response to the living world: 'For this, for everything, we are out of tune;/It moves us not.'

Both Wordsworth and Blake were writing during the Industrial Revolution. They witnessed the fires of industry (Blake's 'dark Satanic mills') destroying green land rich in natural life. In their day, the contrast between the country and the city was profound. Some conservationists and ecologists (Colin Tubbs, for example) think that British farmland reached its maximum biodiversity in the late 18th century. Shaped by generations of non-mechanised, non-chemical agricultural practices, the countryside provided niches for large numbers of specialised species.

That biodiversity is lost and we are bereft. After more than two centuries of combustion, our environment is cityscape, frayed edgeland and empty countryside. The emptiness of the countryside is not the same as the sense of remoteness felt in an intact natural ecosystem. Places like the Marshwood Vale are officially labelled 'tranquil' and 'remote' by Natural England but they thrum with human activity. You probably won't see anyone, but you'll hear distant traffic noise, the electric hum from dairy sheds, a bass rumble of out-of-sight farm machinery, sizzling power lines, the whine of a chainsaw, passenger jets overhead and the occasional tree-shaking crump of low-flying helicopters. At night the big farms are lit up like football practice pitches. Yes, it's green, yes there are woods, yes there are still many acres of it all, but much of the wildlife is gone, burned out by our deployment of all that buzzing energy – a disturbance that reaches down into the soil itself, scalded with strong chemicals. The farms have never been so crudely productive.

We have done this with no foresight, without paying the least attention to possible consequences. At the beginning, industrialisation made life better for some of us; we lived longer and in more comfort. When evidence emerged about the despoliation we were causing, we refused to believe it. That refusal is part of our dismissal of death. I think that many Western people don't really believe that they will ever die, even though they know the evidence says they will. Few of us have witnessed a human death. We see it as an event that happens out of sight to foolish or unlucky individuals who let themselves get old or sick.

Two years ago my mother-in-law died. She was in her mid-seventies and had chronic pulmonary disorder, probably caused by years of working in offices and factories where other people smoked, and by living a

relatively sedentary, indoor life of locked windows, fumes and furnishings. I visited her in hospital when she was gravely ill. She was in a high dependency unit and the doctors said there was little they could do. Yet there was a scared relief in her eyes when she told me about her emergency admittance.

'I thought I was a goner in the ambulance!' she exclaimed.

She spoke as if she'd had a narrow escape but normality had now been restored. Over the next couple of days, she was frightened by her powerlessness but gave no indication she realised that her end was approaching, or was even possible. Her attention was on inessentials. She ticked off one of her sons for dressing scruffily when he visited. She didn't want to put her disabled husband to the bother of seeing her – there was plenty of time for that. When I last saw her (and when her husband of more than 50 years finally did visit), she could no longer speak. All her energy was taken in writhing and twisting as she fought to breathe. In the end, her sons had to accept the consultant's advice to remove her ventilator. She died shortly afterwards. Outwardly, her final hours seemed peaceful as she slept calmly, full of pain-killing morphine, her sons at her bedside. But I am haunted by the thought that she only realised she was dying when she could no longer communicate, and that this understanding, so long repelled and disbelieved, came as a terrible surprise.

Western culture was founded on faith in cures (if only for the soul rather than the body) and the Christian miracle of the resurrection. Few of us now believe in Christianity but we have not lost faith in the promise of endless life. We tend to imagine that science and 'healthy living' can avoid death. Medical breakthroughs are always reported in terms of 'lives saved', never 'deaths postponed'. When people cease seeing their own lives as fragile and impermanent, it becomes much harder to believe in the more abstract concept of species death. And however difficult it is to admit that your personal actions contribute to ecocide, it's even tougher to accept responsibility for the actions of others as well, especially if we decide they are bad people. But unless we accept collective responsibility and act together, nothing can be changed deeply enough to help. I argue that climate change and habitat destruction are not caused only by those bad people over there, that we wrongly imagine are somehow quite different from us good, sensitive types over here. This includes those with great wealth and power who are deliberately working against change even though they know this is an emergency. Any 'othering' of them is an evasion of our own nature. As Wendell Berry writes in his essay 'Think

Little': 'A protest meeting on the issue of environmental abuse is not a convocation of accusers, it is a convocation of the guilty.'

The British environmental activist Mark Cocker uses the same Berry quote in the final chapter of *Our Place*. He writes that in 'the 20th century, the British drained their landscape of wildlife, otherness, meaning, cultural riches and hope.'

Is that why I stand by the pond, looking at a miracle, and wonder what to do? I know how denuded this environment has become. And yet, I *have* reacted. There is still something there, even in the numbness and grieving. These lines you are reading came out of that moment. They were sparked by the interaction of trees, pond, sunlight and mist.

To respond and to communicate while knowing that we are dying – that has always been the human condition. To honour our elders and those who came before us, even as we know that their time has passed. To understand the tradition we work within, but also to be true to the here and now. To find ways of expressing it so that meaning can be shared and at least a handful of embers passed on. That's our task.

EMILY PASKEVICS

Honeybees and Wildfire

Ontario, Canada

When you work with honeybees, you learn how difficult it is to keep them alive. My family has kept bees for three generations, a hobby started by my paternal grandfather before he emigrated from Latvia to Canada. Over that time, it's become harder and harder for the bees to survive. They face numerous challenges related to climate change and human interference, ranging from pesticides, memory and cognitive issues caused by the reduced diversity of food choices, habitat loss and low nectar flow as the result of drought, record-breaking heat waves followed by extreme winter cold, not to mention smoke, wildfire and disease.

This past summer, fire was everywhere. British Columbia was burning, California was burning, Norway, Greece, the UK and even Arctic Sweden were burning. It was also a landmark season for forest fires in my home province of Ontario, where the fires spread further south than expected, down through the boreal forests that Edward Struzik describes as being 'born to burn'. Our family hives are safe in southern Ontario, far from the fires for now. But while visiting some beekeeping friends with my sister in Kenora, a city in the northwest of the same province, I witnessed first-hand the reaction that honeybees can have to the intensity of heat and flame.

*

My sister and I drove for two days across Ontario. It's around 1,000 miles from Toronto to Kenora, something like 20 hours of driving northwest until the city becomes a long-distant memory. We enjoyed the transition of the landscape from the Mixedwood Plains in the south into the Boreal Shield ecozone of the northwest, with its signature jack pines. We first saw smoke when we reached Lake of the Woods, rising to various billowing heights above the surrounding trees. The haze that we'd almost

convinced ourselves was a kind of fog as the late afternoon light turned to a murky orange-grey, was caused by the forest fires burning all around us.

The day following our arrival in the small city was warm, still hazy but otherwise perfect for the bees' work of foraging for nectar. But by mid-morning, a time when the hives are usually fizzing with activity, our friend's colonies were inactive. A few stray bees would venture to the entrances before retreating back into the dark of the hive. We feared the worst: a pesticide kill, perhaps, or disease, maybe parasites. But when we gently knocked on each hive, we were answered with an instant buzzy roar that let us know that they were still in there and very much alive.

Pulling open the lids of the hives with our bee smoker ready, we found that the bees were already docile. We noticed an abundance of sticky propolis, a caulking made of tree resin, nectar, bee enzymes and water that is used to seal the cracks in the stacked boxes, keeping out ants, drafts and moisture. We prised at the lids with considerable effort until they cracked open, releasing the smell of earthy pine, beeswax and sweetness. Locating the queen of each hive, we noted that other than their general docility, the bees' behaviour did not demonstrate any of the confusion or disorganisation that are the warning signs of a diseased colony. We closed the hives without having used the smoker at all. It wasn't until later that we wondered about the effects of the lingering smoke from the nearby fires.

It's worth noting that the western honeybee can be found thriving on every continent, except Antarctica. The species is believed to have spread naturally through Africa, the Middle East and Europe, while humans are considered to be responsible for further expanding its range by introducing it into the Americas, Australia, New Zealand and East Asia. As they spread, honeybees learned to adapt to local environments – including the synchronisation of colony cycles to the seasonal rhythms of local flower resources, forming winter clusters in colder regions, variations in foraging behaviour depending on the local climate, and migratory swarming patterns in tropical conditions. In this way, their resilience is inborn, inscribed right into their genetic memory.

From the earliest records of beekeeping and honey harvesting, smoke has been used to suppress the defence mechanisms of bee colonies. Essentially, smoke is used to 'keep them calm' as their homes are raided, robbed or tended to. The presence of smoke disrupts chemical communications within the hive. Bees respond to smoke by hunkering down and

consuming honey, a behaviour that can also be an indication of swarming during the spring. Swarming is the natural process by which a colony manages its population: the queen leaves the colony with a large group of worker bees, in order to form a new colony elsewhere. The bees left behind cultivate a new queen and carry on with their work.

A correlation between honey consumption and swarming is often made without fully understanding the ecosystem of a hive. Importantly, bees preparing to swarm in early spring must first prepare the queen for flight, because she is much larger and heavier than her progeny. When preparing to swarm, attendants put the queen on a diet for a few weeks to help her get in shape for the rigours of flight. There is less preparation time in the face of an approaching forest fire, and the queen is too heavy to fly. And without a queen, of course, the colony dies. In the face of danger, healthy bees usually stay at home and collectively fortify the hive, ensuring adequate food supplies and gathering together in the dark recesses of their hives.

Often overlooking native wild pollinators, bee die-off is connected to our 'kept' bees, the domesticated descendants of the imported European honeybee. But recent studies have taken a closer look at the relationships between wild bees and wildfires. A research team led by Geoff Tribe in South Africa suggests that wild bees local to Table Mountain National Park do not flee in the face of forest fires. Instead, the colonies construct a protective 'firewall' of propolis over the hive opening, then consume honey and retreat deep within. In this way, the bees wait the fires out. They live off their ingested honey stores for an aftermath of around three weeks, when fire-loving plants appear and begin flowering.

Although this research focuses on the bees of a specific geographic location, these findings point to inherent species-wide behaviours in response to fire. Parallel research emerging from the College of Forestry at Oregon State University suggests that moderate and severe forest fires create conditions that can lead to the greater abundance and diversity of wild bees. There is also a study from York University in Toronto indicating similar results for the response of bee populations to 'ecological disturbances' (like fires) in the oak savanna ecosystem of southern Ontario.

The problem for domesticated honeybees is connected to the critical timing of these fires. In Ontario, the July fires compelled them to stay inside their hives and consume their stores of honey and pollen at a time when their populations are typically at their highest: around 50,000+ bees, a sturdy workforce that is more than double their numbers in the

spring and autumn. Towards late summer, the fires can restrict their ability to gather enough food as the honeybees start preparing for winter. Their nutrition is compromised. This dearth period poses a particular challenge for our northern bees, faced with the impending long, cold season.

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After tending to the hives, my sister and I left chicken waterers out for the bees so that they wouldn't have to venture far for hydration. (Among other functions, water is used for evaporative cooling in the hives.) Then we walked down to the lake through the smoke-seared forest. The fires hadn't reached this far, but the air was ash-scented. Pine sap was dripping from the trees, still warm to the touch, like candle wax. The fragrant forests around Lake of the Woods in Ontario include trembling aspen, paper birch and jack pine, along with white and black spruce, and balsam fir. The falling needles contribute to acidic soils, allowing an abundance of blueberries to thrive in the understorey. Importantly, the jack pine requires intense heat for its hard-sealed cones to open.

As we walked we started noticing distinct popping sounds, something like twigs snapping here and there. Eventually, we realised that it was the cones splitting open, their seeds freed and ready to burrow down into the ash – carrying on the cycles of growth to burn and ash to regrowth, which are as old as the forest itself. Time is measured by fire for these woods, as countless little phoenixes rising wild from the ash. In turn, the bees, like the fires, always return to their wild ways.

Salvaging and gathering, foraging and repairing, honeybees have never been truly domesticated. They are not tame and don't really depend on us to live. Our kept bees are of the same genetic stock as wild bees – those who make their homes in the hollows of trees. All we can do is offer them shelter and hope that it will be enough to convince them to stay for a while. Hives are only temporary; at any moment, they can decide to leave. And wherever they choose to go, the bees will reorient themselves and get back to work – making wax, collecting pollen and storing honey. In the way that life returns to the forest after it burns, honeybees return for nectar after the smoke.

References:

Crane, E. *The World History of Beekeeping and Honey Hunting*, Routledge, 2000.

Myers, R.L. *Living with Fire – Sustaining Ecosystems & Livelihoods Through Integrated Fire Management,* The Nature Conservancy, 2006.

Pindar, A. 'The effect of fire disturbance on bee community composition in oak savannah habitat in Southern Ontario, Canada.' PhD diss., York University, 2013.

Struzik, E. *Firestorm: How Wildfire Will Shape Our Future*, Island Press, 2017.

Tautz, J. *The Buzz about Bees: Biology of a Superorganism*, trans. D. C. Sandeman, Springer, 2009.

Tribe, G. et al. 'Firewalls in bee nests – survival value of propolis walls of wild Cape honeybee (*Apis mellifera capensis*).' Springer-Verlag, 2017.

EMILY STODDARD

Hivemind Elegy

They tried to warn us, told us the truthteller
would speak in apples.

And now the apple trees grow alien –
fully formed, but fruitless.

When we lost the garden, we did not know
it would begin with the bees.

Migration patterns may soon
become escape routes,

already we speak of the earth like a lover
we're leaving three sleeps too late.

Mars and moon – we are on about colonies again,
the most prophetic wing in the museum of desire.

The children swarm to see astronauts, drones.
A cherry-red Tesla orbits like a beacon,

because we mark our heroes by the flags they plant.
The apple trees unseed themselves

in quiet, the way a lover reveals her disbelief
simply by how she clears her throat.

PAUL FEATHER

Li

☲ Li: Fire; clarity; clinging to the power of higher truth as a fire clings to wood.

We need to learn from egalitarian religious and especially extant indigenous groups that the emphasis of our society must be on process; not on the creation of things and the accumulation of monetary or political power, but on the acknowledgement and maintenance of relationships…[1]

– Derrick Jensen

When the flames of these stories die low, you can hear the star-song. Most often, the stories roar so loudly that I cannot hear the stars, but I believe now that the flames of these stories are guttering out.

Stories are a fire that burns words. Truth is a story that dances between the words. The words contain the truth as the fuel contains the fire. The fire cannot leave the fuel; it rises up and out, ever clinging nonetheless. As with the fire, so also the stories rise up out of the words that can never contain them – clinging to them until they are all consumed. The story is Li, the fire clinging to her truth.

We named our daughter Li. That's another story – some other time, perhaps – but my wife pulled her name from the *I Ching*; a reminder of her truth in a moment of questioning; the fire filling the space between the fuel; the truth in the space between the words. Do you see? The stories that are sputtering now in their last moments are the bonfires of humankind. The great roaring blazes of kings, culture and corporations. The words have been all used up. There is still a great clamouring that drowns out the star-song, but sometimes there are lulls now, and I can see the truth – dancing.

To tell a story about truth, one must leave a lot of space between the words. Truth isn't like they told me it would be. Truth dances. It turns into fiction when you aren't looking and then back again. For instance, we have such great power in creating abstract fictional narrative that we have created a whole new type of truth – the shared fiction. Google, the Dollar, and White Jesus are all shared stories that shape our reality in a profound way. We have built truth out of fiction. Google isn't real except in the collective imagination of its users, employees, investors and detractors, but that collective fiction is, in itself, real and true.

It appears that there are different levels of truth. Fiction and truth swirl up together like the eddying flames; fiction becomes truth – and maybe that hasn't ever mattered so much to us before now – and truth becomes fiction. I have met the modern truth-seekers ensconced in cramped university offices with books overflowing from the desk onto the floor. I have been employed in that meticulous search for data – the numbers that hold the truth up. There is truth there, in abstraction, but I tell you truth is a fire, and numbers do not burn.

I want to give you an example, but I am afraid that it will frighten you. We have given these numbers and equations so much power; they carry the weight of a sacred and forbidden text. Why is it forbidden? Don't worry – they won't burn you. Perhaps things would be different if they did.

$$\underset{\text{(Methane + Two Oxygen)}}{CH_4 + 2O_2} \rightarrow \underset{\text{(Two Water + Carbon Dioxide)}}{2H_2O + CO_2}$$

This, in the language of the sacred chemists, is the combustion of methane. This is fire, and here again we see that there are different levels of truth. Both truth and fiction swirl together in the flames; but truth on the level of abstraction is hardly debated, so let us examine the fiction.

The fiction lies in reification. *Reify: to regard something abstract as a material or concrete thing*. We easily presume that methane, oxygen, water and carbon dioxide are material and concrete things. They are not.

CO_2

People do not like to be told that their stories are myths, and we will cling to the guttering flames of the old stories – stories of carbon dioxide, $E=mc^2$, neurotransmitters and gravity. They are sacred to us because there is some truth to them but, as ever, the truth is in the spaces between the words. It dances between the words until it consumes them – so many sticks in a fire. The words of the old stories are not the truth, and there's no such thing as carbon dioxide.

You see, it doesn't mean anything to say that carbon dioxide is a carbon atom joined with two oxygen atoms. Most of the fires that we know burn carbon with oxygen, but what is carbon? It's an element – number six on the periodic table. Its atomic mass is 12.011 amu. (Don't be frightened – they are still just numbers.)

Number six on the periodic table means that carbon has six protons in its nucleus and usually brings six electrons to the great universal trading table where it is paired up with an atom of oxygen or two. But what is an electron made of? Do you see now? We can't explain carbon dioxide without moving the essence of what carbon dioxide is from the molecule to the atom to the subatomic particles. We have not captured that essence. That essence is the truth that dances around the words.

I chased these truths for years in the lecture halls and libraries, and I scribbled in the margins of my textbooks when I caught a glimpse of something that shimmered out of reach. Now I find these scribbles many years later – some particularly fascinating resonance in the periodic table marked with an asterisk – and I remember what I was looking for.

I was looking for the steadfast faith that I found in the tree on the edge of the soccer field where I sat between classes and read an old beaten copy of the *Tao Te Ching*. She was not an imposing tree. There were others on campus more magnificent and aged, and I was not then the sort to personify a maple. Nonetheless, as I sat immersed in these Taoist principles, the tree herself became for me a symbol of the flowing non-action of the Tao, her rooted life-force juxtaposed in my mind against the restless manipulation of my engineering education. How is it that such a little tree may become the centre of one's life for a time? How is it that the trunk I considered to be little more than back support on a sunny afternoon should become the metric by which I measure truth? That my fire – my Li – should cling today to the wood of that maple?

I never found that relationship in the textbooks, and so I left.

Carbon has a very long story. Forged billions of years ago in the bellies of other stars, she broadcast herself in massive supernova explosions whose gases were swept up again in new stars – new generations of nuclear reactions birthing new elements – it's a very, very long story. Oxygen has another story (also quite long), and their stories dance together. I say that the fire is telling those stories. The trees heard the stories with their roots buried deep in the ground, and they tell it now in the eddied smoke and embers flung far into the sky.

The reification of carbon – making her real and concrete when perhaps she were better off an abstraction – confuses mirrors with causes. Carbon is a mirror. You can see the truth of the world in carbon's diamond mirror, and perhaps the truth-fire is too bright to look at directly. But the reflection is not the cause of things; it is only a reflection of the cause. Is it reasonable to premise that carbon is who she is because electrons and protons are who they are? Electrons and protons are just more mirrors. *Orbital diagrams, the periodic table, and quantum mechanical models of the atoms don't explain the behaviour of carbon and oxygen. They mirror that behaviour.* There is no causality here. It is reflection. In the making-real of fictional mirrors, we mistake them for causes, and this leads us to a false sense of understanding and confidence in our control of those causes. We believe that we know things that we do not know.

We cannot control carbon dioxide. There is no carbon dioxide. There is only the relationship that is dancing in the fire.

Plants tell the truth

Your digestion is a fire. The chemical reactions that occur in the fire in your gut take the form:

$$\text{C, H and O-based food molecules} + O_2 \rightarrow H_2O + CO_2$$

As my chemistry text explains, 'The end products of this biological oxidation are carbon dioxide, water, and energy, just as they are when an organic fuel such as methane is burned with oxygen in a furnace.'[2] I want to draw the lines for you to see what this fire is – this story that is burning

in your belly. The bacteria that feed this fire are living in your gut and living in the soil. They are all the same. David Montgomery and Anne Biklé tell us:

> If you were to turn a plant root inside out, rhizosphere and all, you would see that it is like the digestive tract. The two are, in many respects, parallel universes. The biology and processes that bind soil, roots, and rhizosphere together mirror those in the mucosal lining of the gut… The gut is the human version of the rhizosphere.[3]

The stories that are whispered to the trees in their roots – to be flung into embers in celebration of the great supernovas of the stars – these are the stories in your belly. Am I being too poetic? Does none of this seem useful to you? I suppose what is useful depends on what you are trying to do.

What I am trying to do is to navigate within a world when I have discovered that the map I was given as a child is inaccurate. I was led to believe in a linear world with direct lines of cause and effect that can be traced back to reified abstractions like atoms, temperature or capitalism. It turns out that I navigate relationships much more successfully if I abandon that approach altogether. Having thrown out the map, naturally I look for guides instead. There are a few plants – *Cannabis*, for example, or *Nicotiana* – who have long held a slow conversation with humans on the nature of fire and soil. I find it *useful* to listen to their stories. These are the same stories that are in my gut. They are stories of Li – fire clinging to truth.

I grew up in Kentucky in the '80s, shortly before the bottom fell out of *Nicotiana* (tobacco), which forced the entire state to restructure the economy that we had built upon the domestication of this plant. I escaped by one generation the childhood task of stripping tobacco at harvest time. I only did it once on a short visit to my uncle's farm, and on this occasion I absorbed enough nicotine through my hands to become sick by the end of the day. I'm told this is common. Now – re-examining my relationship to plants – I recently found myself courting a small *Nicotiana* in the greenhouse, hoping to win permission to pull one of her leaves. The leaf is cracked on the central vein and hangs toward the ground. Surely she doesn't need that one? Eventually, never sure how to know that permission was granted (perhaps a bit brashly, but with good intentions and I hope with consent) I plucked the leaf.

She now reminds me to be careful in my relationships. The smoke of her fire bites my tongue and steals my breath to remind me to be quiet when I can. I share her with my wife when we need reminders to only say what is real and true.

