

Kāpia: fossils and remedies: more-than-human survivors

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Not long after I was absorbed in the latent energies in the Tsunami boulders and Len Lye's kinetic systems, I returned to more-than-human geologies in my art practice. The catalyst for my recent video work *Kāpia: fossils and remedies* was a story of kāpia, a relic of an ancient forest commonly called Kauri gum by the settler-colonists, uncovered in a sand dune in the Hokianga harbour in the 'far north' of Aotearoa New Zealand. In long-ago climates, the ancestors of Kauri trees, *Agathis australis*, grew throughout the country and their traces can be found in the leaf fossil records and in amber, their resin, and the solidified pre-fossil resin, kāpia. Today, only a few stands of original Kauri forest remain in Te Tai Tokerau, Northland, and their future survival is uncertain. The gigantism of the Kauri tree evidences their deep prehistory when they dwelled with huge creatures on the continent of Gondwana in proto-Australia, the Pacific islands, India and Antarctica.¹ Kauri are believed, controversially, to have survived the complete submergence of Aotearoa in the Miocene era, but now they must withstand a new pathogen. *Phytophthora agathidicida*, commonly called Kauri die-back, surfaced in the Anthropocene, just like COVID-19 (Bradshaw et al. 3; Lee et al., "Late" 565).

The pathogen, the ngārara, the word in Te Reo Māori for bug or demon, adopted here from plant pathologist Nick Waipara can sense Kauri roots and swim through the soil towards them, and it can also survive for up to six years on surfaces. By latching on to human shoes or equipment the ngārara has hitchhiked into the great forests of Te Tai Tokerau and destroyed many thousands of trees. In my video *Kāpia: fossils and remedies* (2020) I explore the kāpia as a bleeding flow and sealant resin produced by the Kauri tree as an analogy to the fluid and excessive survival response to our damaged planet and the fragility of all life in the era of the Anthropocene. We humans are asked by many iwi, tribes, to socially distance from these living ancestor-trees for their own survival, under conditions of rahui, or temporary prohibition.² Yet at the same time iwi carefully tend to the trees, while following guidelines not to spread the disease. The living botanical function as well as their ancient lineage drew me to kāpia: the resin heals wounds and shields a tree from fungi, insects and microorganisms which might do it harm. The kāpia resin seals up the small moist wounds which become portals for fungi and insects to enter the tree. How might we protect bodies of trees, people and other more-than-human companions?

Bleeds of resin at the base of the tree can be an indicator of a dying Kauri but the resin has also been of use in customary practices. Ecotoxicologist, Dr Jamie Ataria has argued that researchers in Aotearoa, “[...] haven’t given enough credence to the value of rongoā Māori (traditional Māori healing) when dealing with diseases like Kauri dieback” (par. 1). Kāpia flows have been misread as simple signs of disease, they can also indicate healing underway. While humans now seek to heal the Kauri trees, the tree has long worked to heal us. In Te Ao Māori, pre-European custom, long strands of kāpia were plucked straight from the tree and boiled until soft, puha juice was added, and the gum was then chewed communally. Pieces of kāpia were also wrapped in flax and burned as a light source for night fishing to attract eels; they were also burnt as an insecticide to keep bugs away from the kumara plots (Haywood 3). The deep black cinders from the kāpia fuel are refined into an ink with animal fats and oils for the Māori art of tā moko, tattooing. One of the European uses of kāpia was a fire accelerant but it was more commonly used for varnishes and linoleum in a commercial industry that rivalled gold at the turn of last century (Reed 75).



Fig. 1 Janine Randerson, *Coal with a seam of Amber*, 2020. Still from the digital video *Kāpia: fossils and remedies*. Courtesy Matakōhe Kauri Museum. Photo © Janine Randerson

Over thousands of years in the life of some colossal Kauri trees, their resin runs down the tree and collects in their forks, these large masses were called ‘crutch gum’. The resin bleeds would draw insects and small lizards to the sweet sticky substance where they became enmeshed; then more flows of resin would encase the insects in successive layers overtime (Lee and Kaulfuss). An ancient example of Aotearoa New Zealand amber that I filmed at Matakōhe Kauri museum in Northland was found ninety feet under the ground in the Waikato area in a coal seam (see