The smoke of *Nicotiana* is one lens upon the truth. I find it useful to listen to her because of what is happening to the truth – with our reified scientific abstractions on one side, and reality TV on the other. I am not saying that reality TV causes millions of people to lose their grip on reality. I've already said that cause and effect is a cheap parlour trick. I'm just observing that we are becoming a little unhinged. Every truth is wrapped in fiction; every noble cause tainted with injustice. My wife makes prayer bundles by wrapping tobacco in coloured cloth. Where did this tobacco come from? This cloth? We do not know. What is the meaning of a prayer offered with industrially produced tobacco? We do not know.

We are inundated with information, but every truth is floating untethered. We have become a culture where the format of our information means nothing. There is a spectrum of truth that runs through reality TV, science and fake news. The truth has become unmoored from the old traditions that once formed the bedrock of our knowledge. Perhaps there is some healing in these prayer ties. Perhaps they are just one more vehicle for tobacco taken from a tired field.

Gregory Bateson details a theory of schizophrenia in which patients who develop schizophrenic behavior are responding to repeated double bind situations where they receive simultaneous but conflicting messages.[4] So, for example, if a mother combines claims of love (content) with facial expressions of disgust (form), this presents a double bind where the child can't know how to properly interpret the message, *because the content of the message does not match its form*. Being dependent upon her mother, the child cannot withdraw, and the double bind is completed when the child is punished equally for responding to either half of the conflicted message.

We are a double bind culture. The information we are receiving is all formatted so that we believe it should be truthful. It's in a textbook, on a newscast, or delivered from a podium or pulpit, but this means nothing, or at least it does not mean what we think it means. The truth is unmoored from the format, and we find ourselves equally in the wrong for acting upon any secondary information source. In this double bind, we can no longer distinguish the conspiracy theory from run-of-the-mill politics, entertainment from oppression, or left from right. Prayer is

tinged with exploitation; activism with injury. There is nothing to cling to. There is no Li.

Have a cigarette, but don't forget to say please. The plants will not lie to you.

Massive information

Let us try another tack. It is fair to be preoccupied with things. It is reasonable to wonder how something can be true if it does not have a real and concrete expression. Real things have mass and energy. Let us not drift into poetry and superstition when we have important matters at hand and problems to solve. I purpose then to show that relationships are as important as things because *relationships are things*. That our reified mirrors – carbon, protons, the very foundations of matter – are missing some pieces. That when we unified matter and energy ($E=mc^2$) we neglected a third type of *thing* – a third type of matter-energy. This third thing is information.

Nothing real exists in isolation, because everything is integrated into relationships with other things. The cells in your body, the gases in a fire, and humans in a community are all constantly exchanging information. Information is the medium of relationship.

When I sit in contemplation on this cold morning before a fire for warmth, it is cheap and *thing*ish to say that the chemical reactions of the burning wood release heat that warms my body. In truth, there is a much more complex relationship here. Never mind that I remember the tree to whom this wood belonged; this is the last of a great oak – all burned now except for the great beams lying in the shed and the sawdust slowly rotting away in a pile by the mill. But even if this were the unconscious burning of fuel at the whim of a thermostat, delivered through pipelines without my acknowledgement, there is still relationship in this warmth. This fire is telling a story about carbon and oxygen, sunlight and soil, and about me and my relationship to all of that. The language of that story is the dancing flames and heat; my body also tells that story in receipt of the warmth. I am a character of carbon and oxygen, and so some of this story is about me.

When we sit with the fire, it is a communion. We are sharing in the story of the fire. This communion creates a thing. Perhaps we should call

it a sacrament, for it is an outward sign of the reality of the communion. The communion of two things creates a third thing – a true thing that has mass – a beingness of the shared story. This mass wholly embodies the information that is shared in the relationship. Did you know that we can turn information into energy and mass? There is a demon in physics yet! Do not be afraid.

Maxwell's Demon turns information into energy. He has haunted physics since the mid-1800s, exorcised and revived time and time again. This demon is a thought experiment that explores the possibility of creating usable energy by manipulating the random movements of particles or parts of a system. So, for example, two containers of gas could be separated by a door, and the demon could wait for random particles of gas to bump into the door. By adroitly opening or closing the door at opportune moments, Maxwell's Demon could increase the temperature of one container by allowing fast-moving random particles to enter the container from the other side of the door, and passing slow-moving particles from the hot side to the cold side. This manipulation of random movements would create a useable energy difference between the two containers. Because we could imagine that the demon might not use much energy to open and close the door, this would create a sort of perpetual motion machine.

Over the decades there's been a lot of discussion of this idea, but this is not the place for it. However, in 2010 Shoichi Toyabe, Takahiro Sagawa, Masahito Ueda, Eiro Muneyuki and Masaki Sano demonstrated this process experimentally in the laboratory for the first time by successfully converting information into energy.[5] I'll wager that we'll call that experiment the most important scientific event of the 21st century, but only if we live to see the 22nd. In the meantime, no one appears to have noticed. There's an equation that goes with it (don't be afraid): It's $mc^2 = KTI$. The 'I' stands for information, and the 'm' stands for mass. Of course all of that is equal to 'E' for energy. You already knew that.

In this experiment, the physicists manipulated the random movements of a particle in order to increase the energy of the particle, just like Maxwell's Demon. They did this by creating a feedback loop in which the particle responded to information about itself. That information enabled the random motion of the particle to be manipulated so as to increase its potential energy. The particle shared information with the controller of the experiment, and the controller shared information with the particle. The particle's mass increased in response to the sharing of information.

That sharing is communion and that mass is sacrament. That sharing is relationship and that mass is truth. So relationships have mass. In the quotation that introduces this essay, when Derrick Jensen observes that we must cultivate a society that emphasises the acknowledgement and maintenance of relationships rather than the accumulation of *things,* he is observing that these relationships are truths that can't be neglected in a balanced society. Those relationships have mass and energy, and rather than attributing causality to our reified scientific abstractions, we must learn to acknowledge that real systems are driven by relationship to the truth, a truth which is only ever mirrored in those abstractions. Real systems are driven by story.

To know that, in a very physical sense, our relationships are real changes everything. What does it mean about my identity if I know that my 'self' is embodied and enmeshed with 'others' in some as yet poorly understood (actually, completely ignored) physical web of information? What can we say about time, knowing that the all-too-solid past and future are embodied in a system's massive informational structure – that genocide and slavery, say, persist today in the physical structure of shared fictions like the Dollar, Private Property, and Monday? There is more to this than we know. We must rethink everything.

The flames of the old stories that drive human culture are guttering out. The fire clings to the wood – Li. The truth clings to the words. Can you see it dancing there, mirrored in the metaphors and equations? Can you see the piece that is missing from the old stories as they die low? Can you catch the gleam of the broken edge and the glimmer of truth dancing in this fusion of mass, energy and information? Can you hear the star-song? I do believe it is growing louder.

References

1. Jensen, D. *A Language Older than Words*, Chelsea Green, 2004.
2. McMurray, J. and Fay, R. *Chemistry*, Prentice Hall, 2nd edition, 1998. p.988.
3. Montgomery, D. and Biklé, A. *The Hidden Half of Nature: The Microbial Roots of Life and Health*, W.W. Norton, 2016, p.244.
4. Bateson, G. *Steps to an Ecology of Mind*, University of Chicago Press, 1972.
5. Toyabe S., Sagawa T., Ueda M., Muneyuki, E., and Sano, M. 'Experimental demonstration of information-to-energy conversion and validation of the generalized Jarzynski equality', *Nature Physics*, Dec 2010, Vol. 6, pp. 988–992.

EMILY A. F. GARCÍA

What We Sow

Bisabuela Elisa, did you ever pause
in your back-stooping work between neat garden rows,
eyes closed, inhaling pungent basil, sweet lettuce,
sharp tomato leaves, just-moistened soil?
You glare at me from across the years,
past the photographer, past afternoon sun.
Around you in the yard, chickens scratch;
outside grows the promise or threat of revolution.

I have travelled further than even you did
when you followed your children north.
Tucked behind a ridge overlooking the Big River,
we have space enough to grow food,
but our well is not deep enough to water
every plant, every day, and every year brings less rain,
more heat, lingering smoke, haze.

Bisabuela, though I dread to face you, who wanted
one of every kind of fruit tree that grows in Cuba,
it is our great-grandchildren's wrath I fear most.
Will their earth still feed those who feed her?

The fuel that brings across too many miles
what we cannot coax out of our own soil
worsens the heat, chokes the air, melts the ice.
Out on the farms, many who for years have done
the back-stooping, hand-cramping work are too frail
to breathe smoke all day, every day. Others disappear
under the promise or threat of deportation.

Bisabuela, in my hurried early-morning watering
among the bees, too often I see only the weeds
I have not pulled, the seedlings I could not save.
My leeks stop growing as thirsty fir and juniper
drink more water. Hungry voles ruin lettuce,
chew through vines heavy with unripened tomatoes.

What is it all for, I ask a friend one smouldering day.
You would like him, Bisabuela, he would remind you
of your son, an artist, no stranger to hand-cramping,
eye-straining work. What is it all for, I ask,
a handful of stunted beans? A few perfect tomatoes?
Yes, he says, I think that's exactly what it's for.

Note: 'Bisabuela' is Spanish for 'great-grandmother'.

CHRISTY RODGERS

A Ceremony in Willka Qhichwa

There was a cold, fast river bordered by a strip of bright green fields between sharp, arid peaks. The river ran, falling and falling, from high plain to cloud forest into jungle. Outside the village of Ollantaytambo, between the plain and the forest, a number of strangers were camped. They wore incoherent clothing, bought little and smiled too often, so the local people avoided them.

But they'd offered to pay the village priest very well for his time. Many priests and priestesses had been assembled to instruct the strangers in sacred knowledge. The strangers listened raptly, their smiles like a rictus that never left their faces.

If the village priest had thought he'd receive some deference from his peers because this was his home place, he was mistaken. The holy men and women came from the far reaches of the continent and agreed on nothing. In the secrecy of their councils they argued bitterly, often over ceremonial practices. Behind this was the knowledge that all were at fault. They were neglecting their own faithful to minister to the strangers for pay.

The strangers were leaving soon, so the local priest hoped such troubles would depart with them. Their gathering was ending with a series of ceremonies, and it was his turn to lead the *temescal*.

Many others had already done so; the sweat lodge was one practice they did share. The local priest was curious to know how the strangers had comported themselves in it. Diffidently he asked the priest of a distant northern people how things had gone for him. The man gazed vacantly at a point on the horizon as he answered.

'The strangers are weak. If you give them too much heat they complain, like babies.'

This was not really surprising, but not helpful either, thought the local priest. Without great heat there was no purification, no return to the centre. What was the point of performing the ceremony, then? But after

all, perhaps the purification of strangers wasn't his responsibility. What he did have to consider that the others did not, was how his actions might affect his home place. If he were careless, the villagers might learn of it and lose faith in him. Or he might anger the guardians of the place. The promised payment was a great deal to a man of his poverty, but it wasn't enough to live on forever. His livelihood would still depend on how he fulfilled his duties in his own place.

He felt uneasy, but went ahead with preparations for the temescal, chewing a wad of *kuka* leaf mixed with lime to clear his mind.

In the morning, he gathered large round stones from the riverbank and set them in a log fire he'd built to heat them. He erected a small dome of willow wands and covered it with mud wattle, wool blankets and a large sheet of blue plastic, first marking the ground and digging a pit in the centre for the heated stones. When the structure was complete, he blessed it. The stones in the fire were just beginning to glow.

The face of the sky changed all day long, from stark, cloudless blue to bright clouds passing high above, and finally a heavy, leaden gray in the late afternoon.

The strangers began to arrive at the appointed hour. He'd named a time because they'd asked for one, knowing that this had nothing to do with the readiness of a thing to happen. That everything happened only when it was in readiness was such an obvious truth, he was unsure what else could be understood by people who did not grasp it. So, as the strangers appeared, he continued his preparations without either slowing or speeding his work.

They sat idly on the beaten ground, some in animated conversation punctuated by merry laughter, others silent, eyes closed, in communion with themselves alone. Neither attitude was congruent with the temescal, but the priest thought he understood; knowledge could only travel by example. Until now, they'd had no guides. That was his task.

When the stones among the flaming logs were glowing like small furnaces, he carried them inside the lodge on a sturdy shovel. He spoke another blessing. Then he signalled to the strangers that they could enter and told them haltingly, using the conqueror's language they required, how to do so in a respectful way. Awkwardly, but with earnest effort, they followed him in. He seated himself across from the doorway so that the first soul the entering spirits would see was one they already knew well.

In his soft, slow voice, he explained about the prayer circle, and the songs and petitions they were to repeat before passing through each of

the four doors that led to the centre. Pale bodies glimmered like shreds of mist in the red glow of the heated stones, surrounded by an almost palpable darkness.

'If the heat is too strong, put your face against the earth – it will refresh you,' he told them. 'It's good for your spirit. Don't be concerned about it.' They appeared to understand, nodding and smiling. One man, he noticed, was already twitching strangely, as if there were insects where he sat, and grinning disconcertingly at the woman sitting next to him. She stroked his hand absently.

The priest began to sing the welcome song for the opening of the first door, which was for the ancestors. He told the strangers what to sing and they sang; their voices, although unschooled, made a pleasing sound. He asked them each to offer a prayer, going around the circle in turn. Then he sang again, dashed water on the stones. The heat increased. Only the twitching man worried him slightly; it was hard to see in the dark, but the man seemed now to have an expression of alarm frozen on his face, his eyes wide and locked in a fixed stare. The priest prayed harder, swaying slightly as he led them all toward the first door. He'd decided to shorten the time between the opening of each door just a bit so that he could heat the lodge as was required, but their unaccustomed bodies would be relieved. He was almost finished with the last song when the twitching man uttered an unearthly cry that stopped him in mid-phrase.

'What is it?' the priest asked the woman by the man's side. She held his head in her lap now as he shook and moaned.

'The heat, the darkness, he's frightened,' she replied.

'Why did you let him take it?' he thought he heard one of the others say to her under his breath.

'We are nearly to the first door,' said the priest. He spoke to the man: 'Put your head on the earth as I told you.'

'It's too dark, it's too dark,' the man moaned. 'Let me go, let me out now!' He broke away from his companion and scrambled on his knees to the doorway, tearing at the blanket that covered it. Then he was gone.

The priest muttered an apologetic blessing to the spirits. He'd forgotten to say that acolytes must request their permission to leave once the ceremony had begun; hastily he explained this now. The man's companion sat staring blankly, as if she hadn't noticed his disappearance.

'You'd better go after him,' hissed another voice. 'He could get lost.' Slowly she seemed to realise what had happened and crawled towards the doorway.

'Say the blessing first,' the priest reminded her. She repeated it and disappeared.

The priest finished the last song a bit hurriedly and told the others to file out. He let them stand in the evening air cooling their bodies for as long as he felt was possible before calling them in again.

'If anyone else has this sickness, please don't come in now,' he said sternly. They filed in, seating themselves more efficiently this time. One whispered something to a companion. He thought he heard a groan, then a tittering laugh. The feathers one woman wore in her hair were bedraggled now and she had to keep pushing them away from her face.

The stones in the pit were like red eyes winking in the darkness, then hissing mouths as he tossed more water upon them. The heat was a solid wall at first; slowly the air allowed them to breathe it again. Some of the strangers bent to touch their faces to the earth. Others removed strings of beads or bracelets that were burning their skin.

The second door was for the animals and plants; each participant would offer a prayer to a spirit animal, then sing songs of thanksgiving to all the plant and animal kin. The priest sang an opening chant and asked the stranger seated nearest the doorway to say the first prayer. She spoke timidly: 'I'm not sure…' but as she hesitated, one of the feathered and beaded ones began to howl like a dog. Another took up the call, throwing his head back; a third made a bird-like sound and moved his arms like an excited child. 'Please pray in turn, with respect,' the priest told them firmly, and they quieted down.

He felt suddenly that they needed more heat, not less. Their spirits seemed to be full of a strange energy that reminded him of the dross in metal that pops and spits when it burns. He'd never encountered this in his village and was unsure how to treat it, but decided he would try more heat. So far, except for the sick man, they hadn't complained. He dashed another ladle of water from the bucket beside him onto the stones. This time, many groaned openly as the wall of heat closed in.

He tried to start the prayer circle again. 'If you don't know your spirit guide yet, wait; it may come to you. You can thank any animal or plant you wish; they are all our relatives.' A few strangers spoke up uncertainly, trying to pray as he asked. Then the one who'd made the bird sounds cried out, 'I'm an eagle! I'm soaring over you!' Another didn't speak at all but loudly shook a rattle he carried, as if it were a child's toy.

The priest began a song, not caring this time whether they could follow him or not. He saw that the lodge was full of their strange ailment; his

task must be to treat it. He swayed and sweated, eyes closed, only half listening to the voices around him. Some were trying to follow his chanting, some to finish the circle of prayer, he guessed. His capacity for their language, never great, was diminishing as the voices of the ancestors and animal spirits grew louder in his ears.

When he announced that the door was open again, the strangers burst out chaotically and poured water from the bucket he'd carried outside over their steaming skin, gasping and shivering. Night had fallen during this round; the clouds were torn, revealing a thin moon hovering over the shadowed peaks. It seemed to the priest that fewer strangers re-entered the lodge when he called them back – there was more room in the darkness and several of them used it to lie at full length, caressing the earthen floor with their hands and turning their faces to it.

The third door was for the living people of the earth, especially the sick, poor, and loved ones. The priest set aromatic herbs on the stones and as they burned a sweet smoke was released. The strangers coughed and mumbled prayers under his direction. One woman, lying down, a dirt-streaked breast flopping out from under her loose, ragged shirt, began weeping openly and repeating, 'Mama, mama, do you love me?' The priest ignored them; he was looking for their spirits now amid the many flashes of the invoked guides that were filling the air. But he could see no light from the strangers. It worried him that their spirits didn't catch fire no matter how much heat he brought to ignite them. How could their guides find them if they gave off no light? He chanted feverishly, rocking on his thighs, carrying their darkness like a burden. 'Let me take it on,' he prayed. 'Let them come alight.' The helpful spirits flashed and beckoned, but the strangers remained dark. Their bodies moaned and muttered on the floor of the lodge.

As the priest sang them to the third door, he was thinking about the fourth. It was the door that led to the centre of the earth, and from there to the stars. The songs and prayers were the stairway to the fiery unlit heart of the world. But the strangers seemed unable to draw strength from the way he was preparing, or to use it for their descent. He'd begun to wonder if their journey wasn't just clumsy and untutored; perhaps it was not happening at all. And even if he did manage to get them there, could he bring them back? Death and nothingness were strong at the centre. Without a guide, no-one could touch death and return.

The ones left inside the lodge were silent, or murmuring words he couldn't hear. Those still sitting had their heads between their knees,

trying to breathe. Those lying on the ground looked stricken. Their hands twitched and stroked the earth; their eyes were closed. All of them seemed to have forgotten him and his songs, and to be wandering in some private world he couldn't reach. They groaned as if their lungs were seared with each breath, as if they were trying to breathe the hot stones themselves.

'What should I do?' wondered the priest.

The other priests must have put on a show, he decided. They hadn't really sought to help the strangers find their souls or spirit kin. His temescal had not been overly powerful; the heat was no more than was correct for initiates in his village. What was the sickness that left the strangers so weak in the face of it?

'Perhaps the spirits can't help them,' he thought. 'But what does it mean for the temescal? What can I do?'

As he pondered, he heard words coming from one of the strangers lying on the floor. 'Open the door, open the door,' she was saying, her voice like a feverish child's.

'She's sick, it's too much, open the door,' another moaned. Others picked up the refrain: 'Open the door, open the door.' Their voices were desperate and pleading.

He tried briefly to keep singing, but it was no good. The lodge was breaking up; he could feel it as if the earth itself were splintering. The spirits flashed: benign, indifferent, departing. His attempt had failed. He would have to end it.

'The door is open,' he lied. 'Go out.' There was a scramble near the doorway. The woman who sat nearest wasn't moving; a man clambered over her in his desperation to reach it. 'Ow!' she protested loudly, bitterly. Another grabbed the bucket and ladle from beside the fire pit.

'Say the blessing first,' the priest begged without hope. He muttered it himself as the others struggled out into the night air.

When he came outside, they were gathered around the wooden bucket, jostling to reach it. 'You're taking too much, give me more!' one said with a sharp laugh. They began splashing one another playfully.

The priest went back into the lodge and carried the stones out, softly chanting. He placed one stone at each of the cardinal points on the bare, beaten earth. They flickered and faded, cooling.

The strangers ended their play and turned to watch what he was doing.

'Are we finished?' said one.

'Yes, it's done,' said the priest. There was a silence, and the strangers shifted about uncertainly. Some of them began to gather their things and move off.

'I thought there were four doors,' someone said mildly, without accusation.

'Only three this time. It's good,' he lied.

When they had dispersed, and the priest had taken apart the structure, he sat for a long time under the night sky in the warmth of the fading stones. He looked up: the sky had cleared again and was sprinkled with dim stars. But for the first time he could remember, the spirits seemed very far away. For a dizzying instant, he thought the world might be empty of them. He shivered. Wrapping himself in the blanket he carried, he lay down on the bare earth to sleep.

The next morning, he went to the daily council of priests. There was an uneasy silence as he entered. He greeted his fellows without smiling because he was tired, but with the necessary respect, he thought. Their responses were terse and unsmiling in return. He sat down on one of the blankets spread over the ground of the meeting place.

The one who was acting as speaker for them all that day stood up. 'This is the last day,' he said. 'There are some problems to report.' He mentioned several small things: ceremonial items missing, ceremonies postponed or cancelled without proper communication with the strangers. And then, staring uncomfortably over their heads, he added in a dull voice:

'Some of the strangers complained that a lodge ended too quickly last night and they didn't receive what they were promised.' He made the smallest gesture with his head towards the local priest.

'They also told us a stranger disappeared after he left the lodge. He hasn't returned or been found, and they're afraid.' He paused, as others murmured and nodded. They seemed to have heard this already.

The local priest sat in silent amazement. He felt as if the ground under him were deserting him – his own ground, his own place. Fear and shame climbed up his skin.

'Can you speak to this, brother?' the spokesman said to him at last.

'I hadn't heard…' the priest began, 'I don't know about this man.'

'We should do all we can to find him. Neither we nor the strangers wish to involve the police.'

The police… the priest sat unmoving, frozen with fear. What was happening? Why was his place removing its protection, deserting him in this way? What offence had he committed?

'Yes, of course,' he answered finally. The meeting was over, and the others stood talking in low voices. 'I'll bring help from the village,' he said loudly, and they parted to let him through.

The priest hurried across the big encampment toward the hanging footbridge that spanned the river. Beyond it was the path that led to his village. On the way, he passed many of the strangers engaged in dismantling their brightly-coloured tents or talking to one another in their rapid, animated way. No-one looked at him strangely or even appeared to notice him at all. He could not tell if they knew about the missing man, and did not wish to ask.

He reached the bridge and strode to the middle of the ancient, swaying span. There he stopped, turned, and stood very still, gripping one of the frayed rope cables that ran along its sides. Below him was the fast, cold river, roaring as it tumbled over house-sized boulders carved into grimacing shapes by its torrent. The slender wooden planks trembled slightly beneath his feet.

From where he stood no-one else was visible, and no-one appeared. He stared up at the white sun rising over the valley deep in shadow, then down again into the tumultuous water. The whole scene had become strange to him, even though he recognised it in every detail; it was like looking at the face of a dead parent.

He tried to start off again across the rest of the bridge to reach the path. But he found with amazement that his limbs refused to move. Even his head would not turn, as if he'd sought to cross one of the glaciers on the high peaks at night and been frozen in his tracks by a bitter wind. He wanted to call out in alarm or supplication, but no sound came.

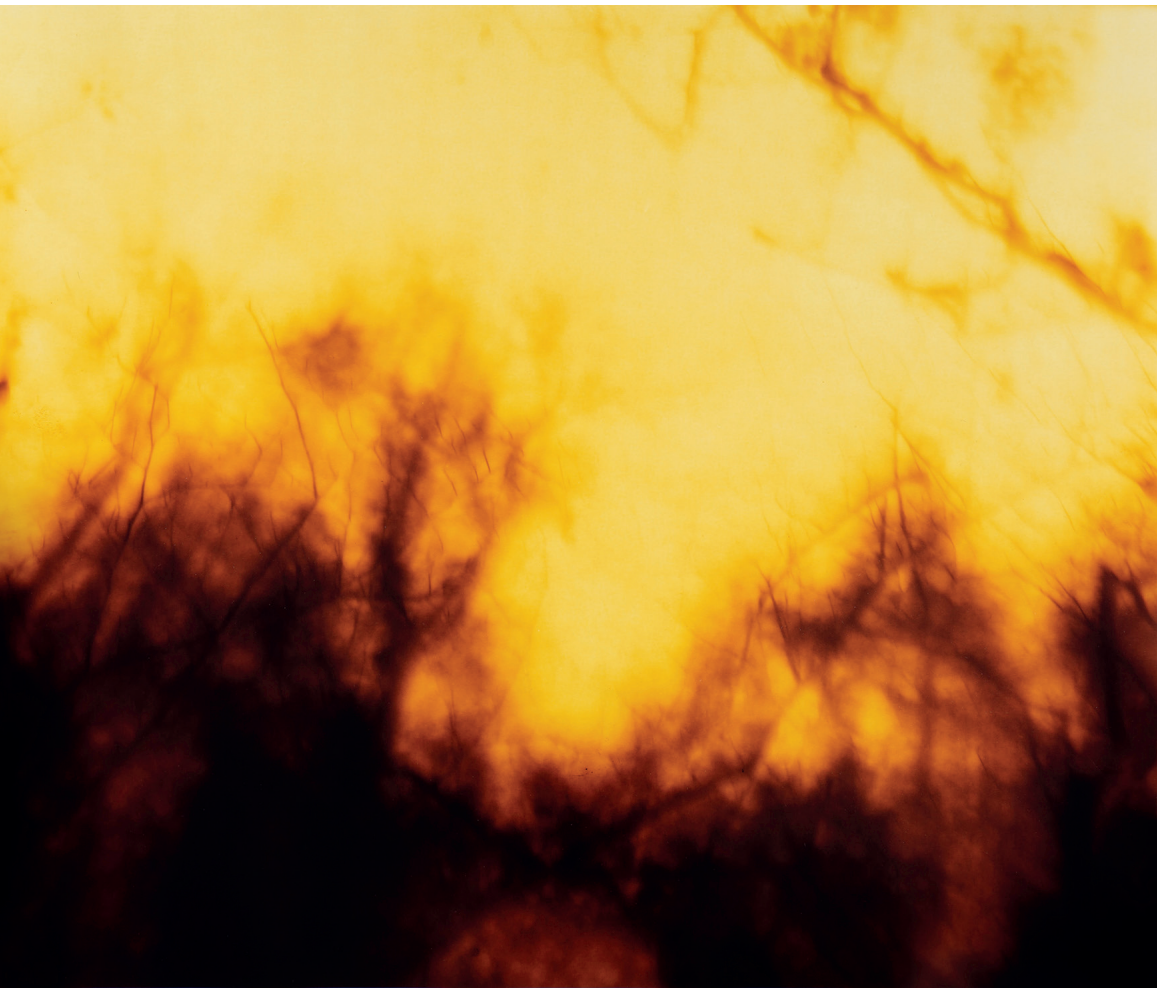
The priest stood mute and still on the swaying bridge as the sun climbed higher in the fiercely luminous sky. Thought ebbed from his mind. His vision dimmed and narrowed until only one image remained: his village, receding swiftly and silently beyond his reach, disappearing into a small, light-filled gap in the wall of mountains as if it too were fleeing a death.

TERJE ABUSDAL

Slash & Burn

Photograph

See also cover. Finnskogen is a forest belt along the Norway-Sweden border, where immigrant families from Finland settled in the 1600s. The Forest Finns were slash-and-burn farmers. This ancient method yielded bountiful crops but exhausted soil. Population growth had led to resource scarcity in their native Finland, contributing to their migration. Their understanding of nature was rooted in eastern shamanic tradition, with rituals and symbols used as practical tools. This photographic project draws on these beliefs while investigating what it means to be a Forest Finn today, when the 17th century lifeways and languages are gone.



OLIVER RAYMOND-BARKER

Trinity, 2018

Hand-printed c-type photograph

'Raymond-Barker's photographs function as the opposite of photographic journalism for he knows that conventional visual description does not allow for the evocative and lingering impact he seeks. His subject is the atmosphere of the place, its spiritual history across time, and an uneasy combination of awe in nature with the nascent threat of an unfathomable destructive force. Lines from the Anglo-Saxon poem *Beowulf*, translated by Seamus Heaney, describing a fearsome threat hiding in the woods and waters, seems apposite:

> *A few miles from here*
> *a frost-stiffened wood waits and keeps watch*
> *above a mere; the overhanging bank*
> *is a maze of tree-roots mirrored in its surface.*
> *At night there, something uncanny happens:*
> *The water burns …'*

Extract from the essay 'Not Negative' by Martin Barnes, Senior Curator of Photographs, V&A Museum.

LUCY ROSE KERR

Smoke Angel – Volcano on Mars, Dreaming of Olympus Mons, 2018

Photographic illusion

Lucy's artworks include photographs of sets made using household objects and Ghost Drawings that appear on the page. She works from a meditative state, exploring inner and outer landscapes, a process-led ritual that tempts imagery from the unconscious.

JANET LEES

Prophet

Photograph

'Prophet' comes from my *Anthropocene Prophecy* series, an open-ended personal curation of the times we live in; a kind of recycling of perception that helps me to witness the devastation that surrounds us without turning away. I caught sight of this little orange man in a back street in Liverpool, and saw a prophet of huge rage, with the power to burn everything down, preaching along through the ashes of his own destruction.

GLENN MORRIS

Subjugation (Kneeling figure) and Me Time (Lying figure)

Photographs of metal sculptures

These figures are two of a series of works based on the concept of 'Anthropocene'. They are constructed from recycled materials and are over three times life size. When seen in a landscape the visual scale of the figures becomes diminished and, as the distance increases, they disappear. The works are an attempt to explore the importance that humanity attaches to itself and our relationship with time.

JAMES ALDRIDGE

The Distance Between Us

Multiple exposure photograph

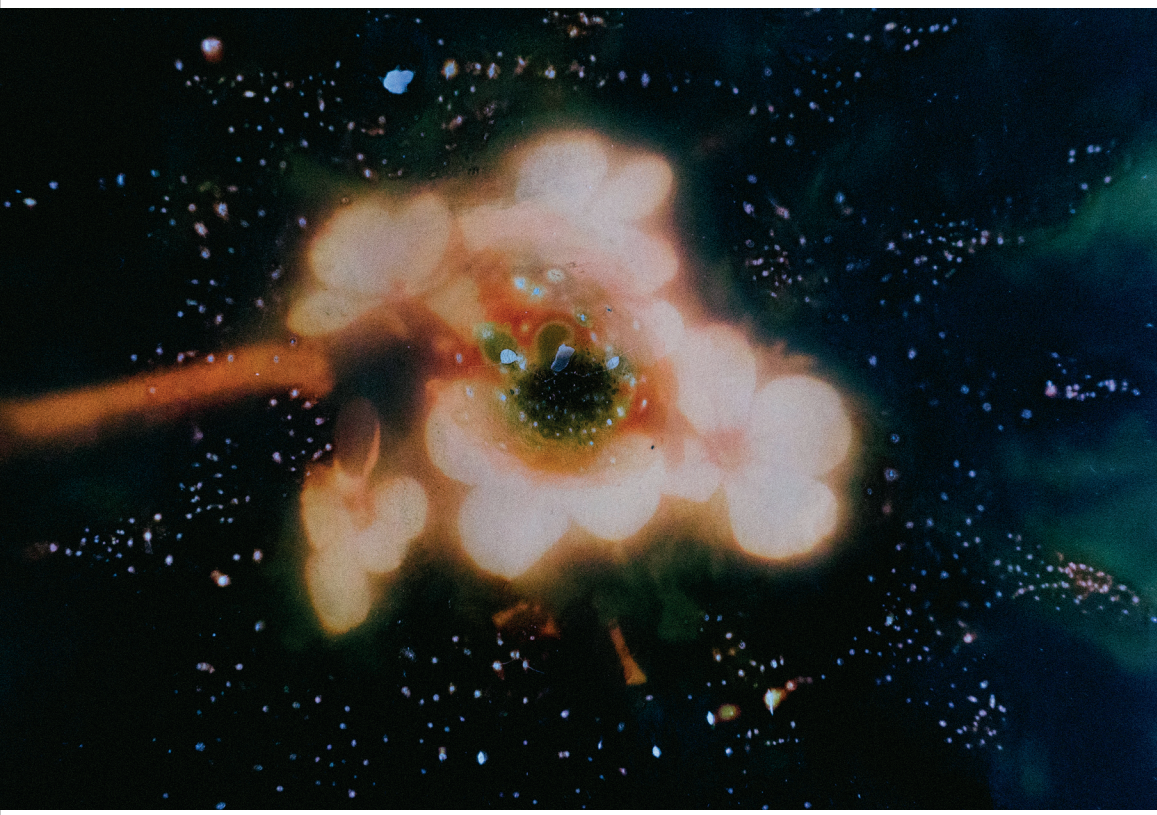
This is a multiple exposure image, formed by layering two photographs together. The first sees James sitting in Savernake Forest, Wiltshire, wearing a deer mask in a place where he had watched deer previously. The second, taken nearby using a camera trap, has 'captured' a fallow deer. The piece explores the perceptual distance that we have created between ourselves and the rest of the animal world, distancing ourselves from a shared, embodied reality.

ILYSE KRIVEL

[opposite top] It Appeared at the Summit in a Consuming Fire
[opposite bottom] Their Work Shall Be Known for What it Is

Photographic prints

These are two images that speak both to the ephemeral essence of the natural world, and the cycle of creation-destruction-creation that is an intrinsic part of Earth systems. The images are prints of photographs being burned, and so reflective of humanities undoing of itself through fire.



JAMES LEONARD

The Tent of Casually-Observed Phenologies

Photographs by Anja Matthes

JAMES LEONARD

Tempting Fate

'I've never done anything like this before,' confesses the young man seated before me.

'That's okay,' I assure him. 'You are not alone. For most people, this is their first time.'

We huddle inside a domed, handmade tent. Rainbow colours swirl around us. A machine shop, blanketed under graffiti tags, slumps outside. Next door, construction scaffolding looms four stories overhead. An elevated train rumbles in the distance.

'So how does this work?'

Tarot cards sit stacked between us.

*

For the past two and a half years, I have immersed myself in the art of divination. For the past two and a half years, I have been on the road with this tent, helping strangers foresee and personalise the impacts of climate change. Together we turn cards, and we talk about the past, the present, and the future.

This is *The Tent of Casually-Observed Phenologies*. It has travelled through 44 communities in the northeastern United States, where I've either been treated like a vagabond or a cherished guest. I've slept in a treehouse outside of Baltimore and a run-down Winnebago in upstate New York. I was given a bed at the mansion of Hartford's mayor and slept several nights at an estate hidden away in Amish country, where I dined on gazpacho and paella. Combining all the stops along my journey, the tent has played host to over 700 climate change tarot readings.

This territory is familiar to me – absurdist performance. I like to probe my capacity for impact while gnawing at the limits of my agency. After the record Arctic melt of 2012, I shaved a wooden boat out from under myself. I've gone door to door in a cheap suit, briefcase in hand, selling

subscriptions to the sky. I've proposed a garden in which live signals from distant pulsars commingle with terrestrial wind chimes. In my newest project, I gild bits of non-biodegradable trash.

My affinity for these iconic, dreamlike acts riddled with self-defeat led me to the mysteries of divination. Despite its fantastical allure and revelatory connotation, I equated consulting fortune tellers with flawed thinking. My initial rationale was, when it comes to climate change, *if we are unable to collectively heed the measured advice of our most meticulous, trained scientists, we might as well speak with diviners.* But this cynical ruse ultimately reverberated back upon me, and transformed my perception in the process. Serious shortfalls in modern means of communication became apparent. So much attention paid to branding and coercion. So little given to active uptake and integration. I now believe the structured, narrative practice of divination can, when wielded responsibly and with reverence, foster a deep cultural relationship to the passage of time and our place within these currents.

Each day begins before dawn. The tent takes three to four hours to construct and dress. The metal frame erects quickly. The interior fabric dome and exterior draping take more care, requiring hundreds of lashes, snaps and pins to set it just so. I work throughout the seasons, experiencing dew in the spring, sweltering heat in the summer, and hoarfrost in the autumn.

The tent's title derives from a series of delicate, earthy watercolors pinned to its exterior, raw canvas. Every painting I've completed depicts a different species whose phenologies, or seasonal rhythms, have been observed by everyday people as having been recently disrupted.

Chlorophyllum molybdites.
Asimina triloba.
Archilochus colubris.
Tamias striatus.
Podophyllum peltatum.
Plethodon cinereus.
Odocoileus virginianus borealis.

Through observation and my painting, these archaic names unfold. Familiar features reveal themselves: the sweet, black eye of a common chipmunk; the gangly stalk of a parasol mushroom; the broad, sheltering

leaf of a wild mayapple; the tall, alert ear of a common whitetail deer. Untreated scraps of muslin and weatherproof inks serve as unforgiving media. With little margin for error and no opportunity for correction, each painting becomes an athletic feat – like an archer drawing back at 90 meters. These paintings are unending. The ecological upheaval associated with climate change guarantees it. I continue to receive submissions from people who have been rooted in space long enough to recognise these changes. They describe shifting plants, animals and fungi.

Ixodes scapularis.
Poecile carolinensis.
Toxicodendron radicans.
Hamamelis mollis.
Lethenteron appendix.
Alces alces americana.
Apis mellifera.

As I watch the list grow, I become certain I will never paint all the creatures already affected by climate change.

The Tent of Casually Observed Phenologies was crafted out of a web of intuitive and planned decisions, all in service to my climate change tarot process. The structure's exterior honours careful observation of empirical phenomena, while the interior has been reserved for internal, inventive processes of question finding, contemplation and listening. Brightly dyed clothing scraps, hand-stitched together, form the inner walls. This rainbow of fabric rises from the structure's open floor. Red. Orange. Yellow. Green. Blue. Purple. Black. At the dome's apex, an opening to the sky lends natural light – a column illuminates the cards at its centre.

*

I watch the young man across from me in the tent as he grapples with his experience. His face displays a mixture of discomfort and wonderment. He is trying to figure out if this moment is real. Had he asked directly, I would have answered that *this moment is as real as any other altered state, as any book he had ever read, or film he had ever watched, as any play he had ever seen – or at least it could be.*

I recognise myself in him. His skepticism reflects a common starting

point: most Americans I've met while travelling struggle with the mere idea of divination.

A majority of my visitors have been middle-class. Most are college-educated. Often, these individuals already accept the reality of human-induced climate change, but they range from mildly informed citizens to deeply involved scholars and activists. The young man across from me is well-read. He references several modern, moral philosophers. He says he thinks about climate change, and it makes him sad. To him, it feels inevitable. I find myself navigating unspoken concerns, as I have with so many visitors before him. *How can tarot cards help with a problem as complex and overwhelming as climate change? If we turn to our imaginations, aren't we as bad as the deniers who rely upon magical thinking? Does having a climate change tarot reading mean I reject science? Won't this undermine our cause?* For the next twenty minutes, I will be his guide.

*

I've spent the last five years seeking out diviners in an attempt to understand these arts. In our modern world, divinatory practice is either found in faith-driven subcultures like Wicca, spiritualism, and neo-Paganism, or in non-white cultural contexts cloaked in protective layers of obscurity or initiation. I've received readings from a variety of traditions, attended seances, met with Haitian *Manbo*s, tracked down a psychoanalyst who moonlights as an I Ching expert, and have waited in neighbourhood botanicas, hours on end, in order to receive back-room consultations. I've attended workshops in tarot and tea readings, practised my skills upon countless volunteers, and shared trade secrets with other experienced readers.

Among more conservative tent-goers, I encounter fears shaped by religion – of possession or demonic influence. Yet, the only demons I've encountered within my practice come without horns or tail.

*

'Can you tell me about some of the other people you have seen? What did *they* ask?'

The young man fidgets with a button on his cuff. I pause. We have just begun our question-finding process. The inquiries I've received over the years have varied so widely that definitive patterns have been difficult to

identify – but a majority occupy a distinct territory, one characterised by nuance and sincerity beyond my initial expectations. I indulge him in a few anecdotes. I want him to grasp how others have utilised this space, to see the possibilities before him.

I tell him about the young woman from Taiwan who I met in Rhode Island, and her intimate, almost spiritual, affinity with the sea – a place to which she would instinctively go when contemplating a new job or the end of a relationship. But in recent years, after experiencing several typhoons of historic strength, she could no longer stare at it without also feeling the violence she had witnessed. The woman had come to me seeking direction while trying to resolve this shift in her relationship to the ocean.

I talk about the US Coast Guard recruit I met in Virginia who would be shipping out soon on his first tour; search and rescue missions were likely to form an ever-greater part of his job. He had brought his fiancée into the tent with him. The recruit wanted to know what he could cultivate in his life to avoid bringing the climate-related horrors he expected to face during his career back into his home.

I describe the horticulturalist in Massachusetts who had spent her life restoring local, wild regions, to get them back to their pre-colonial levels of biodiversity and balance. Climate change was upending her profession, and others in her field were now opting for 'assisted migration' over the restorative ecology she had practised all her adult life. But to her, this felt like kicking a terminal patient out of bed in order to care for a less sick patient. The tent, she decided, was a place to explore this ethical dilemma.

I share an account of the woman from the Del Mar peninsula who knew of at least five slave graves on her shared family property. Due to sea level rise, the property already experiences over a dozen days of severe tidal flooding each year. Despite her best efforts, she had been unable to track down any living relatives of the people buried there. She used her time with me to seek some spark of inspiration, for some path of investigation she had not yet thought of – to locate these descendents and connect them to their ancestors' remains, before it's too late.

And I tell him of the permaculturalist in the Hudson Valley, already several years into establishing a food forest on a former grain and chicken farm. His dream is to turn it into a workshare cooperative, but he had been unable to find the initial labour to make it successful – and even when he had brought workers and volunteers to the farm mid-season, he

could not retain them. After a complicated and mysterious reading, we turned a final tarot card – the Ten of Pentacles – and the reading snapped into clarity for the both of us, prompting this simple question as a response to his inquiry: *Have you considered bringing potential cooperative members to the farm during harvest, so they can directly identify with the bounty of the food forest?*

As the young man listens intently, something inside him seems to open up. A realisation I've witnessed before. People enter the tent, often expecting their encounter to follow the tone of most climate-related reportage – distant, outsized, data-descriptive and depersonalised. The dawning of this man works slowly across his face, simultaneously glowing and pained.

This question
can be
about
me.

His context and framework has shifted – yet he continues to seek his question. At intervals, he tries re-asking versions of samples I offered at the beginning of our session. With limited enthusiasm, he floats, *'What will our meals look like in the future?', 'What will our cities look like?', 'How seriously will climate change affect the weather over my lifetime?'* or *'How can I motivate others to be more involved in solutions?'*. After each asking, he looks to me for approval. After each asking, I repeat his question back to him, in which he pauses, looks downward, then wrinkles his nose and says, 'No, that's not really my question.'

We hold each other's gaze in silence.

Then, without much warning, his internal weather changes.

Facial muscles release and the skin smooths.

'I guess … my question today is,

If we are unable to address climate change,
what does that say about us as a species?'

In accordance with the ritual, I speak this question back to him, seeking confirmation. But I already know his answer. We are roughly twelve

minutes into his reading. He has found his question. I take the tarot cards from between us and begin to shuffle.

*

Somewhere in transition from childhood, my conception of imagination retreated to a realm of fancy and fantasy, gaudy and irrational – something to be tapped when seeking entertainment, but not when considering matters of merit. As an adult, I've come to value technologically-enhanced perception and computational modelling – all the while undervaluing my mind's own abilities to model and evaluate our uncountable futures.

By the standards of modern science, the means divination employs to predict future and unseen events are inadequate. Though at times they can be chilling and uncanny, the predictions are neither conclusive nor repeatable. And, in this age of authoritarian illiberalism and deliberate misinformation, the stakes for engaging the unscientific feel more dangerous than ever. Falsehoods and inaccuracies could be introduced or reinforced.

But my experiences with divination have shown me that precise, measurable results are not why one would consult a diviner. A diviner is there to make sense of elements often already known, but not understood. Assisted and constrained by method and tool, we activate the imagination to arrange existing scraps of information into patterns that reveal underlying geometries.

Trying to explain divination to friends, I've likened it to a form of abstract poetry. Ideograms are cast into space. Unlike modern texts which are typically linear, these ideograms are read as a field. Like a conceptual hologram, the cards manifest an interference pattern of ideas: some signals cancel each other out, while others amplify. It is my job to recognise and articulate the patterns as they emerge, all within the context of the question posed by the querent.

*

I shuffle the deck, feathering and bridging the cards one last time. I tap them back into a neat stack and hand it to the young man across from me. I give instructions: *cut the cards however you see fit, reassemble them*

into one stack, and then hand that back to me. He does so. I cradle the cards in my right hand and place my left over them. I close my eyes, breathe once, and address the cards directly, 'Tarot – and any ancestors who may be present – I ask on behalf of the man seated before me: *If we are unable to address the threat of climate change, what does that say about us as a species?*' My left hand raises in a loose fist. I let it fall to knock the deck, like a rap on a door.

I lay four cards between us in the shape of a diamond. Each one makes a scraping sound as I flip it from the top of the deck. I take a moment to survey this spread.

Sometimes, a reading will be immediate and direct. Others linger in mystery and abstraction, making more sense to the querent than the reader. Some pop into clarity at the end, much like the Hudson Valley permaculturist's. And other times, Tarot will play coy delivering an obtuse spread that restates the querent's question, over and over, slowly boring down. As I glance from card to card, I sigh. This is not going to be an easy read.

*

I'm always on. Flipping channels. Tuning the dial. Surfing. Constantly, voraciously, involuntarily devouring more and more information. I can't concentrate when my browser is open. I can't think while Twitter beckons. In our current information landscape, so many of these competing signals have an air of calamitous urgency. This is not helpful to daily life; but it is also something that we cannot ignore. So, how do we respond?

'Why don't you just kill yourself?' That's what my friend was asked. He was in the middle of explaining his desire to *not* have children. He reasoned he was more concerned about the climate, the rainforests and the ozone layer. Me? I share my friend's concerns. I hate what we do to the planet, and to stare that straight in the face feels nearly impossible. It so quickly turns into hopelessness. I myself have no noble answer to that question; it's somewhere between *because I don't want to* and *I am alive*. These days, I grapple with my faith – not in god, the divine, magic, or ritual, but my faith in mankind. In our ability to be decent. To be responsible. To do the right thing. Not just once, but lifetime over lifetime. Over the years I have been working on this project, I have noticed the rise of a new field of study: climate communications. Its very existence is the

embodiment of the question, *How do we more effectively communicate the alarming realities of climate change and inspire political will to mobilize collective action?* But what if this is a problem not of communication but of reception – of concentration, contemplation and focus? What if the real problem lies in our relationship to information and knowledge in general? How do you train people to engage their imaginations? How do you train people to care?

Pope Francis is correct: climate change represents a moral crisis. And every day, when I give myself the quiet, I find myself asking if we have what it takes to respond with goodness and compassion. I wonder if *I* have what it takes.

*

I've been looking at the four cards on the table for what feels like an eternity now. In real time, perhaps 45 seconds have transpired. My reading process has begun. I speak aloud, sharing the general suites of meaning associated with each card.

First is the Ace of Cups, a card of faith and new beginnings, a wellspring spiritual and emotional. It represents the young man's question. It tells me his question is one of faith – not necessarily one of zeal or religious faith, but the sort of faith essential to forming a worldview.

The second is the Magician, one of the Major Arcana. It refers to our mastery of the four pagan elements, all constituent parts of our world. In my climate change tarot process, this card has revealed itself time and again as our technocratic instincts. It is upside down, also known as being *in reverse*. The message: the negative aspects of that technocracy, including hubris and false teachings, are partially responsible for where we find ourselves today. Where this card lies within the spread and its inversion tell me that this is what is leaving us. In continuum with the first card and the querent's question, I suggest our faith in our ability to freely shape the world with controllable results will be shaken to its core.

I look to the third card to see what blessing or promise may lay in store. Here lies the Three of Cups. It is a card of celebration, of entwinement and new, long-lasting social bonds. But this one is also in reverse. Is it that we are not yet ready for these gifts? Or is it that the withholding of these apparent blessings is the real blessing of humanity's shared future? How does this fit the question, *If we are unable to address climate change, what does this say about us as a species?* And how does it fit what

the first two cards are already implying, the shaking of our faith and the loss of our understanding of man as master over nature? Before we are done, I may need to turn one more card against this card for clarity.

I turn my attention to the fourth and final card of the initial spread. The King of Cups: the capstone of our arch. A masculine card. One representing organised systems of care and compassion, of running water and medicine, arguably a card of civilisation itself. It too, like the two before it, has fallen in reverse. It sits in a reflecting pool across from the first card. It tells me that, should we fail to address climate change, faith in mankind's ability to reliably manifest compassion and care is what we risk losing most.

But my mind still turns over that third card – the new relationships, either deferred or withheld. I consult with the young man; I ask him if it is okay to turn another card for clarity. He is also confused by that card. He nods in agreement. I ask the tarot for clarity and knock one last time. I lay a new card on the table. Another of the Major Arcana: Temperance, the card of balance. It is upright. The message is clear. Those new beginnings and lasting relationships promised in the third card of the initial spread will be deferred, at least until a new balance is achieved.

Though this speaks of the capacity for eventual renewal, the connotations of what is on the table frighten and sadden me. But I've learned over the years to restrain those emotions while divining. This space belongs to the young man across from me.

We are approaching the end of his reading. Before closing, I gesture over the table top with a broad stir, 'Does all of this make sense to you?'

He tilts his head, his left ear reaching towards his shoulder, eyes damp and grinning, 'It does. It doesn't make it any clearer. It's all such a mess, really… but it's a beautiful mess.'

ANNA REID

Wild Stones

I see that the valley bottom is filling with shadows, the wall bars are growing faint and the clustered village is steeped for a moment in a paradisiacal rose light before that too, turns grey, a fading ash. I look straight at the sun that is causing this havoc, see it as a bulging, sagging mass on the lip of the pass, then it is gone, leaving only a dancing green spot on my inner eye.

Jacquetta Hawkes, *A Land*, 1951

I loitered on the approach, standing far behind the outermost hut, beneath the shadow of branches and observed the evening light on the glade as women tended and talked. It was already time to make the return journey to camp, the sun was sure to fade fast.

As I turned I felt an arm slam into the left side of my chest, a stab I thought, it took my breath. Heavy hands pounded onto my arms, another sharp pressed into my back and I was forced, turned, pushed off towards the trees. In a state of horror I recognised that I was encased by a group of men and not a leopard.

I moved with them, the sharp up against my shoulder blade, my stiffened arms dragged as we moved at a pace. The men began to jeer and wail with delight at my capture. I could only repeat my name, hoping for some case of mistaken identity, to tell them that I was known to their camp. They paid no attention. They paced me along, over roots and onto a buffalo trail. I stumbled and worked hard to yield resistance, trying to gain an understanding of the ambush as it unfolded. The men gained pace, the sharp not far from my back, but laid off. The many hands pushing and pulling became lighter so long as I kept speed. The trail was fraught with animal holes and when I stumbled I was pulled to my feet without pause. The group became quiet as we paced along the path, into the onset of darkness mostly shaded from the full moon. To be quiet in

the forest and at night was both strange and dangerous, for chatter and song, signal and rhythm, they disperse dangers.

We moved at speed for many miles. The forest opened out onto a grassy verge next to running water where moonlight fell. The men were of a sudden at ease. I was left to collapse to the floor, where I sat, eyeing the group of five that mingled as if in anticipation.

One man rested down to a squat some metres opposite me, grasping a leafy parcel the size of a banana bunch that was tied to his waistband and which he began to unfold. The waxy outer leaves came away from a smaller inner wrapping fastened with twine, which he unpicked to reveal a glowing red and white ember.

REBECCA FREETH

Burning to be Understood

South Africa is a place of fire.

Fynbos, a wondrously diverse type of vegetation indigenous to the Western Cape region of South Africa, needs fire to thrive. The roaring heat and fragrant smoke of a fynbos fire trigger seeds to germinate. After a fire, minerals in the ash return to the soil, nourishing fynbos regrowth. Fire, smoke, ash: phoenix. Without regular exposure to fire, fynbos loses its competitive edge against thicket. But when it burns too frequently, fynbos can't establish itself for long enough to mature. It's a delicate life cycle between persisting and perishing.

In the early days of apartheid, state foresters suppressed burning, ignoring research that showed the ecological benefits of fynbos fire. Mace pagoda, a magnificent flowering species previously found in the mountains behind my cottage, was brought to the brink of extinction as a result of fire suppression. Then an accidental fire roared through the area, reactivating underground seed banks that had been dormant for decades. The protea is the most well-known fynbos flower with its bold beauty, but it is the delicate fire lily that pushes through the ruins within days of a fire, appearing scarlet against the blackened ground.

I experience three sources of heat in South Africa. There is the fire within, visible in raised emotional temperatures and desire for change, now. There is the fire outside, the hot drought of recent years, the increasing tempo of fynbos fires. And there is the fire between us, evident in our relationships across race, producing plenty of heated exchanges. I know something about the fire within. I was born in England and moved to apartheid South Africa in 1980. A seven-year-old with the sensitive skin of one born to the low, grey skies of northern England. The South African sun blistered my skin. The emotional temperature of racial injustice created a slower burn inside. By the age of 15 my response to the racism that defined my experience of school and neighbourhood life had billowed into full-blown rage. I also know something about the fire out-

side, having had my cottage engulfed, but not consumed, by a fynbos fire in 2014. But it's the fires between us that create the liveliest sparks for me.

Colonialism and apartheid were predicated on treating black South Africans as less than human. Spatial apartheid meant that black and white South Africans encountered each other rarely, and only under such bizarre and artificial circumstances that any meaningful conversation was unlikely. Racism stymied what little chance there was to understand each other across racial barriers. Racism continues to stymie understanding 25 years after apartheid officially ended. Black South Africans are burning to speak, burning to have their experiences heard, burning to be understood.

A few years ago, I joined a group of South African professionals committed to dialogue. We met regularly over a two-year period. We were all middle class, most of us mid-career. Two thirds of us were white and one third black. We talked, compulsively, about race and racial injustice past and present. We couldn't focus on anything else. Many moments are seared into my memory. Here are three:

> Zanele stands up and immediately fills the room with her presence. She's a successful career woman and mother to three children. There's something compelling about Zanele's presence; she strikes me as deeply self-loving. And when she gets angry, words pour from her like lava from a volcano. A red-hot molten river of words. Her poise in those moments is exquisite. The flow of words and her concentrated anger immerse me in her world of being dismissed, denied and derailed at every turn as a black woman in South Africa. She's angry with us as white people and I can't help but get it. I had thought that my activist parents and my hatred of racism had inoculated me. But it hadn't. I was and am implicated in a system of racism that benefits me at the expense of black South Africans.

> On another occasion, we're in the midst of a robust conversation when Nomfundo leaps up. Usually a reserved woman in the group, she shouts: 'Why can't you white people see how central you are? Right now!' The room goes quiet. There's simply no denying it. I had thought I understood white centrality, and I had thought that as an introvert who tends to stay on the periphery of group dialogues, I was less guilty of it. But Nomfundo has made me rethink.

> It's not just how much I speak, it's a sense of entitlement to shared space and how my occupation of that space marginalises and silences black people.
>
> During one of our final meetings, Mandla puts his head in his hands and his shoulders start to heave. It's shocking. This man was born, and indeed trained, to fight. Hard as it can be to face him when he's angry, it's more painful to see him weep. And he doesn't stop. The grief below the anger knows no bounds.

The black people in the group had a tolerance for heat. They could stay with strong expressions of anger, conflict and grief – which is what was needed. We white people wilted.

Nelson Mandela's extraordinary personal capacity for reconciliation with his oppressors and jailers had the effect of letting white people, generally, off the hook. The Truth and Reconciliation Commission (TRC) created an important space in the late 1990s for the telling of stories of violence, torture and murder by the apartheid state. But too few people received a chance to testify and the very limited lifespan of the TRC revealed only a glimpse of the suffering. The average black South African's anger and grief has still not been publicly spoken, heard or understood.

Around the same time, failure to implement prescribed block-burning of fynbos – now largely for economic reasons in a country trying to redistribute resources – resulted in a massive increase in wildfires. I remember that hot summer's day in January 2000 when 120 wildfires broke out in the Western Cape.

The intensity of heat between South Africans is in stark contrast to my present reality as a PhD researcher in Germany. I'm working in an international team of natural and social scientists studying social-ecological sustainability. A group of smart and hardworking people, my colleagues are sincerely committed to social justice and social-ecological wellbeing. But this South African finds the temperature of our collaboration too cool. Where's the fire?

Every now and then, there is a lick of flame. A colleague sends out a group email to the rest of our research team. It contains links to articles about extinction crises precipitated by the death in Kenya of the last male northern white rhino and by the collapse of bird populations in France. The links are prefixed by a scorching one-liner: 'I am delighted to share

my sources of motivation with you.' Reading this line evokes an image of eyes glittering above her keyboard.

Here, there is fire. My scientific colleague is also burning to be understood. But the response from the team is muted and the heat she feels doesn't visibly carry across to the collective.

It's two years into our research collaboration and we have gathered for a team meeting. An unexpectedly tense exchange is followed by a protracted pause. No one makes eye contact. The meeting convener says 'perfect' in a voice that only just escapes through clenched teeth. We understand the meeting to be over. I open my mouth to say something, to name the difficulty, but people are already starting to troop towards the door and I abandon the impulse.

There is potential for heat in this team but it's being suppressed. This isn't a deliberate strategy; Simon Pooley's characterisation of fynbos fire suppression in the old South Africa as a 'failure of nerve' is apt for our research team. There is fear of fire. As a result, frustrations remain largely unspoken and therefore not fully heard or understood. Several people have withdrawn their full presence, disappearing into their research with their quiet disappointments. Our collective work is the poorer for it. Harvard leadership scholars Heifetz and Laurie say that in teams 'nothing cooks without some heat.'

This isn't surprising. Who wants strong emotion in the workplace, especially in academia? But there is academic mileage to be gained from inquiring into the sources of frustration and disappointment in collaborative research experiences.

My research team also operates in a context that insulates it from external sources of heat. Yes, the big picture issues are urgent, but the immediate situation in Northwestern Europe is another kind of comfort zone. Despite the latest predictions of the Intergovernmental Panel on Climate Change (IPCC) and the fact that evidence of social-ecological collapse appears in the team's own research, it requires a vivid imagination to project oneself into these scenarios of climate crisis. The team is young, with most members having been born at least 30 years after the end of World War II. There is no memory of how fast a seemingly stable situation can deteriorate into brutality and hunger.

Why is the temperature of this research team cool? Could it be the stereotypical rational coolness attributed to scientists? Or to men? Or to Germans? Maybe these are factors. But my guess is that our privilege helps to keep team temperatures low. Most of us come from backgrounds

that inoculated us against economic hardship or social discrimination. All of us have enjoyed the kind of access to education and other opportunities that smoothed our paths to PhD level and beyond in a Western European university.

I think of privilege as a form of centrality. Those of us with relative privilege are accustomed to having our voices heard and our presence welcomed in most social interactions. This produces an often-unconscious sense of entitlement to being taken seriously, to being central. Experiences of being on the margins are less familiar. Of course, given the myriad identities that make each of us who we are, many of us with privilege have also experienced prejudice in our lives. White women or white gay men, for example. In fact we may be so strongly identified with experiences of being displaced in the world of white, straight, able-bodied men that we don't recognise our own mainstream centrality and how it displaces others.

Arnie Mindell was a Jungian analyst in Switzerland when he started to transfer some of his ideas to groups. The Deep Democracy approach to dialogue evolved from here. Deep Democracy welcomes the fuller expression of our experience, to deepen our understanding of each other and strengthen our relationships, whether personal or professional. This includes the expression of conflict and strong emotion. Mindell talks about this as 'sitting in the fire'. Not just walking through fire, but planting one's posterior among the coals and staying. The implications are that people working for social, or social-ecological, changes develop a tolerance for the heat that invariably comes with real change. To be less afraid of immolation, to grow a skin that can withstand intense heat for the sake of deep learning and deep change.

Deep Democracy works especially well where there is a power differential, because it takes seriously encounters between those at the centre and those at the margins. Instead of trying to make conflict or anger go away for the sake of peaceful group relations, Deep Democracy treats the heat as a signal for those with privilege to listen. To toughen up in the face of scorching temperatures. To respond with urgency without re-centring ourselves. To stop dampening the flames with a coolly colonial attitude – whether in the name of 'civilised' or 'scientific' discourse – that makes other ways of relating illegitimate.

On more than one occasion, I've watched a fynbos fire move across the mountain range behind my cottage. At night, it's a beautiful sight. One moment it looks very far away, a silent image of dancing orange against

the dark sky, observed through the safety of my bedroom window. I've felt a mixture of sympathy and smugness in relation to people who built grand holiday houses on the mountain slopes. The next moment, the ever-present coastal wind carries sparks to a spot much closer to my cottage and whips them into flame. Suddenly, I'm no longer a complacent spectator on the periphery.

Sometimes fiery exchanges combust unexpectedly at close proximity, and it's no longer possible to be a bystander, confidently assuming the problem belongs to others. We may be implicated.

Of course, it's not just black South Africans who possess a hard-earned capacity to sit in the fire. Most people who have experienced profound struggle and silencing have developed this resilience. I found out about this last year at an international Deep Democracy dialogue in Greece and then I had an unexpected lesson about the long haul of cultivating resilience.

We arrive in Greece from 47 different countries to participate in a week of Deep Democracy. Old-fashioned democracy has recently produced President Trump and Brexit, and has allowed Erdogan, Putin and innumerable others to get away with murder. During six intense days together, we sought to remain available to the full spectrum of experiences and opinions related not only to the rise of the political right all over the world, but also to people of colour from all over the world living with legacies of colonialism, women in Japan struggling to find their public voices, women – and some men – navigating life after sexual assault, people who identify as queer dealing with power dynamics within the queer community. Perhaps most powerful of all, people from different African countries choosing to have a public conversation with each other about the risk of becoming apologists for whiteness, refusing to allow any of the white facilitators on hand to facilitate their conversation.

It is hot.

The deal is that every voice deserves to be heard. Especially the ones we don't want to hear because they carry too much hatred, or pain. These are often the ones we've silenced internally too, especially if, at our most honest, those voices have found a small echo within us. By listening to every perspective, we carve out more spaciousness within ourselves to hold the whole picture, not just the bits we like. By acknowledging the pain that can calcify into hatred, maybe there's a chance for healing

the self and acknowledging what has been silenced both internally and externally. Rather than simply seeking to destroy the other. Together, we may come to better – more nuanced and more sustainable – decisions that still represent the majority but are vastly improved by also taking seriously the reservations of various minority perspectives.

I sit, one among 550. Zanele is here too. None of us are passive spectators; we're all caught up in the experiences of being more central or more marginal, of trying to deepen the democracy between us, regardless of the issue. But the introvert in me keeps me firmly attached to my chair, reluctant to participate more actively. On the penultimate day, we agree to talk about an issue we've been skirting: colonialism. When the facilitators request that someone speak from an authentic experience, so that we don't end up in a superficial role-play, I find myself rising from my seat next to Zanele. My great-grandfather was a British missionary to Bengal. On the other side of my family, the men have served in the British Army for as long as anyone can remember. This is a history about which I would happily keep quiet. Not today apparently.

I thought I'd developed a pretty high tolerance for heat in South Africa, but I was woefully underprepared. As I embodied my lineage, the heat proved more than I could take and so I did exactly what any cool, rational, order-loving coloniser would do and asked everyone to calm down. Not surprisingly, this polite request had the opposite effect. Fuel to the fire. Whoosh! That experience created a simmering curiosity within me to know more about my colonial ancestry.

Those of us with privilege have largely been shielded. We haven't had to toughen up. We don't have the inbuilt resilience developed by enduring the daily insults and closed doors that come with inequality and injustice. Even those working in the field of sustainability research don't necessarily feel the same sense of urgency as those at the frontline of ecological disruption. We can still afford a certain degree of denial that disaster will befall us, a certain level of cool.

So what does it mean to learn to sit in the fire? To willingly be exposed to heat in relationship? How will that kind of heat tolerance help us survive other kinds of heat that may be coming? And what can we learn from fynbos? I'm learning to be in the fire often enough to germinate new growth, but not so often that the new growth is lost. Fire can be an addiction; I've worked in groups with pyromaniacs who light little fires all the time.

Soon I will return to South Africa, with my privilege intact, and I'm

checking my flammability levels. My skin, once again paled by the long winters of Europe, needs to be both sensitive enough to pick up on subtle signals of disturbance and fireproof enough to sit in the heat of ongoing and necessary social upheaval in South Africa.

And that's not an exclusively South African task.

*

With my thanks to Zanele, whose fine anger was a catalyst for me to listen more closely to anger, and to learn how to breathe my own dragon fire.

References

Heifetz, R.A. and Laurie D.L. 'The Work of Leadership', *Harvard Business Review* 75(1), 1997, pp.124–134

Horst, M. 'Learning from Discomfort: Science Communication Experiments between Diffusion, Dialogue and Emergence', in Philips, L., Kristiansen M., Vehviläinen M., *Knowledge and Power in Collaborative Research: A Reflexive Approach*, Routledge, 2013

Mindell, A. *Sitting in the Fire: Large Group Transformation Using Conflict and Diversity*, Lao Tse Press, 1995

Pooley, S. 'Recovering the Lost History of Fire in South Africa's Fynbos', *Environmental History* 17(1), 2012, pp.55–83

SYLVIA TORTI

The Smoky World

All summer we choked on smoke. In the first 11 months of 2018, more than 8,000 fires burned across California. In December, there were five more, the Thomas Fire being the largest ever, and the Camp and Woolsey Fires, the deadliest, most destructive. These days, everything breaks a new record. The National Oceanic and Atmospheric Administration tells us that the ten warmest Septembers have all occurred since 2003, with the warmest four in the past four years.

One morning during the Woolsey Fire, I woke to video of a friend's neighbourhood by the sea. Clouds of black smoke balloon behind her. Flames climb from roadside brush. Houses blackened and smouldering. Sky and sea are on fire. In the Camp Fire, 88 people died, 14,000 homes were burned. People are still missing. Damages might be $2.8 billion, or $12 billion. It's all speculation. But we already know this – the records, the data, the acres burned, the houses lost, the lives charred.

East of California, here in Utah, the valley filled with smoke so thick we couldn't see the mountains. We coughed and complained and mourned this burning world, but some nights I secretly waited for the marvellous red sunsets to spill over the Great Salt Lake.

During those hot and smoky days, when the odour of burned desert was the first thing I smelled every morning, I thought a lot about fire. I thought about the pending apocalypse of my body. The pending apocalypse of humans. I considered that hell might be a reality. I raged against the idea of living, without love, in this new hot, smoky world.

*

Remember that fire love story? Husband and wife married for 55 years submerged themselves in a swimming pool, clung to one another for hours while fire swept overhead and smoke choked their lungs. That was true love, we were meant to believe, though we know nothing about the

fights or loneliness or disappointments that defined their relationship. Or maybe that wasn't it, but rather, they treasured each other, thrashed around in bed year after year making sweet love, living a fiery passion that bonded their bodies and hearts through time. We can't know. We know only that two people clung to each other. He survived with second-degree burns. She died in his arms.

Fires, experts say, are often caused by someone being careless, someone playing with fire.

*

I'm playing with fire. The man who is my lover in the most honest, pure, and stirring use of that word, who lives across the country with his wife and their pretty chickens, sends me a picture of a beautiful orange sunset. Caption: 'Gorgeous Virginia sunsets thanks to California fires'. I don't believe him because it seems unbelievable, but I look it up and it's true. Apparently, there's this portal, like a wormhole, moving smoke from California to Virginia in a white line drawn on satellite photos. He and I are connected by stories, thoughts, humour, sensibilities, desire, and now smoke and sunsets too.

What do I know? Fire is a chemical reaction that rearranges atoms. Oxygen, fuel and heat are required to start combustion. I also know that once something is burned, it cannot be unburned. Once someone dies, they cannot live again. Once love departs, it cannot return in its original state. I worry for him. I worry for me.

*

I worry for our planet. We're out of control. We're hungry all the time. We eat and breed and produce and consume. We build houses up mountains, across prairies, down into wetlands. We're devastating space and place as we strain the limits of our carrying capacity. We're leaving traces of our species in the geological record. As we rise, so thousands, perhaps millions, of other species will fall in that record. Individually and collectively, we've created our own apocalypse, our own hell, and individually and collectively, there is nothing we can do about it.

*

We're the only animal that controls fire: it's part of what makes us human. The benefits are obvious. Fire made us more successful. It's the way we controlled the landscape, turned it into a space we could use, because a burned landscape is easier to move through and hunt in. There is fleeing prey, some burned insects and dead animals that might be eaten; lizard burrows can be seen and dug up, and lizards are tasty when roasted. Burned landscapes are good for the soil. They weed out the plants we didn't want and bounce back with new grasses, and fresh grass brings new prey. And, most importantly, fire helped early humans cook the toxins out of the tubers we dug up, tubers which were the difference between starvation and survival. This is the cooking hypothesis, which says that, unlike all other animals, humans evolved to include cooked food in their diet in a way that is obligatory.

Fire also helped us fend off predators – lions and tigers and bears – but seriously, we need to remember that we were once prey. We often forget that, just as we forget we're animals, just as we forget we live within an ecology, just as we forget that we can hardly control ourselves, let alone each other. What happens when we finally realise that we've lost control?

*

We began with a controlled fire in a cabin in Maine, after a run, when we were soaked by rain but still went swimming in a waterhole underneath a magical rainbow. He's since said he doesn't believe in rainbows or unicorns; thinks unicorns, if they exist, would probably just shit everywhere and make a big mess. He dreads he'd be the one responsible for cleaning up, since he is the person responsible for all the cleaning and cooking and emotional caring in his home, as well as the chickens and the leaf raking, and who knows what else? Sounds like a cliché, doesn't it? An over-responsible, caretaking husband, reaching out. Rainbows and unicorns. Of course, it is. What part of love isn't a cliché? But *I* want to believe in a world with magic and hope. And I want to believe *him*.

From the cabin we went to the rocky coast, to a fundraising dressing-up party where we were part of the attraction. He, with his drawn-on moustache, silky red shirt unbuttoned halfway down. Me in pink hair, halter top and too-large red boots borrowed from him. During the dance party, I stayed on the edge and watched. He was divine, legs and hips and head moving to the rhythms. He must have known all the lyrics because

he mouthed every word in perfect time. I watched him dance and sweat and thought of his tongue, his lips, his whispers.

This is what I know: we began with fire. The heat of the cabin, flames blazing in the stove, stories told, the energy of close friends tucked into a wooden room. Eyes flashing, his hand touching my thigh, whispers in my ear, me laughing. Later, him climbing into my bed and me falling asleep in his arms. He told me that he didn't shut his eyes all night.

*

In *The Psychoanalysis of Fire*, Gaston Bachelard says:

> Fire is the ultra-living element. It is intimate and it is universal. It lives in our heart. It lives in the sky. It rises from the depths of the substance and offers itself with warmth and love. Or it can go back down into the substance and hide there, latent and pent-up, like hate and vengeance. Among all phenomena, it is really the only one to which there can be so definitely attributed the opposing values of good and evil. It shines in Paradise. It burns in Hell. It is gentleness and torture. It is cookery and it is apocalypse.

'Opposing values of good and evil.' At the beginning I think only about warmth and love, ignoring words like 'hidden', 'latent', 'pent-up' and 'vengeance'.

*

Our letters and emails and phone calls go back and forth daily. We talk without filters, reveal our hopes and fears and follies. We tell each other secrets that have until now been kept in silence. I mail him a stuffed unicorn. He sends me earrings and furnace filters. It's the most comfortable each of us has ever been.

He tells his wife. His children. His therapist. I tell only Andy, who knows how hot I can burn. Andy – who knows more than anyone my vulnerabilities and the scars I carry. Andy – who cares for me like kin, but so much more than that. We've made a pact: friends and adventurers, we're in it until the end. More than once, we have promised to teach each other how to die.

I fly across the country twice. I take video to memorise his voice and

expressions. We talk about childhood and parents. We run. We laugh. We ford cold streams. We see art exhibits, walk through botanical gardens. We ride a merry-go-round, attend plays and concerts. We caress and we pant.

*

Does this love make me ugly? Am I supposed to douse the flame (so damn clichéd) and not burn up a marriage? Obviously, the question itself is arrogant; I'm giving myself too much power in suggesting that I could burn anything with my eager love. His wife might think otherwise, but then again, she might view him differently from me. She might see him as hers, as someone who can be taken away. She might only see him through her eyes and needs, not as an individual she loves and wants to flourish separately from herself. We talk about control. Her need for it. His feelings of stasis. His desire for much more. His openness to change. He speaks in ways that seem courageous and caring and convincing.

I want to believe him, but I know I have little right to this love because I've recently learned that we have little right to any love, other than that to ourselves and the love we choose to give. I'm trying to use this knowledge now. I don't want love that compromises, asks for denial, or obligation. I choose to believe in rainbows and unicorns and improbable loves. After all, humans are an improbable species that began with a series of opportunities, chances, hypotheses and adaptation.

*

Around 3.4 million years ago, the landscape of East Africa became more arid, and natural fires more common. Early humans figured out how to exploit these areas for optimal foraging. Fire would have changed searching and handling times of food because a cleared area allows us to find food more readily. Once we understood the benefits of a burned landscape, we started moving fire from place to place, creating better foraging areas and using fire to cook the tubers. The anthropologist Christopher Parker and his associates argue: 'The biological benefits of fire use would have evolutionary consequences, but would leave little or no archaeological trace. Indeed, any trace would likely be indistinguishable from those caused by naturally occurring landscape fires.'

Their hypothesis rests on the idea that everything is a trade-off, and

not everything leaves a trace. It all depends on the environment. Cost-benefit ratios change depending on where you are.

*

Cost and benefit? How does one measure a 30-year turnkey marriage against a new love? One is about security, commitment, caring and habit, but not always deep emotional closeness (I'm told). The other is about desire, potential and intense intimacy. How is he supposed to decide what to do? He continues to ask his wife for space, for permission to explore. She can't give it. He frets because he doesn't know if he can give up the newfound magic of conversation and love-making in his life. He feels trapped. Years of emotional loneliness explode inside him.

My heart stretches because I know what's inside him waiting to come out: the rock star at the auction, the man whispering secrets, the man responding to close attention and caresses. The man who tells me he has walked around with a lump in his throat for years.

*

I know also what's inside me waiting to come out. Instead of my own hunger or fear, which perhaps I should pay attention to, I think about control, this human construct created because we are afraid of not knowing, of not having, of not predicting the future. We like routine. We like security. We like making others bend toward our will, to be what we want them to be. I don't want to control him. I want him to be free. Or do I only want him to be free enough to be with me?

If humans are good, why are we also bad? If I'm so wonderful, why can't he visit me? If his marriage is so worthy, why does he tell me he's afraid of her? He says he is in agony, yet spends his days emailing me, laughing with me; we pass hours on the phone talking about things big and small. Am I simply a pleasant diversion, like a night out in the desert, a campfire under the stars, some heat as companion to a man who would otherwise be sitting alone with the kangaroo rats as they scuttle past trying to avoid the great horned owls? What to make of a man who walks around with a lump in his throat?

*

Andy reminds me that the root meaning of the word 'fire' is 'to arouse, inflame, excite', and the root meaning of passion is 'to suffer', and 'to endure'. He says: 'I know you well. The enduring part is in place.' He has poulticed my red and swollen skin more than once before. He knows I'll suffer mightily before I leave a friend, but he also knows how desperately I want to be loved back, and not just for one night.

*

The thing is, I'm not interested in brushfires or bonfires or Burning Man; I want a fire that starts with coffee in the morning and ends with wine by the fireplace at night. If we are to love, we must shelter, add fuel and blow. Love gives and takes, and like fire, needs oxygen.

I want fire that is the energy of two minds connecting by words and skin. Fire that is mostly conversation, the movement of thoughts and emotions and spirit from one body to another. Fire that is joy. Fire that becomes touch and then love and finally love-making. A desire to share ideas, thoughts, dreams. Histories and sex. Yes, a sex that burns so beautifully that it ends not in scars, but in trembling. I do not want a life made up of the cold embers of a fire that once was, nor the kind of hot fire that scorches the landscape of one's soul. I'm thinking of a fire that counteracts, in small but essential ways, the larger uncontrolled fires, those ravaging our earth, our fellow species, consuming our conscious and unconscious lives. A fire that counteracts the ultimate end to ourselves, an end which comes too soon for us to comprehend.

*

I live with this dread of impending time, the knowledge that every year on this planet will be hotter and drier, and every year I will arrive a little closer to my death. And that I do so alone.

Despite the love, love-making and commitments, his dreamy words are disembodied, and much like smoke, they are the natural excess of flame. I accept, with some chagrin and too much embarrassing self-pity, that I served a purpose in re-stoking a fire in his world. His world, not mine. I want to feel good about this, having brought two people back together, having loved enough to create a fire that burned the surfaces from their marriage because now they have fresh ground.

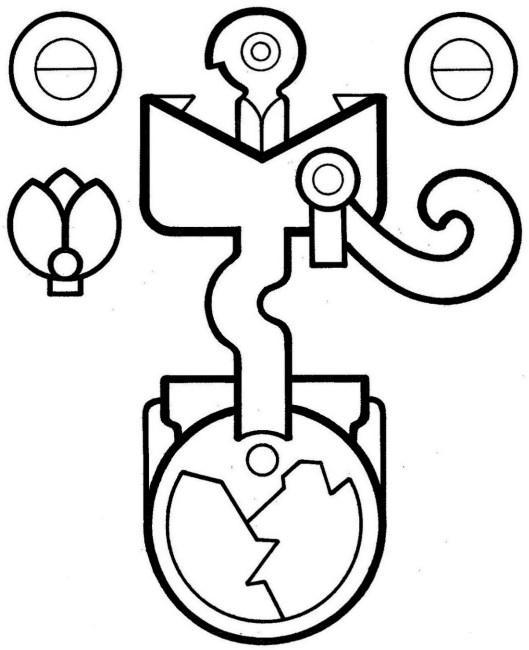
But I mourn what isn't. I dreamed of watching him across from me as

his face tinted orange and blue, becoming distorted through the flames. I imagined years of hearing his stories, the sounds mixing with the crackling of wood. I saw him repeatedly getting up to dance under sky and stars, flames rising into the night air around him, and I wanted to be the woman who smiled and watched, the one who could accept that despite the love and the love-making and the passion, he was an individual who approached, and might (but then again he might not) depart.

I'll try to come to terms with a reality I dislike: the pending apocalypse of our species, and the pending end of myself. But harder still is the reality in which I must live, a reality of my own making, the knowledge that I created this current hell against which I am now raging. I played with fire. I took too many risks, and despite my efforts and hopes, I am destined to stay on this side, the side that starts, shelters and fans, but ultimately is unable to control or sustain. I stay on this side, choking whenever the smoke gusts across my face.

BRIAN GEORGE

The Shining Path Advances



I.

A long-dead ocean rules for several miles above Britannia. In the USA, reactors burn. Ten thousand jails cannot contain the poor. The aliens have made a tenement of the sky!

There are toxic gases, and the doors to the Pole Star have been ripped off of their hinges. The Trucial Oman States have

fallen to a wave of UFOs. Their oil wells lift threads of smoke from the horizon. On derricks sway the iron balls.

The *Shining Path* advances, with a vengeance, through Peru. They hold up horns of burning lama fat. They guzzle as they run. They somersault from cliffs. They live to laugh. The Incas have surrounded Cuzco. Mt. Huaringana has become a pyre. The Quiché Maya now enforce their calendar on every bourgeois with a TV set. Down Belfry Mountain a great iron bell is rolled. It bongs from rock to rock. Mt. Chalpon glows with atomic hairs of light.

They have plowed down all dead matter in their way. Every car has now been overturned. They are milked for gasoline like cows. The puppet Fujimori hops. His stuffing has spilled out. He hangs burning from a lamp. The City of the Ancient Ones stands emptied of its citizens. Granite gods spit curses at the zodiac. Ten thousand graves yawn open. They do not stay vacant long.

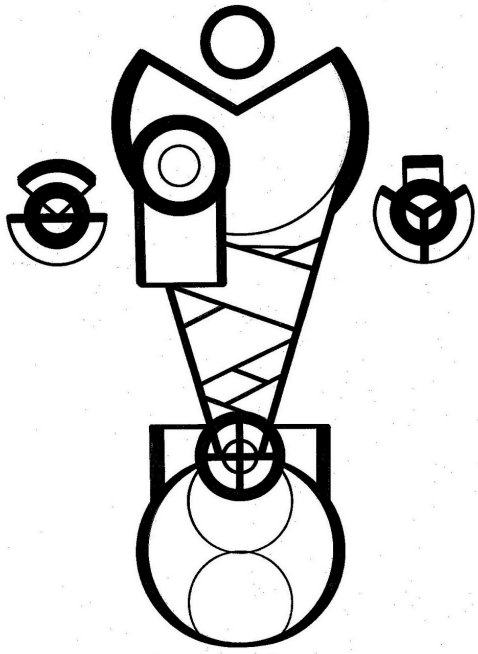
Rocks break. Crystal burns. Like a vein of rams, their lava has stripped the skins from buildings. Computers have short-circuited. The ghost of Descartes lectures to machines. Molten gold is poured down the throat of an agent of the IMF. All plate glass cracks. Girders, as by themselves, bend. Sparks blossom. Burning gymnasts do their favorite floor routines. No longer must they pass down judgments at the courthouse. Quite often without breaking, whole eggs vomit out of sinks. Glass boils and runs in rivulets down sewers.

Any CITGO sign left standing is now taken for a wonder. From the tallest skyscrapers, the mummies from Cajatambo are thrown off, their bundles sputtering as they fall. Rolls of cellophane have been tied to bridges. They flap and coil out on wind.

Over miles of aqueducts, the indigenous guest workers now march forth playing flutes. They beat on pots and pans. The light of suns turned backwards is their food. They do not have mothers, fathers. They are the shadow of the Seven, of the Triumvirate, of the Twelve. They have trampled into atoms Viracocha's skeleton. They have thrown their torches high. They catch them with their jaws. The sun has now been swallowed by a great pig-iron comet.

The Third World's lords transquantify the stone that the builders rejected. They have Reeboked TransAm into ruin. A new day towers in the underworld. Ix-Balba's bodies eat their data, choking as financial crimes are swallowed whole. *Nagas* deconstruct the law. Atlas shrugs. No longer must he guard the secrets of the atom.

Anaconda International has been dismantled by the proles. They stand erect on Cuzco's girders. They vault out into space. They leap from ledge to ledge. They coil over pyramids of burning books. They jump from crags. Like a wave, *Sendero Luminoso* has thrown itself upon the sea!



II.

The indigenous guest-workers have fed Ten-Ten. He coils. He uncoils, and the coast flexes with him, splitting along scars that never did quite heal. To see him is to fear. It is to watch one's hair rise in the presence of a current. It is to feel one's eyes go wide. It is to lose the top of one's head, to feel one's knees give out. To study his face is to roll upon the ground before one ever sees his tail. The Beast's belly is a furnace which the mummies from Cajatambo stoke. A rising tide consumes all economic models. At Yucca Mountain, steam hisses from the nuclear waste storage tunnels. The ghosts of Antarctica drag chains to the equator. There is no free market left.

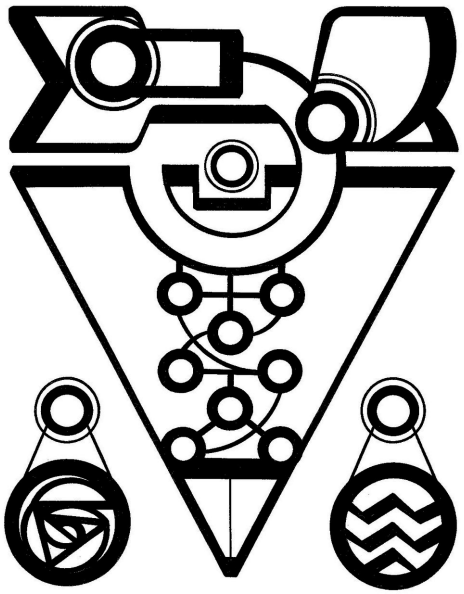
Ten-Ten's tail has whacked a flying buttress made of quartz, an archontic prop that had boiled from Heligoland. The Beast is programmed to consume the gods' configuration files. No part of history is natural. The image *Man the Maker* slews headlong through the void. It has aborted from the speed of light. It is the issue of a broken anvil. A narrow path opens – the Symplegades. Cesar Vallejo performs triage on an egg.

Ten-Ten, the serpent of the waters, flames. No other has been made like him. He broke the mould. The cast died. Through his spine, the most ancient of catastrophes have now made clear their path. Sinews ripple under adamantine glyphs. Blue teachers hang from the harpoons in his sides. Out of Baal's bones has been forged an embodied A-ankara Bolt. He surges up, convulses. He wracks the world frame with his back. The constellations to his head descend. Mount Huaringana is an anthill far below.

From high up, his great weight falls, He has raised his house upon the bowels of the *Nun*, the first fact, the fluctuation that does not exist. Migrations happen backwards to the continent of Mu. Tornadoes spin from many of his pores. He has ripped all nets. He is bigger than the glands of Ahriman.

Light rumbles from his throat. He bellows as he did before the first day of creation. From his forehead, there stream the feathers of a peacock. They fan out through a

hemisphere. White noise rules ground zero from L.A. to Jalalabad. A dead zone sprouts in Ur. The horizon rings with UFOs.



Images

Bird Arising out of Snake, Snake Arising out of Pot
– 1991, *pen and ink drawing*
Fish-Mummy with Bindu and Vimanas
– 1991, *pen and ink drawing*
Winged Serpent Uncoiling out of Triangle
– 1992, *pen and ink drawing*

STEVE WHEELER

Growth Factor

from: **michael.feig@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 2 Jan 2021, 17:40
subject: update

Hi guys,

With all the confusion before the holidays, I thought it would be a good idea to summarise where we are at. Apologies to those of you for who this is old news, and a very warm welcome to Peter – we're all hopeful your expertise will steer us through some of the sticking points!

So the generic product is due to launch in April, and management are very keen for us to at least be able to showcase a working prototype to coincide with the big PR push then.

Noriko has been working with a new cell line since November, and with Vijay's new scaffolding we've been getting some excellent early results. The combination of biophotonics and the MMES has been producing really great full-grain architecture in the product and we're hopeful that we can build on this to produce something totally 'lifelike' (sic) in time for the launch. Great job, team!

But we're still some way away from the crucial price point on this, so its all hands to the pumps between now and April please people.

I'd like to hear from each of you what your SitRep is and any suggestions as to how we can Build Better Together!

Michael

from: **noriko.otabe@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 2 Jan 2021, 18:08
subject: Re: update

Hi everyone! Happy New Year! :)

I was in over the holidays to check on my babies and everything seems to be cooking nicely. We've got microfibrils at each layer and there's a nice basement membrane forming.

Unfortunately campylo levels in Bioreactor 2 are above optimal, so I've had to up the Streptomycin and Cephalosporin drips to 22mg/l. We need to find a way to get my babies off the drugs! Haha!

The artificial diet system is working fine, and as the vasculature forms we can start to ease back on the serum levels, but the whole point of trying to develop an internal circulatory system is to avoid the need for total perfusion, so I'm very much pumped to have Peter onboard to help develop the SangReal. Welcome Peter! :)

Another few weeks and I can take a sample to Adaliopolis for ecotox tests. I just hope the ladies don't react like last time! :(

Super exciting to be working with you all! Let's do this!

Nori
XX
♥

from: **peter.morris@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 3 Jan 2021, 09:12
subject: Re: Re: update

Good morning everybody, and thank you for the kind words.

The key question, as I see it, is whether to continue using pluripotent progenitor cells or, as I believe would be preferable, to substitute artificially-repotentised adipocytes.

I'm also dubious on the wisdom of utilising foetal bovine serum in the nutrient media while the seedstock is of porcine origin. If I understand the functioning of the MMES correctly, the magno-electric stimulation is intended to mimic the naturally-arising morphic field of a total organism, in order to correctly guide the emergent tissue architecture. It seems plausible that the different signature of the serum could be interfering with the resonance structure of the field. That may be why we haven't seen Stage III architecture arising yet.

If you want internal circulatory systems, I suggest reducing the oxygen gradient; without borderline anoxia, there's no incentive for the tissue to stand on its own two feet (as it were) – it will stay tied to mother's apron strings and never build an oxygen transportation system of its own.

Yours,

Peter.

from: **vijay.paraiya@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 3 Jan 2021, 10:54
subject: Re: Re: Re: update

Trouble with switching the cell line is we've just got this one working, & everything's calibrated for it. Change it up and we'll be starting from square one all over again, with not a hope in hell of getting anything ready by the Spring.

Assuming we're *not* chucking out the last 2 months of work tho (soz Pete!), I've got some ideas.

There's a lit new alginate meatsheet coming through from Mats which might speed things up. And if Pete's right and we can cut back on the O_2, we should be able to just speed the centrifuge way up. That'll push the O_2 through and get the myoblasts swole AF at the same time. Little fuckers'll be like Mike Tyson and shit.

Might have to up the growth factor to stop it all turning into mush, tho, I dunno – that's Noriko's pitch.

Peace,

V

*

from: **michael.feig@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 27 Jan 2021, 16:37
subject: Re: progress

This is really exciting, team! I just wanted to touch base and say, well done, and keep it up!

It sounds like we're seeing a real step-change in the architecture. I know we had some teething troubles with the new set-up this year, but the results speak for themselves! You can all be really proud of what we've achieved. Remember, if everyone switched in the US to our product, it would be the equivalent of taking 23 million cars off the road! We're doing good work here people.

Obviously we still have to get it past the FDA, but I'm confident the tiered risk assessment formula and our good relationship with the Journal will smooth out any problems.

We also really need to make progress on the SangReal. This has got to be a priority, because Comms have identified ethics as a key USP for us, and we can't really claim to be vegan and have animal products in the production process now can we?

Speaking of which, news from the top: the Beckson Tobe reboot is going ahead next month after all. You'll all be glad to hear that 'Newd' was nixed at the last minute, and the outward-facing company will be known instead as 'Eathica' as of the 14th. Logo packs and color system info will be coming through, I know you don't like all this stuff but please read them carefully. This means you too Vijay!

We'll keep using the same internal systems for email etc though to avoid disruption at this crucial time, and for tax purposes you will all be subcontracted to a captive company within the overall B-T Innovations umbrella. Any questions about this to Finance please I don't really understand it myself.

We've got another VC round coming up in May so its mission-critical we keep up the pace. Go team IVM!

Michael

*

from: **peter.morris@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 4 Feb 2021, 12:14
subject: Cell differentiation

Hello everybody,

I was discussing this with Noriko in 'Slack', but I thought it would be worthwhile keeping everyone on the same page.

Ever since we applied the repotentisation procedure to the original stock line, there appears to be a slight excess of cell differentiation. Some of them are granulocytes and basal cells – which is fine, of course; it's precisely that kind of variety we were looking for in order to improve the grain of the tissue – but we also appear to have duct cells, keratinocytes and even what look like gonadotropes. Their numbers are very small at the moment, and I can't see any regulatory bodies having a problem, given what they allow in 'natural' products, but we should be keeping an eye on this.

Curiously, some samples look like they're trying to form an epithelial layer across the top of the whole unit – I surmise as a reaction to the increased ambient oxygen levels activating K-dependent clotting factors.

While I have your attention, I must apologise in advance for my absence at the meeting on Monday. I have a hospital appointment on Monday morning which I am unable to rearrange.

Yours,

Peter.

*

#developments | *Add a topic*

12th Feb

Noriko 10:02 am
Well, we said we wanted 'authentic', right? :D

Michael 10:02
OK so what is it?

Noriko 10:03
It's nerve tissue! We were playing with the growth factor and it was working really well in developing arterial supply, capillary structure, cell differentiation. We had that issue with the hairs last week but that seemed to just go away. And then this morning – boom! – there was a beautiful nerve, with myelin sheath and everything, running right through the centre of a unit. :)

Vijay 10:04
I'm looking at it right now. Nori's right - it's not just grown on top. Looks like it's invaginated right through the muscle. Does that mean we can get it lifting weights on its own? ;)

Peter 10:05
Is it electrically active?

Noriko 10:05
I don't know, I'm going to test that now.

Michael 10:06
Sorry, what am I missing here? Surely no-ones going to want to eat something with a huge nerve running through it?

Noriko 10:06
But Michael, this is super exciting! Nothing like this has ever been done before!

Michael 10:07
People, we need to focus. Launch is only 47 days away. If it can't be eaten, we're not interested. Scoop that bit out and get back to working on what you're paid for please.

*

from: **michael.feig@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 22 Feb 2021, 20:49
subject: Important

Hi everyone,

In case I wasn't clear in the meeting, its **really really** important we solve this color issue. We're almost there with the mouthfeel, but Corporate have come back on this and they need it a lot redder.

Theres a strategic pivot being mooted to targeting the initial launch towards High Net Worth Individuals on an exclusive subscription basis, and their data suggests an authentic 'blood' aesthetic is key for that market.

We may have some wriggle room on the nutrient media there. I'm waiting to hear from Comms, but it sounds like they're ditching the whole 'veatgan' thing; Paleo is coming back and they want to lean on the fact that our product is grain-free – but myoglobin may be fine again!

So forget about 'from vat to Veat'. Current word is that they're going to go with 'smeat' instead, with a 'Superman S' in the logo. Someone pitched the slogan ' 's meat – but not as you know it' to the Bossman, so thats probably locked in now.

Peter, I want you to take point on this. And keep me in the loop!

Michael

*

#moredevelopments | *Add a topic*

3rd Mar

Peter added **Michael** to this thread 09:33

Peter 09:34
I think you need to come in on this, Michael.

Vijay 09:34
So how the fuck did it happen?

Noriko 09:34
It must be contamination – like a piece of grit in an oyster.

Vijay 09:34
Where could it be contaminated from? It's a sealed loop!

Michael 09:35
What? Whats going on?

Noriko 09:35
It's got to be the nutrient stock, right?

Peter 09:35
There have been further developments, Michael.

Vijay 09:35
You're not going to believe this shizzle, Mikey-boy.

Noriko 09:36
I was checking the brood first thing this morning, like always, and there it was.

Michael 09:36
FFS – there *what* was?

Vijay 09:36
A feather, Mike. A. fucking. feather.

Michael 09:37
What the hell are you telling me? How did a feather get in there?

Noriko 09:37
Not get in there, Michael. It had a follicle site in the tissue. It grew there.

Peter 09:39
Michael?

Noriko 09:39
Are you OK, Michael?

Michael 09:40
I want to see all of you in my office right now.

*

from: **peter.morris@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 7 March 2021, 15:30
subject: theories

Hello everybody,

Leaving aside Vijay's wilder conjectures and Michael's corporate sabotage theory, there seem to me to only be two plausible possibilities – contamination, through the nutrient medium or by vector as yet unknown, or a spontaneous genetic anomaly within the cell stock itself.

The first possibility has now been largely ruled out by the development of additional epithelial, sebaceous and osteoid structures. We have to accept that these formations are emerging spontaneously from within the tissue matrix.

We should not be shocked by this, although it took us all by surprise – these structures emerge spontaneously in the embryos of living

creatures, after all, and our whole approach has been to try to mimic the developmental factors that give rise to complex tissue architecture. We have simply been a little too successful.

I suggest we ease back on the growth factor and reduce the centrifuge speed to see if that has any effect and, in the meantime, continue to excise the unwanted tissue formations.

Yours,

Peter.

*

from: **michael.feig@becksontobe.eat**
to: IVMteam.mailbox@becksontobe.eat
date: 11 March 2021, 23:54
subject: delivery

Hi team,

Firstly, let me begin by apologising for my outburst this afternoon. I'm under quite a lot of pressure from Corporate on this but that doesn't excuse my unprofessional behaviour, particularly as I know some of you are dealing with some difficult circumstances at home.

The bad news is, the increase in neural tissue is eating into our bottom line, so we've lost a lot of the progress we made towards the price point. Unless we find a way to stop these transformations we're going to have to consider junking the whole line and starting again, which of course would mean missing the April 1st deadline. I don't need to tell you how bad that would be for all our prospects here at Eathica / BTI.

The good news is, Corporate are doubling down on the bifurcation strategy – there'll be an aggressive roll-out of the generic microbead slurry to LDCs, while they focus on high-value 'like-real' goods in Europe and the States.

That means we're still in with a chance! No-one else is producing anything in the class of smeat! Let's not give up now – pedal to the metal people!

Michael

*

#lockdown | *Add a topic*
19th Mar

Noriko 17:22
I just don't see what their problem is. I mean, the cells are alive, right? Who cares how they're organised at the macro-scale?

Vijay 17:22
Well, some people just don't think with their heads, Nori. They feel queasy if you tell them they've got bacteria living inside of them – how do you think they're going to like hearing about teeth growing in their meat?

Noriko 17:23
It was a fragment of bone, Vijay.

Vijay 17:23
It was totally a tooth, Nori.

Peter 17:23
I must say, my health improved enormously when I went on a ketogenic diet, but it's a wonderful prospect to be able to eat that way without the ethical or environmental concerns. Have you tried it, Vijay?

Noriko 17:25
Vijay is a vegetarian, Peter.

Peter 17:25
That wouldn't apply to smeat, though, surely?

Vijay 17:25
Doesn't matter. It's a religious thing.

Michael 17:26
Isnt there any work you guys could be getting on with from where you are?

Peter 17:26
Are we still on lockdown, Michael?

Michael 17:26
I'll let you know when I hear anything.

Noriko 17:27
Do they know who it is yet?

Michael 17:28
They think its that new animal right's group, the APF. They seem to be upset at the prospect of millions of unneeded livestock being culled – I can see one poster saying: 'Full Animal Employment Now!'. Might be a while sawing them off the doors.

Vijay 17:29
Man! I had tickets to see ThirtySeven tonight.

Michael 17:29
Another one says 'A cow is for life!'. What does that even mean?!

*

#finishline | *Add a topic*

29th Mar

Noriko added **Michael** to this thread 13:44

Vijay 13:44
Oh congrats, Noriko, that'll make everything better.

Noriko 13:44
you're not doing it! :(

Vijay 13:45
Orders is orders, right, Mike?

Michael 13:45
Look guys, I dont really have time for this right now. I've got a meeting with Corporate in ten minutes.

Noriko 13:46
Michael, I won't let him kill it.

Vijay 13:46
Jesus, Nori. It's not alive!

Noriko 13:46
Of course it's alive – that's the whole point of what we do!!

Michael 13:47
OK both shut up and tell me what the problem is.

Vijay 13:47
I'm trying to do what we always do and excise the problem tissue from Unit 17 and Noriko is freaking out.

Noriko 13:47
It's an eye, Michael. It's grown an eye!

Vijay 13:48
Only a little one. Doesn't even have eyelids or anything.

Michael 13:48
Please tell me this is a joke.

Noriko 13:48
It followed me round the room! When I moved closer the pupil dilated!

Vijay 13:49
You're imagining it. It's just another growth.

Michael 13:49
OK. Its OK. Noriko, didn't you tell me theres about a kilo of neural tissue running through the rest of the unit? That's why its responding to light and movement, right?

Noriko 13:49
It's looking at me right now, Michael. If it's got that much neural tissue, how do you know it's not *seeing* me?

Michael 13:49
I cannot go up to Corporate and tell them theres a fucking eye in the smeat! I know you're very attached to the units, Nori, but lets just sweep this one under the carpet and get to the finish line, OK?.

Peter 13:50
Well, actually, this does sound very interesting.
We certainly shouldn't just dispose of it – think of the scientific implications!

Vijay 13:50
Oh here he is. The Professor's got something to say! Don't hear shit from this asshole for weeks while the real work's got to be done, but as soon as something *interesting* happens suddenly he's got to get involved.

Peter 13:50
Well, there's no need to be personally insulting.

Michael 13:50
Vijay you're way out of line. That language is totally inappropriate in the workplace.

Vijay 13:51
Fuck you, Michael. I'm going to dig the fucker out.

Noriko 13:51
Vijay no!

Michael 13:51
No-one do anything! I'm coming down there!

*

from: **yvonne.tusker@eathica.eat**
to: IVMteam.mailbox@eathica.eat
date: 21 April 2021, 08:06
subject: Fresh start

Hello team.

First, let me start by saying it's great to be working with such a talented and capable group of individuals. I've no doubt you're keen to show just how much you can deliver for Eathica.

I don't want to dwell on the past. It's a real shame what happened with Michael, but I'm sure you'd all agree that he didn't run the tightest of ships. Corporate has been very clear that they'd like that to change, and they've tasked me with turning things around.

We'll start with performance reviews this morning, and then we'll talk forward planning. We may have missed the April launch, but if we can have things on track for the summer, I think we all might just come out of this looking pretty good.

So let's Build Better Together.

Yvonne.

LINDI-ANN HEWITT-COLEMAN

burn this if you want to

i offer no illusion.
last night the henhouse was raided –
opened the door to a mess of
feathers and blood this morning,
all of them gone.

nothing of the spotted hen but her liver
licked clean on some star-splashed quills.
the rooster dead and whole in the middle of it all,
too big to be carried into the night.

and what is to be done now
when there is no undoing
and blossoms still open
petal by petal
to the sun?

i offer no hope, i never could.
i never could be your shield
in the face of inevitability.
i want to see us thrive,
but that is between me
and the rich dark earth –
hands and knees
in the garden.

the moon rose.
the raspberries were good, tart,
early or perhaps really really late;
either way there is no space in the sky anymore
for anything other than what always was

and always is. plastic bags have learned to swim like jellyfish,
riding ocean currents crammed thick and close
with plankton and krill and bottles.

i offer no religion
but the pulse of rain
and forest –
though you know
we'll turn to prayer
when the world is aflame
and the ocean starts to gnaw
at our cities. but who then
will be listening –
what sane god would choose
to love us now?

and of course we ran when the flames came close.
laid my hands on the soil of my home,
whispered *stay safe*, while spring flower heads
towered and lolled in the unseasonable wind.
crammed child and goat and dog in our car
and fossil-fuelled our way to safety –
an ugly irony in this warming world.

i offer no excuse;
this is not a season we might remember,
but a landscape.
winter has washed through us,
left our bones clean to the wind

and yet spring rises – sap-green and bursting
with new growth gathered with words and hair
to make an effigy bound with grass rings, woven
while wild freesias bloom along the river

where sometimes fish as long as my arm
leap, slap the surface silver and

return to the depths i could never fathom –
even in summer, diving below,
ears taut and full with pressure
arms reaching beyond my breath
outstretched until there is nothing but sun-shafts, shadow-water
and eternity looking at this moment, bathed in light.

i offer only this,
burn it if you want to.

NICK HUNT

Older than Writing

A conversation with Richard Powers

Fiction is meant to shift our perspective, to help us see the world through new eyes. It is extremely rare that it genuinely does. But in the long, hot summer of 2018, with the newsfeeds full of images of blazing forests and blackened trunks, I found myself stopping in the street and staring in astonishment at the trees – cherries, rowans, ashes, limes – that grow in the city in which I live, unable to believe I hadn't noticed them before. Suddenly these familiar presences seemed more *present* than before. I was more aware of them; and they seemed more aware of me. I had just finished reading *The Overstory* by the American author Richard Powers.

The novel begins with mass death on an inconceivable scale. The opening chapter tells the story of the North American chestnut blight that struck the east of the continent at the start of the twentieth century, killing up to four billion trees and tearing apart whole ecosystems and ways of life. This devastation forms an overture for the book: although *The Overstory* is a novel very much about people, the trees themselves are the focus, the principal subjects of the narrative. Trees are not mere scenery, a backdrop against which the nine central human characters live their lives, but motivating entities that give those lives direction and meaning, intervening, like ancient Greek gods, in countless profound and subtle ways. The struggles, tragedies and triumphs of the humans are played out in the shadow of something much vaster, older, and – in many ways – more interesting than them.

In his previous 11 novels Powers has ranged far and wide through themes including virtual reality, artificial intelligence and genetics. Before becoming a writer he studied physics and worked as a computer programmer. His ability to assimilate and draw from different kinds of knowledge is evident in his multivarious descriptions of trees: they are never unconscious objects but perceptive, sensitive beings capable of communication, forming interconnected networks of vast reach and

complexity; fantastical alien creatures turning sunlight into energy, conjuring matter out of thin air; repositories of memory, travellers through deep time; spirits, even gods. The thing that unites these visions is an overarching sense of awe, which stems from an experience that Powers says first opened his eyes to the extraordinary nature of trees: an encounter with an old-growth redwood in the Santa Cruz Mountains of California, which he has described as an 'epiphany'.

I tried to meet up with Powers during his book tour in the UK, but – most wonderfully for a novel more concerned with trees than people – *The Overstory* had just been shortlisted for the Man Booker Prize, so his schedule was too packed to allow a meeting. Eventually we managed to speak on a crackly phone connection – him on his deck outside his home in the foothills of the Great Smoky Mountains, me outside a cafe in Bristol on a freezing December night – for a conversation that ranged as widely as the themes of his novels.

NICK HUNT A central strand of the Dark Mountain Project is seeking writing and art that recognises, or perhaps remembers, that humans are not the centre of the universe, not the most important thing, but merely a small part of the whole – work that attempts to decentre itself from the human experience. *The Overstory* achieves this better than almost anything else I've read, and certainly anything that would normally find its way to the Man Booker shortlist. Is that what you saw yourself as doing when you started writing it? Decentring yourself from the human experience, and writing from outside that bubble?

RICHARD POWERS Yes, that's a marvellous place to start. At the heart of this book is a very simple idea, and it's one that has been explored for some time by environmentalists and philosophers and scientists and political activists, and yet hasn't quite seeped into the arts – and certainly not this most human-centric of arts, the commercial novel. The idea, quite plainly put, is that there is no separate thing called humanity, any more than there is a separate thing called nature. The great insight is that there are only reciprocal processes and networks between the agencies and agents and actions and actors of life, and that this entire capitalist, individualist, anthropocentric, commodity-driven, private-means-driven culture is based on a fantasy, an ephemeral fantasy that starts in the wrong place and is going to end disastrously. So the trick is how to use what has essentially become a medium that *celebrates* all of those qualities – the

separatism and the human exceptionalism that we have so deeply assimilated into Western culture now – and turn it towards undermining those very propositions.

The book began as a response to what in North America has come to be called the 'new forestry'. That is an umbrella for a lot of developments, including many startling scientific discoveries that have become better known to the general public over the last couple of years, but also economic thinking, social reflection, best managerial practice and so forth. All these insights converge on the discovery that trees are highly social organisms, and that the forest is built out of an immense number of mutualist, reciprocal interdependencies. For every act of competition that we previously thought was the driving force of adaptation and natural selection, there are many, many, many acts of cooperation.

The kinds of discoveries that lie at the heart of the new forestry involve things like trees signalling to each other over the air, coming together to form vast shared immune systems, or the trading of food and medicines underground through these long fungal filaments. And, most stunningly of all, the discovery that these mycorrhizal systems actually link together creatures of different species, so that a birch tree and a Douglas fir tree would be inextricably linked through these fungal intermediaries. So now, when we look at a forest, instead of seeing this justification for an archaic understanding of evolution and the survival of the fittest, we see a highly cooperative and interdependent system that you can almost think of as a superorganism.

NH In a way that's what the novel does, doesn't it? We see humans being drawn into that superorganism. Trees are not only communicating with each other underground and through the air, but they also communicate with people.

RP That's right. I could very easily have created a novel that did some kind of sleight of hand, or a fabulist approach to trees, and have introduced them as protagonists in their own right. But that would have committed the fallacy of exceptionalism from the other side – to have created a narrative about nature as if nature were separate from human activity. What I'm proudest about in the novel is the juxtaposition of human protagonists *and* non-human actors and agents, to put them together into a shared ecosystem, showing the ways in which their fates are inseparable. To me that is a return to what world literature *was*, in most cultures and for most of history, prior to the modern Western industrialised separation from nature. There was a time when any story we told about ourselves

would necessarily have had to place non-human actors and agents at the centre of that story. We have to find some way to narrate and dramatise this huge mycorrhizal superorganism that connects us to everything else alive.

It was a matter of surprise to my acquaintances and my friends while I was working on the book, and was always met with a great deal of suspicion, when I said that I was trying to tell a novel that was profoundly concerned with the fate of trees. However, having spent the six years making and publishing and promoting the book, *my* surprise is that all of literature doesn't put the non-human front and centre. How can it not? And you know, it once did. What has happened to me in the course of gaining a kind of tree-consciousness is an undermining of this deeply colonising idea that meaning is private, and that our art needs to explore the pursuit of that private meaning through personal psychologies and private lives. So now, for me, the surprise is how long we've gone – and how deeply we've gone, and how universally we've gone – in the direction of believing that somehow we can narrate our fates. Why don't all novels have trees as part of their cast of characters?

NH And where did this tree-consciousness come from? You've described an epiphany moment, seeing an old-growth redwood in a second-growth forest and having almost a religious conversion. Was that where it started, that awakening?

RP That direct confrontation with the old-growth redwood in the Santa Cruz Mountains was instrumental, that was my road-to-Damascus moment. But what I don't often get to talk about is that that moment became less important to me than the processes it set in motion. The starting moment almost became secondary to a long set of processes that are still going on deeply in me, you know, once I came down from that mountain. So it is really a story about the weeks and months and years that followed. And that took me outward and outward the more I read, the more I looked, the more I stood in the field and held still, asking this question again and again: what is this individual tree doing that no other tree is doing? And that took me back east, to the part of the country that I had grown up in, into the broadleaf deciduous forests of eastern North America, where the trees had been at least nominally familiar to me, and I saw them in a totally estranging and new context that was really the heart and soul of my transformation.

So it isn't enough to have a powerful affective or aesthetic moment. The processes of indifference and inattention must disappear, to be

replaced by a state of perpetual presence. I live in the Smokies, I go out every day into this remarkable place where there are more species of trees than there are in all of Europe, from Portugal to the Baltic states, and I spend hours out there. Each day becomes the source of a new potential education, a new potential appreciation.

NH Right, it's relatively easy to have one profound moment that shocks you or surprises you, that Damascene moment, but the real work is what you do after that. People have those experiences and then forget them, because they can't integrate them into their ordinary lives.

RP A couple of observations about that. The first is, indeed, that that kind of insight cannot be integrated into ordinary life as we know it. What we call 'ordinary life', what we call 'the real world', is of course this vastly faked-up and artificially supported and sustained imaginary world called human self-sufficiency. So to have to come back down that mountain and rejoin a world which operates under the assumption that meaning is personal, and depends upon the individual's relationship to commodity, and the individual's standing in the artificial hierarchy of social structure – all of these suppositions of Western capitalism that are so deeply engrained in us that we don't even see them, let alone consider that there might be alternatives… In fact, the process isn't incorporating them into your ordinary life, the process is shedding what was once your regular life in favour of a series of constant surprises and insights.

The second observation is, you referred to this process as 'the real work', and I'm happy to say that it's the very *opposite* of work. It's a kind of release, and relief, and joy, that defeats the ordinary idea of work as a generator of meaning. It's a surrender, a kind of supplication, a humble position, that is a source of pure daily pleasure.

NH There is a real sense at the moment, I think, that people are finally being shocked awake to some of the reality of what's going on. Especially after this last summer, when we saw forest fires raging across the Northern Hemisphere from California to Greece to Scandinavia. There were even moorlands burning in the north of England. This has been so utterly terrifying, so unprecedented, so horrific, that a lot of people are finding it harder to deny the very basic evidence about what's happening on a global scale, about where capitalism is leading us, where consumerism is leading us; these insane political systems that people have stopped believing in but still have to go through the motions of. Do you have any sense that something might finally be changing in our culture, that people might be being shocked out of this dominant narrative?

RP The fires have been deeply sobering and overwhelming, not just this year but the last several years running. It's often been commented that we used to have a fire season, and now that season has become year-long. The incidence level goes up and down, but the danger is omnipresent. The recent governmental report on the consequences of global warming – that, ironically, was produced under the Trump administration – has intimated what the future of the country may look like with regards to these fires, not only in their hugely increased incidences, but in their vastly increased range. This report speculates that, unchecked, the amount of damaged area per year could go up by a factor of six in the next century. That's just mind-blowing.

So the question is whether something like that – a direct confrontation with the consequences of our alienation from everything that's alive – whether that can be the sobering trick that helps us turn the corner… I think there *is* evidence of it happening. It happens at small gauges that aggregate into large gauges. When you read interviews with people who have lost everything in these fires, there is always that moment when they say: 'I have awakened to what's important in life.' That individual moment of conversion in the face of disaster. At the level of collective social awareness, I do believe that we've passed a kind of trigger point with the proportion of people who realise that an unreflective way of life is now being presented with a bill. There is a growing public call for stepping back and asking what it is that we consider important.

Of course, we do have a president who has blamed the fires on the *trees*, on 'poor forest management' – meaning not enough lumbering – and this is all understandable too, in terms of psychology. When an individual person is confronted with news of their own mortality, the stages of denial are quite clearly mapped out and understood. The fact that Trump has tapped into a portion of the country whose answer to the catastrophic challenges presented by climate is denial – returning to an era where human mastery was never questioned, and is part and parcel of a programme of dominance and separatism and superiority – is not surprising. We know enough about human psychology to know that the first thing we're going to do when the doctor tells us we're looking at a possible death sentence is to say, 'To hell with you!'

NH It seems to me that it's almost gone beyond denial – that seems a bit old-fashioned now. On some deep cultural level capitalism has accepted that catastrophe is happening, and its reaction is to go faster, go harder, go deeper, consume more. It's almost like a death wish. We've gone this far,

and it's easier to go over the edge of the cliff than pull back, and then do all the hard psychological grieving that pulling back entails…

RP The way that the Trump administration is trying to accelerate the destruction of natural capital… that's not driven by economic considerations. In fact any kind of reasonable approach to profit would have to accept and acknowledge that opening up, for example, a national monument to drilling is not a profitable activity. I live half a mile from the boundary of the Great Smoky Mountain National Park. People come here because they're absolutely desperate to feel a part of something that they've lost – so the park brings in almost one billion dollars a year in the form of touristic revenue. Destroying anything that is generating revenue on that scale, in order to produce a one-time windfall that can barely match the annual draw of the park, is just insane. To take Bears Ears National Monument and reduce it by 85%, and say 'Let's put a mine in there', a mine that's going to have a finite lifetime and completely destroy the land for any other use… it's got nothing to do with making money. It simply has to do with the assertion of a thwarted will. It is the same programme as the rejection of multiculturalism and LGBT liberties; it's a demographic of white male privilege that's been lost, and is now trying to reassert itself.

But I'm almost uncomfortable making the argument that these places would have more value if you count both the ecosystems services and the social revenue, because to do so is to remain inside that colonised narrative where we have to justify everything in terms of economics. What needs to be said is that the human spirit *itself* is dying under these systems, however profitable or unprofitable a course of action might be. We are simply withering away in terms of meaning and purpose – this idea that Robin Wall Kimmerer and others talk about, of 'species loneliness'. None of this can be addressed by simple economic calculations.

NH The phrase 'ecosystems services' I find utterly horrific – the whole idea of 'natural capital', where everything is defined by how useful it is to the human economy. I understand it as a tactic, but I think it's flawed reasoning. We need to find meaning in a very different place…

RP Meaning is out there. And yes, perhaps it has taken us some degree of well-being and prosperity and security to reach a point where we can begin to turn back to that question, but it's not being nostalgic to say that when pre-modern cultures thought about meaning they had an arsenal for confronting all the terrors of mortality that we don't have, they had an arsenal for joy and purpose and connection that we don't have. The

real challenge for us, if we are to hold out any hope – not for continuance, because we can't continue in anything like the current configuration of the social order – if we are to think of true rehabilitation, of reclothing and repurposing and rejoining our existence to this world, to living *here*, and not in some imaginary place of our own devising, the real challenge is: how are we going to get there with our current reservoir of technology and knowledge intact? What *would* be nostalgic is the belief that, in order to rejoin the world, we have to go back to a pre-technological state. That's not going to happen. It's too late for it to happen. I think there is another possibility between going back to some Rousseauian, prelapsarian vision and going down in the full blazing fireball of the capitalist embrace. I want to introduce at least the possibility of some third outcome.

People often forget that the rise of environmental consciousness in its modern form, the rise of ecology as a science, the rise of complex systems as something that we can understand and model, all those things arose as a consequence of the development of computation. If we didn't have machine computation, we would not be able to make models of climate that confront us with the consequences of our own actions. There is no-one in the fight to save humanity from itself that isn't enlisting and depending upon these incredibly powerful prosthetics to help them understand what is going on, to communicate the message to other people.

NH I wanted to ask about your relationship to hope. In the novel something very interesting happens. The environmental activists ultimately fail: two of them occupy a giant redwood for over a year to prevent it being felled, and witness the forest being brutally cut down around them. But during that process, when they're squatting the tree, they undergo a deep transformation that happens on a spiritual level. They become one with the tree, they fall in love with the tree as well as with each other. So it's ultimately the story of a failure to protect the thing they're trying to protect, but going through the process changes them profoundly.

RP Yes. In failing, and in going into the Underworld for a long time, and emerging only to be punished again by society, is the beginning of this truly Ovidian metamorphosis whose consequences can't be seen from inside the story. The question of hope is such a loaded one, because we need to stop first and ask: hope for what? Those people who feel despair are in the first necessary stage of transformation. You need to despair for the impossibility of the continuance of the life you've embraced, in order to become something else. Even the most pessimistic among us very rarely

say that they believe that the changes being worked in the Anthropocene are going to be fatal to life on Earth. Life on Earth has survived many mass extinctions. Trees themselves, which date back almost 400 million years, have survived many mass extinctions. The continuance of the project of life gives no comfort to the person who has placed all of their sense of meaning on the human exceptionalist venture, so they must go through – as the characters of the book do – a defeat, and some degree of despair in the face of not being able to hold that particular project intact.

NH That's very much the journey that many involved with Dark Mountain have been on. They've been through despair, and not turned away, and found that there is something on the other side. I still can't quite define what that something is …

RP Might I suggest this tentative exploration? Think of all the things that give delight, and purpose, and meaning, to a person inside this individualist, exceptionalist, commodity-driven culture. Take them all away, with a kind of annihilating despair. And then start to replace them with certain things that seem terribly small at first, like the realisation that life will continue in the face of anything that humans can throw at it. Imagine a life where humans were still here – this astonishing thing that natural selection comes up with after four and a half billion years of tinkering, called awareness, consciousness – and say *that too* could be an integral component of the relentless, ubiquitous exploration of life as it postulates what can work here on Earth. If you can start thinking of us not as lords and masters, but as a kind of singular possessor of something that life is after, that can be put to the service of understanding, revelling in and promoting rich, stable ecosystems, then that is the first component of a dream of human habitation on Earth that would be full of meaning, that wouldn't be at war with everything else that is alive.

Here's what may be some cause for hope. The clock of biological evolution is very slow. The clock of cultural evolution is blindingly fast in comparison. And the clock of digital evolution is even faster. We've been creating the Anthropocene over centuries now. In a much, much shorter interval we've come up with a complex symbiotic relationship between humans and computing machines that allows us to create models that have changed our consciousness. We look at these interpretations of climate and we see ourselves. All of a sudden we know who we are and what we are doing. All of that happened so quickly. It would be wrong to say that we aren't capable, in light of yesterday's transformation of our understanding, to begin to change the infrastructure of human existence.

Yes, it's clear that we're living through a new mass extinction event that we've created, but because our machines can travel even faster than us, the speed and leverage that our prosthetics give us might very quickly enable another way of living.

NH Time moves in very different ways. We already know that tree-time is vastly slower than human-time.

RP Right. There are individual bristlecone pines alive in the White Mountains of California that are older than writing…

ANNIE BISSETT

Gaslight

Watercolour woodblock (mokuhanga)

These shapes derive from stills from a video of fracking well gas flares. The title is a double-entendre with the psychological term 'gaslighting' (to cause a person to doubt their own sanity), which is heard often lately as people discuss the condition called narcissistic personality disorder and whether or not the president of the United States suffers from it. From the series *Playing with Fire* created during the first year of the Trump presidency.

AMORY ABBOTT
Love Without Hope II
Love Without Hope III
Charcoal and pastel on paper

The series *Love Without Hope* is a reflection on the grieving process humanity is, or will soon be, going through in light of climate change, industry and land use. If wildfires will only become more common, and all is effectively lost, how do we still appreciate what exists in a time without hope? Finding beauty in the fire, new life in the transformation, love in the relinquishment of the self to the needs of the forest.

ANNIE BISSETT

Wildfire

Watercolour woodblock (mokuhanga)

2017 was a record-setting year for wildfires in California and other parts of the western USA. Climate change deniers continue to argue that we've always had fires and that weather is just weather. The Trump administration continues to dismantle federal actions that address both the causes and the effects of climate change, and California continues to burn. From the series *Playing with Fire* created during the first year of the Trump presidency.

NEALE INGLENOOK

Letters to My Sleeping Child

17th July

I sit in a room with you, my child, born eight days ago. I in the rocking chair, you splayed on the bed under your blanket in your turbulent sleep. Your little grunts and furrows of the brow, arm stretch, leg kick, then falling into rest, your hand beside your ear in the position you were born. That ear scrawled with a cloud of veins almost too small to see, thousands of streaks of red lightning. Everything about you is in miniature, condensed. Your hands with the nails like flecks of glass, wrinkles at the knuckles, tiny versions of my own. Your hands concentrate all the feeling of my own hands, which can cover half your body.

I watch your breathing raise the blanket, like a bird under its feathers. Your fingers clench against your pink palm under the sway of a dream.

My body knows your body. My guts yearn for you to be warm, safe, fed. Thinking doesn't help – my body is learning your animal language, and together we meet your needs.

Every day I watch you weather the severity of merely living. You endure the spitting-up of curdled breast milk, ceaseless hiccups, the sensitivity of new skin first exposed to air, bowels bunching in their work, the tormenting ache of an empty stomach. I see how you recoil at a tender brush to your arm. Your mother is often overwhelmed with her love for you, caught in an amorous seizure. Sometimes love might be confused for pain, just by its intensity.

Many afternoons as the sun drops west you bawl with the discomfort of fatigue. You long for sleep but don't know how to do it. I walk back and forth with you below the oaks and pines, between tent and shower house and garden bed, you crying in my ear, me shushing in yours, trying to imitate the sound of waves on sand, or wind in the stones of a mountain pass.

At last you fall asleep, after how long I don't know. An interminable

period in the life of a newborn. But then you are nestled in my arms, breathing easy, at peace.

You live through these discomforts, animal that you are. You are all feeling, all body. It's clear to me, through you, that cognition grows from the body like an antler, a branch from the trunk. Elsewhere, life makes its movements, in your body, in the tent rippling, in the oaks awash in the breeze, in the pine needles against the sunset you grow quiet to look at. You, unseparate. I, feeling that more palpably than ever.

With you I am forced to recognise my animal self, my very substrate, my thoughts passing over it like thunderheads in the mountains – forming and reforming and dissipating in a few moments time, looming large yet ephemeral above the bedrock, my body.

23rd July

You are two weeks old today. This morning I held you, while your mother slept. You suckled on my little finger, the cuticle burning with your saliva. Your irises are a dark steely gray, like the winter ocean off Point Lobos. We stared into each other's eyes, and I thought, *You are all of a piece*.

I meant you have yet to be fractured, to see yourself as sitting inside your head, separate from neurons, pumping blood, churning guts, firm bone turning in the socket. You are not even separate from your mother yet – you are tied so clearly I can almost see threads in the air between you. Her body still feeds your body. You are often laid skin to skin, just as the moment after you were born.

Your mother is your context, and here am I, your father, one layer out in this organic material that surrounds you, this invisible but tactile substance of family. We are drawn around you, like the hardy outer leaves that protect the soft heart of an artichoke flower, or the tent – our home – shelter from rain and wind for the insular space within; where you were born, where the sun can light the fabric, and you can hear the hawk's cry.

When you wake in the morning you look with awe on the light painting the canvas, the shadows of the oak leaves. You hum with the experience you are drinking in. At these moments I lie beside you and silently promise to protect you from all harm. I know this is impossible, and not even desirable, given how often pain lends us meaning. Still, knowing this, I promise it wholeheartedly.

This morning, after holding you for a while, I carried you across the

room and turned on the radio. Your eyes went wide again, and you looked into the shadows as though you could see the music.

29th July

Last night I killed a snake. Going from the tent to the bath house in the dark, I heard it: the scale-slide over dry leaves. I went still, turned my light toward it, in time to see the tail disappearing into the loose stone of the garden-bed wall. Three rattles at its tip.

I went and put on my boots, got the axe from the woodpile. My feelings at war with themselves.

I have an affinity for snakes, have had many encounters with them. Once I found a rubber boa by the spring at the outdoor school – it twined comfortably around my fingers and stayed there for many minutes. And during an exercise where I stalked through the night woods, I found myself crawling on my belly over the forest floor; after hours of slow worming, my mouth tasting the soil, I began to see snakes in the darkness, coiling and uncoiling in the very stones.

Now this snake, here. Only a small rattlesnake – it must be newly hatched. It cut my heart thinking of taking this newborn life, so like yours.

But I went with the axe, compelled by the spooling-out of possibilities. Your mother, still recovering from birth, passes many times in the night the very spot where the snake hid. I thought of trying to move it further afield, but that meant danger – I couldn't risk either of us, for your sake. We must live, to be here for you.

So I took the axe to the garden bed. When the rattlesnake showed its head, I swung. I missed, striking sparks where the axe met stone. The snake S-ed back, afraid, then flicked forward; I swung again, catching it behind the head. The long body coiled up in a knot, the head driven into the soil of the garden, bleeding at the roots. A sacrifice.

13th August

You were born on the full moon; there was another a few days ago. You are one month old.

Like the moon, you are changing fast enough I can almost see it occur.

The moon comes up over the hill; I look away and look back, and it has risen a little more. When I come home dusty from the farm, where I work every day across the river, I find you with your mother, in the shade of the oaks, or the cool of the bathhouse. Something ineffable has changed in the way you move, the shape of your face, over these mere hours I pulled weeds and harvested carrots.

We are caring for the house and land and animals while the owners are away. Each morning I let out the chickens and the raucous guinea fowl, guide the goats and sheep from barn to pasture. Your mother helps me, carrying you along, swaddled against her. When you are upset, she takes you to the pasture and the goats gather around, making sounds that mimic your cries. Sometimes you all go silent and stare at each other, some communication between you, body to animal body.

17th August

I come out in the morning to find the fences down, the goats and sheep spread all over the pastures bleating at one another. I am seized – what has happened? Then I see the sheep, lying beside the brambles, her neck bent too far back. Her gut is open. I stumble closer, stunned – I see the vultures are already here, some on the ground; they take wing with great flaps when I approach. The rest sit hunched in the trees – twenty, thirty of them.

I gather the goats and sheep together in a pasture away from the carcass. I start putting the fences back in place. This is what you do in these moments.

Two of the doe goats are missing. The kids call continuously for their mother. I cannot tell you what an ache I feel hearing them.

The heat of summer lies heavy on the oak leaves, flattens the dry grass to dead stillness. The sounds are the vultures clattering through the trees, the papery rasp of their feathers. The bleating of the kids. The insectile tisk of the sprinklers.

The scent of putrefaction lingers in the low places. Soon the sheep's eye is gone, and much of her guts. Ribs exposed, lips drawn back from her herbivore teeth.

I pay to have her carcass hauled away. The goats I find later, dragged off among the trees and berry brambles. Already there is so little left,

reduced to bone, tendon, hide, hoof. Stomach contents spilled out in wet chewed green.

The vultures have had their share, and the lion. We are sure it was a mountain lion, probably with her cub, teaching it to hunt. What else in this landscape, which we have overlaid in our minds with a sense of safety, what else could come over the fence in the pre-dawn shadows to sow death and chaos in our pastoral?

Throughout all of this you are quiet and watchful, crying only when you need to be fed.

I don't want you to fear. I want you to feel safe with us. At once we are met with this image, the carcasses eroded before our eyes. This is all we are.

In the evening there are still chores to be done: the chickens and guinea fowl herded into their coop, the garden irrigation filter scrubbed; I go to the pastures to move the sprinklers to their new positions.

It is dusk – the liminal time when the lion hunts. I carry a skinning knife in a sheath at my belt, my hand constantly aware of its shape. I go through the high grass and the shadows under the oaks, my hair prickling from the skin. My animal body humming with awareness, to preserve itself. I must live for you – I must be here to protect you.

Later we try to herd the goats and sheep back into their small barn, the only place they'll be remotely safe. They balk and go wall-eyed at our attempts to shepherd them, won't follow the paths they have trod all their lives. Their sense of the right order of things has been shredded.

Your mother and I spend hours trying to cajole and corral them. It is full dark by the time we have them all inside. All the while you are asleep, bundled against your mother's chest.

21st August

Some days after the coming of the lion, the moon passes over the sun. At the farm we pause in our work. Your mother brings you to the fields, hidden from the open heat under a thin blanket.

We stare awestruck through special glasses at a round shadow eclipsing the sun's boundary. Around us the light goes dim and weird, tinged with sulphur, as though the moon were made of smoke, as though fire were dimming the fire of the sun.

A strange carnival atmosphere pervades the group. A wondrous celestial event is taking place, a wild happening. Everyone is chattering and laughing, released from work to this irregular festival.

At once, the sun is being blotted out at midday. A fearful malaise has fallen over the birds, the oaks are lustreless and withdrawn. The kale and broccoli are waiting for something terrible to descend.

We have to return to work. I say farewell to you and your mother. When I go back to picking, the leaves of the tomato plants look dull and wilted, all the fruit looks overripe. The hot air is still and solid, the soil radiating. Everything shadowy and past its prime, a fever dream.

29th August

Kneeling in the field in the afternoon sun, cleaning the brittle skins from onions. Underneath, the color of heart-bound blood. The day is still, no wind, the trees dead silent in the heat. Just the sound of our hands shushing in the onion skins.

Then a cry goes up; we look to the south. In the sky there is a cloud boiling up. Dense and white, opaque as milk, bulging and growing as we watch. Soon it rips through the other clouds, expanding with a crazed speed.

There is farm work to be done, so our hands continue cleaning the onions while this wild scene unfolds.

Later the fire is on the news. Burning about 30 miles away. The newscaster stands in the charred rubble of a home where it has passed. First 600, then 2000, then 4000 acres. The helicopter footage shows the cloud, a pyrocumulus, created when all the moisture of a forest is suddenly flashed to steam, hurtling to the stratosphere, greater than any mountain peak.

1st September

Another fire, smaller this time but much closer, the plume of smoke just over the hill from the farm. The fire trucks charging up the hill, engines roaring. The fire crew contains it quickly, but the next day when I rise in the dark there is the scent of hot ashes on the wind. As the sun comes up, the air is hazed, the ridges obscured to smoked glass.

Driving through the river canyon, the ripples on the water are quicksilver, the light on the pines is tinged with flame. It is much the same as during the eclipse, the effluvium of the fire obscuring the sun. The air is sedentary and oppressive. I sense dread in the stillness of the trees. They must taste it in the air, the ashes of their relations, the thing that can end them.

And here am I, roaring up the hill in my machine, a fire raging under the hood. The fire engines burning to stop the burning.

Not long ago, fires came after summer lightning, or when native people set the meadows ablaze to produce more fodder for themselves and other animals. Now these mountains are inundated with civilised apes – and I am one of them – all of us setting fires that are not really in our control.

I work through the morning cloaked in smoke, the sun smouldering in the trees on the ridge. Harvest strawberry and melon and tomato. The fruits contain a subterranean coolness within. The sprinklers draw up water from below and rain it down. The pattering on the soil and leaves, the smell of this strange rain mixed with smoke.

20th September

I leave you and your mother still sleeping in the tent and drive down from the ridge, through pasture and woodland, toward the river, on my way to the farm. The radio chatters, dire warnings of climate change and concerns about market growth in the same breath. Texas flooded, Puerto Rico levelled, the worst mass shooting in history, the Dow is up, Trump is tweeting, coverage all day.

Today we dig potatoes, or rather the tractor does, its implement dredging them up and shaking them out of the soil. A simple miracle, all this food churned out of the earth in minutes, hundreds of pounds that we carry from the field. In exchange we have the deafening growl of the steel workhorse, the soot and invisible gases pouring from its exhaust pipe. Here, on a small organic farm, where we grow food for the community, mostly tending it by hand, sometimes crawling for miles on our knees as we pull weeds, even here we have this giant machine spouting its waste into the atmosphere, creating changes that may be the undoing of this ideal.

My mind runs parallel beside itself: loving the work, lifting sacks of potatoes from the field under a clean autumn sky, carrying food from the

earth to the people. And thinking we should all be digging our own potatoes. In the quiet of the field, the motors silent and inert.

11th October

The morning you turn three months old, we are woken by Julie in the predawn hour. *You need to get up,* she says, *there's a fire.*

We rush to the tent door, look out into the dark. On the ridge, a bright flame glow.

We lie back down beside you in the bed, where you still sleep. Try to collect our wits, think what to do. There is nothing to do, except gather our things.

As the morning light comes on we alternate holding you while cramming the cars. We don't have much, but still not all will fit. We have to choose the few things that are irreplaceable and carry you and them away.

There is smoke on the wind. We can see it billowing from the ridgeline. Orange gouts of flame.

My typewriter, our wedding certificate, a few precious books, your grandmother's rocking chair, the bed frame I built for your mother. All thrown haphazardly into the vehicles. In a few minutes we are evacuees. The tent, though it was where we spent our wedding night and where you were born, we cannot take. It's too large, would take too much to disassemble.

We have family to stay with, out of the path of the fire. But it is this simple: a fire threatens, and we are out on the road with what belongings we could grab. This is how tenuous our life really is.

In the night the winds were blowing, the oak limbs clashing, the dry leaves washing over the ground. The winds blew down trees into power lines, which started the fire. The winds which are part of the climate, which is warming and changing. Our need for power and light causes us to burn the fuel, which changes the climate, dries the forest to tinder, allows the bark beetle to kill the trees. We have suppressed fire here for a long time, like a memory held in the unconscious, waiting to rear up.

The climate blows down the dry trees, lights them on the electric spark, fans the flames. Burns the homes we tried to light and keep safe. They are their own demise. The burning begets the burning.

The firefighters are trying to control the blaze, but we are not even in control of ourselves. We can't seem to stop driving, stop turning on the lights. Even I and your mother, knowing what we know, can't find a way around it. We are trapped between the narrowing walls of history, the mass movement of humanity, its implacable momentum.

My daughter, I would shelter you from these things, somehow give you tools to cope. But I fear I don't have these tools to give.

13th October

The fire has been contained, and our tent is safe. The smoke, though, still clouds everything to vague shapes. It lingers on the tongue, rasps the throat. You stay with your mother in apartments in town to protect your new lungs. The tent is safe, but the fire burned very close, and the forest still smoulders.

I want to tell you: there are these consuming forces in the world. Wild, untameable. The fire that eats forests and houses indiscriminately. The mountain lion who leaps our flimsy fences, where we have marked out our square plots and called them safe. Human craving, strange apes that make the deer scarce and bring noise and blades and flame.

Like ants biting chunks of flesh from a dying animal, we spread over the world. But who can blame any one of us. All of us were gifted these hungers, these tools, these dexterous hands, from the very root of our life. This I learn from you.

16th October

Today we returned to the tent.

I have been looking up from the farm fields, trying to gauge the smoke, when it will be safe for you. For days, the sky has been gray-sulphur, burnt, rotten. The rows of vegetables disappearing in the haze across the field, their leaves dull and wilting.

But now the air has cleared enough. We come back with tentative steps. The land shows little evidence of what has passed so close. The pastures are green with the water dredged up from below ground. The oaks dusty and inert in the persistent heat.

It is inside the tent that we see it: books, papers, clothing tossed aside as we tried to grasp the few most important items and run. The mattress overturned where we threw it to get to the bed frame.

The sudden threat and departure felt like being cut at the root. We have been moving in vehicles, living in apartments, only for a few days but still not touching the earth of our home. You have been perturbed by it, not sleeping well, uncomfortable in your skin. A wild thing, you wanted the open air, your trees against the sky. You have felt this sudden separation from the place where you were born, the threads that tie you to it drawn taught.

We lay the mattress down amidst the mess, pressed to the soil.

20th October

Last night, the first rain came. The wind roaring and whipping the tent, the oak limbs thrashing, the smell of the water soaking the desiccated canvas.

The storm washed the air clean, chilled it to the damp of winter. It was suddenly cold in the tent, after these months of baking sun. I lit a fire in the stove. It put out a steady dark heat like the body of an animal beneath its fur. We swaddled you in your blankets and lay together in the dark.

JANE LOVELL

Return to Erw Wen

There is insolence in the deadbeat grass
the dry rosettes of thistle,
bramble runners thick as rhubarb
and next door's cat with its fuck-off eyes
marking the door, marking time
as the minutes settle into hours
set into days like some creeping black lava
across your path
the way you thought you'd go but can't.

Down by the gate a knotted elder
mined by woodlice spills a meal of phloem
across the wall, shawling cobwebs
in its hollows.
The blackbird's long gone.
We peel and cut twigs into whistles,
walk through the hot grass,
the terrible silence.

Each way you turn there are ghosts
of gone-days, days you sidestepped,
frames of old film, the flicker and bobble
of celluloid dreams.
The heat is unbearable.
We sit on the hill, blow those white flutes,
call the clouds, call the night,
all the old bones turning in the soil.

BRIAN MCKENZIE

Radiation burn

Etching

I'm fascinated by, but also deeply concerned about, the horrific leakages and lack of control associated with Fukushima Daiichi nuclear plant in Japan. This work is part of a large series highlighting problems there and depicts the effects of radioactive exposure on a workman. This print was made using disrupted traditional etching processes that create random, intricate shapes and patterns combined with my love for controlled delicate drawing.

BRIAN MCKENZIE

Woodland encounter

Monotype

A large part of the character of works in my Woodland Encounters series relates to how they are made. Monotypes like this result from a battle between my desire to control and depict versus difficulties inherent in trying to manipulate raw, loose and sticky printing ink. Using sticks, rags and brushes the image grows and looms into existence almost as if I'm uncovering a hidden presence within a dark-set scene that was waiting to reveal itself.

EMILY STODDARD

Report from a Future Nostalgia

When the seed catalogue stashed in ice
goes rotten, there is too much language –

a tower of words for what won't be seen again.
The drowning world, full hands.

Alaska melts. Polar bears have no word
for mud but warn each other of its texture.

Memory betrays us. It leaves evidence
that has no sense of time or place,

replanting apples
in the ground our fathers burned.

The children get used to the radiation,
but the restlessness has no cure.

They dream of crystal glaciers
but do not know to call them glaciers.

They describe nightmares of glass mobs
and cement that is clear.

They dream of a bear, *but it was white*,
they say, watching us for shock –

not brown, they say. *What could have made*
the fur turn white?

T. M. DELANEY

Tadpoles

It was never very hot on the island. Every day we heard stories coming from the south: broken records, sleepless nights, heath fires. Things melting that should not melt. We'd heard it all before of course. It did not touch us. It was true that the sun shone every day.

But it was never very hot.

*

We built the pond at the end of March one year, on days when the temperature reached 21°C. Three days labouring in a winter heat that seemed in excess of what was normal in an island summer. It was like finding a wallet stuffed with fivers and keeping it. You knew it was wrong, but you enjoyed it all the same.

The pond was about fifteen feet wide, but less than three feet deep at its centre. It was shallow at the edges, sloped gently down, and then dropped a couple of feet near the middle.

We built a pebble beach at one end so that any animal that wanted to use the pond could get in and out easily.

We were hoping for frogs.

*

It was astonishing how quickly the pond filled up with life. Friends brought us a bucket of tadpoles from their own bountiful pond, but life needed little in the way of assistance; various bugs and molluscs seemed to spontaneously materialise in the water before summer was out.

We would creep out quietly and stand and stare, happily baffled by the coming of the endless carnival of pond life.

*

It was not unexpected, of course, but the morning we found a pandemonium of froglets – here, there and everywhere in the grass by the pond – was a time of jubilation.

'Be careful,' we whispered to one another. *Watch where you step!*

By the morning of the next day they were mostly gone, a few stragglers popping up now and then to make us still wary of where we put our feet.

'Next year!' we thought. 'Next year there will be millions!'

*

A little fist-sized lump of frogspawn was all we ever saw the following spring. Later, if we stood and watched for a while, we might see the odd tadpole steering waggily past a frond of weed. We would keep it in view for as long as we could before it disappeared at the far side of the pond.

To be frank, we were a little disappointed.

When the same thing happened the following year we knew that something must be done. We needed to give nature a little shove.

We needed to manage the situation.

*

It stopped raining some time in early May.

But weeks before that we'd acted; brought buckets full of spotted gunk from someone's wild pond that nestled in a dip at the bottom of their damp field. We waded in up to our knees and hoicked the stuff in great scoops-full out of the murky water and into pails; then we drove home carefully, so that none of our precious cargo would slop uselessly out on to the car floor.

Now there were masses of the stuff in our pond.

*

It still wasn't raining, and it took a little while, but a few weeks later there were cute little tadpoles undulating busily in all quarters of our crowded pond.

We stood by the water fascinated, noting the minutiae of tadpole behaviour, how groups seemed to come into the shallow part of the pond where the water was warmest and rest there, hardly moving at all under the warm sun, almost as if they were sunbathing. Not far from these sunbathers a group clustered round the shell of a dead snail, heads fixed on

the flesh of the animal, tails thrashing, like a riot of sharks in a feeding frenzy.

We did not say so but both of us knew. We fought against it, but we could not help but feel a certain pride. We had done this. We had given nature a helping hand and together we'd produced this fecundity. We did not say so, we did not really want to, but we felt a certain pride.

We looked at one another and smiled.

'It's so nice to have a dry spell,' we said, looking up at the clear blue sky.

*

There are grass fires every year on the island. It does not need to be hot. A piece of glass distils the light of a mediocre sun to a fine point of heat and some tiny scrap of dried-out vegetation begins to smoulder. Small flames advance slowly across the grass like a line of cattle feeding; they mostly fade and quickly die. Now and then they find some stamina and persist until the firemen come and beat them to a standstill.

There are summers when a kind of alopecia afflicts the green and brown and yellow pattern of island vegetation: intermittent bald patches, black and irregular, scar the landscape. But not this summer. The sun shone steadily, but there were no fires. Or at least, looking out from our garden at the fields and hills all around, we saw no fires. The sun shone, but on the island it seemed that nothing burned.

At night we watched the wildfire on Saddleworth Moor on the television and wondered.

Who had done this thing?

*

By the beginning of June the water had started to retreat from the edge of the pond. It exposed the ugly black butyl liner, which soon became a slowly expanding borderland between the green of the garden and the water.

The tadpoles still sunbathed in the shallows close to the water's edge. There seemed to be even more of them now. We looked forward to the day the grass would come alive with leaping froglets: frog graduation day.

The water retreated slowly day-by-day and the tadpoles fattened.

*

The sun shone and there was no rain.

We began to look for signs of transformation. Sometimes we thought we saw nubs of little frog legs at the base of a body, bulging just a little on either side of a tail. We would go back the next day hoping for elongation, for definite signs of development. But days went by and the tadpoles were still tadpoles, happily wending their way around the diminishing pond. The water was still retreating but there was a lot of it. The tadpoles had all the water they needed. They were happy tadpoles.

We had done this.

They were happy tadpoles.

*

The sun shone.

We didn't like to ask out loud but we were beginning to wonder. The black margin at the pond's edge was now three feet wide. The tadpoles swam and swam and were not harmed, but the nubs did not elongate, the bodies did not change shape, no legs came.

We didn't like to ask out loud but we both began to wonder. *How much longer?*

*

It was not just, we knew, but we were beginning to get annoyed with our tadpoles. (*Our* tadpoles – they were definitely *our* tadpoles now). It seemed that they were in no hurry to grow up and leave their natal home. Sometimes – once or twice perhaps – we stood and chided them. 'You need to hurry,' we said. *You need to hurry the fuck up!*

When the first pairs of proper legs appeared it came as something of a relief, and when teardrop bodies began to transform our confidence began to grow. ('Look, it's changing isn't it?' we asked each other tentatively.)

The water was receding every day. It was receding very quickly. The rapidity of its retreat was alarming. By the time the pond had shrunk to half its original size the tadpoles were no longer sunbathing.

We didn't like to say, but we both knew what the other was thinking.

We were wondering if there were fewer of them now.

*

It was happening at night, we told ourselves. The advanced tadpoles, the vanguard, were completing their transition in the dark, hopping across the black expanse of bare butyl, across the grass and into the overgrowth. They were sheltering there now, out of the glare of the sun.

They had matured. They were sensible little froglets.

There were fewer of them, we were certain, but there was no need to worry.

Everything was fine.

*

The sun shone every day. 'What a great summer,' we told ourselves. The grass was dying, leaving a web of bleached-out scurf all over the hard ground. The pond retreated into the centre where it dropped down and the water was at its deepest. It was thick with weed there, and hard to see the tadpoles, but they were in there, we knew. We thought we knew. They were in among the weed, growing legs, losing tails, changing into peppy little froglets, fizzing with adventure. They would be out of the water and all over the grass any day now, popping up and down like mustard seeds toasting in a frying pan.

And since the grass was dying, we told ourselves, they would be easier to see.

*

In the fields next to the house the barley had begun to ripen. 'A month early,' we said, pleased with our knowledge of the usual.

In the pond we scarcely saw a tadpole now, although if we stood for a while we might catch sight of one or even two together. Some of them had legs. They swam on the spot at the edge of the weeds facing outwards to the land beyond the butyl liner. No more than an inch from the edge, moving all the time, making no progress, swimming on the spot.

We began to worry, although we did not utter the thought out loud, that our tadpoles, who we'd gone out of our way to invite into our garden, who, we'd hoped, would share our lives and live and reproduce and *stay* with us for evermore, might not persist.

We wondered if our hospitality had been in vain.

We wondered if it was something that we'd done.

Mountaineers

Amory Abbott is a visual artist living in Vancouver, British Columbia where he teaches Illustration at Emily Carr University of Art. His art practice addresses issues of climate change and human existence, and he is represented by Russo Lee Gallery in Portland, Oregon, and featured in *3x3 Magazine*. amoryabbott.com

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Paul Feather lives on and in the red clay of the Appalachian foothills with his wife Terra and their daughter Zinnia Li. Their writing comes from the space between them all, and seeks to fill the space of silence in our culture – that which isn't being said. paulandterra.com

Rebecca Freeth researches, writes about and facilitates collaborative work. She is particularly interested in how to work together meaningfully in situations of high diversity, considerable uncertainty and complex power relations. Which pretty much sums up all situations where collaboration is most needed.

Emily A.F. García lives on a homestead in Cascadia and runs a bookish business. She aspires to create books like those that delighted her ten-year-old self – love letters to the many worlds we inhabit. Her poems have appeared in *Windfall*, *Windowcat*, and the artist book *To the Water's Edge*. cathemeralpress.com

Brian George is the author of two books of essays and five books of poetry. He is a graduate of the Massachusetts College of Art, an exhibited artist and former teacher. He often tells people first discovering his work that his goal is not so much to be read as to be reread, and then lived with. masksoforigin.blogspot.com

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Dougald Hine is co-author of the Dark Mountain manifesto and has been at the core of this project for a decade. On 17th July 2019, the tenth anniversary of the manifesto's publication, he will be handing on the last of his responsibilities. Together with Anna Björkman, he is responsible for creating a school called HOME.

Sara Hudston is a writer living in rural Dorset whose work appeared in *Dark Mountain Issues 13* and *14*. She contributes to the *Guardian's* Country Diary column and reviews nature writing for *The Times Literary Supplement*. Sara leads journeys on foot into the hidden heart of the west country. sarahudston.co.uk

Nick Hunt is the author of two travel books, *Where the Wild Winds Are* and *Walking the Woods and the Water*. His 'gonzo ornithology' book about London's feral parakeets

is coming out this year. He also writes fiction and works as an editor for the Dark Mountain Project. nickhuntscrutiny.com

Neale Inglenook (formerly Jones) is looking out the window at the sun breaking the clouds on the California coast, from the desk where he sits to write each day. He currently lives in his childhood home with his parents, wife and children. More of his writing can be found at digital-material.net.

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Jane Lovell has been widely published in journals and anthologies. She won the Flambard Prize and has been shortlisted for the Basil Bunting Prize, the Robert Graves Prize and the Periplum Book Award. Her most recent publication is *Metastatic* from Against the Grain Poetry Press. janelovell128.wixsite.com/janelovellpoetry

Kevin MacCabe is an Irish engineer who has written a collection of allegorical tales discussing the changing climate and the human behaviours surrounding it. He is now working on a novel in the same vein. Topical thoughts and some fiction can be found on his blog site. 6040split.com

Brian McKenzie is an artist working mostly with printmaking and clay. He is interested in the close connection between humanity and animality, and in entropy and the beauty of destruction. He teaches in adult education and likes to make work that is at once funny, beautiful and scary. Instagram @briandavidmckenzie

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Richard Powers is the author of 12 novels, including *The Overstory* (shortlisted for the Man Booker Prize), *Orfeo* (longlisted for the Man Booker Prize), *The Echo Maker* and *The Time of Our Singing*. He is the recipient of a MacArthur grant and the National Book Award.

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Ingrid Reiser is currently living in a mountain cabin at the tree line in Härjedalen, Sweden, together with her partner, Isak, and wise dog, Embla. Ingrid's professional background is in economics, education, sustainability and visual communication, but she's an incorrigible generalist and therefore expects to be swept down unfamiliar paths in the future. ingridmrieser.com

Jess Richards is the author of three literary fiction novels, *Snake Ropes* (2012), *Cooking with Bones* (2014) and *City of Circles* (2017), which are published in the UK and Commonwealth by Sceptre, Hodder & Stoughton. She has also published several short stories and poems within UK and US anthologies. jessrichards.com

Christy Rodgers writes tales and essays about biocide, remnant mythologies and struggles for justice, some of them inspired by working and journeying in Latin America for three decades. Six essays and one tale have been published on the *Dark Mountain* blog. She lives in San Francisco and on Whidbey Island, Washington.

Anna Rose-Prynn grew up in the suburbs of London. She now lives, writes, walks and swims in rural Dorset, exploring human interaction with the wild and with place. Her book *Outshift*, *a life lived in abandoned places* will be completed in 2019.

Arnold Schroder lives a steadily nomadic life in the Western United States and has written extensively for underground political publications like the *Earth First! Journal* and *It's*

Going Down. He is hard at work describing the evolutionary origins of the left-right divide.

Keene Short is a writer and teacher transplanted from Northern Arizona to Northern Idaho. His work has appeared in *Longleaf Review*, *Split Lip Magazine*, *Waxwing* and elsewhere. Find out more at keeneshort.com.

Kevin Sloan is a Denver-based painter working in acrylic on canvas. His paintings enquire into the relationship between the marvel of the natural world and the mundane reality of the modern era. When not painting, Kevin can be found on the banks of the South Platte River flowing near his home and studio.

K. C. Snow & J. P. Hurst co-host 'Maximum Carbon Sinkhole', a climate change 'comedy' podcast, which was heavily inspired by the Dark Mountain Project and Paul Kingsnorth's charge to tell new stories. Processing eco-grief through laughter and satire, a gallows sense of humour is required to *dropout* at maximumcarbonsinkhole.com.

Emily Stoddard belongs to seven acres of ironweed, bur oaks, sugar maples, herons and hummingbirds in Michigan, USA. She is a leader of the Amherst Writers & Artists Method and founder of Voice & Vessel, a writing studio. Her work appears in *Radar, Tinderbox Poetry Journal, Pilgrimage* and elsewhere. emilystoddard.com

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Steve Wheeler is a collaborative unit of eukaryotic cells. Over time, Steve has learnt to do many things, including walking upright, writing, editing, teaching, helping people be well, opening doors, and cooking a mean hamburger. Steve is mostly indigenous to Western Europe.

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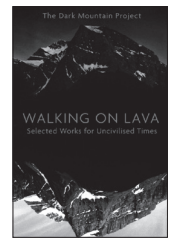

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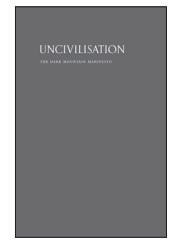

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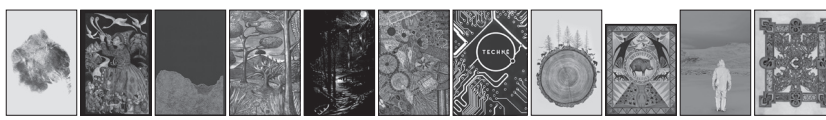

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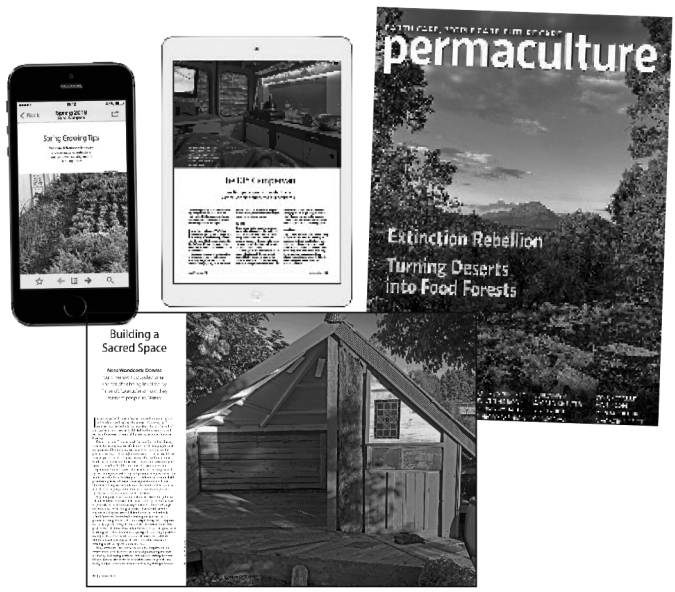

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