Figure 1). It dates from the Oligocene, around 35,000 years ago. Coal is formed when dead plant matter decays into peat, and is converted by the heat and pressure of deep burial over millions of years, during which time remnants of kauri resin are also entrapped and the pressure produces amber. This archaic object acts as a memento mori for me, a reminder of the inevitable effect of releasing high levels of carbon dioxide into the atmosphere through the burning of coal. As Jeffrey Jerome Cohen declares: “The world is not for us [...] stone records advents and extinctions on vast scales so that humans lose predominance. The play has been long, and we are latecomers” (64).

Please see the video Janine Randerson, *Kāpia: fossils and remedies* (2020), <https://www.circuit.org.nz/work/kapia-fossils-and-remedies>. Courtesy of *Circuit Artist Moving Image Aotearoa New Zealand*.



Fig. 2 Janine Randerson, *Gecko in ‘manufactured’ kāpia, kauri gum inclusion*, 2020. Still from the digital video *Kāpia: fossils and remedies*. Courtesy Matakoho Kauri Museum. Photo © Janine Randerson

In the reptiles and insects suspended in the pre-fossil copal or kāpia, in the case of my video (Figure 2), mostly copal or pre-fossil amber, we glimpse the biological diversity gathered around the kauri hosts, protectors and forest beings. In addition to the naturally occurring inclusions of insects in amber, creatures were sometimes deliberately entombed in liquid resin by European settler gum diggers in ‘manufactured’ pieces. The carefully-arranged insects and ferns were sold for Wunderkammer collections.³ Only microscopic insects have been found in ‘true amber’ or fossilised resin, so most of the kāpia artefacts, I recorded at the Matakoho Kauri Museum would

have been manufactured by the gum diggers for collectors (see Figure 3). The diggers searched for the kāpia with spades and spears at depths up to 16 metres, while the amber examples come much deeper in the earth from coal mines. Geologist Daphne Lee at the University of Otago has shared her research with me about the ancient lives of tiny insects and invertebrates cocooned in amber. Since 2006, Daphne’s research with geologist Uwe Kaulfuss has located *Agathis* amber from coal mines across Aotearoa. They have found Miocene beetles, ants, flies, mites, pseudoscorpions, cicadas, sandflies, bark lice, roundworms, pollen spores, fungi, and the wing scales of moths or butterflies, enshrined along with air bubbles. Many of these delicate creatures no longer exist or have never before been identified (Lee et al., “Amber” 135).

Our forest histories and fossil remnants are often described in poetic metaphors of haunting, footprints of the dead, or poignant remains. This language is used by the editors’ titles in the volume *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene* (2017) for instance (Bubandt); or in George Gibbs’ *Ghosts of Gondwana: A History of Life in New Zealand* (2008). However, kāpia fossils are no longer flimsy or insubstantial ghosts to me. Rather I think of them as lively and robust intermediaries, living navigators between past, present and future. In Te Reo a fossil is sometimes called *mātātoka* where *toka*—means to be firm; and *mātā*—face, edge. Fossils are the tip or face of a deeper existence that binds us to the past, so we can understand more about the reality of extinction, in the hope that it might propel us into action to care for our Taonga species, our companion species in the present and future.⁴

When we confront the vast timescales far longer than our own lifetimes through the witness of the geological record, our current actions to sustain forest ecologies become implicated. In *The Great Derangement* Amitav Ghosh suggests that the challenge climate change poses for the arts and humanities is a crisis of culture and of imagination, limited by our conventions of writerly and artistic tools of representation. Formerly improbable events such as global pandemics and frequent cyclones that were the stuff of popular science fiction, or surrealism, are now astoundingly real, Ghosh reflects; “they are actually happening on this earth, at this time” (27). My own hope and curiosity in the now is made sense of by reaching back into our collective human and more-than-human histories in the fossil archive.

For me, the handling and thinking about these biota, trees and insects preserved after a sudden death in a flow of resin so long ago, accentuates our present moment of environmental collapse. Species extinctions happened over and over during cooler glacial periods between the warmer interglacial periods in the so-called Miocene drowning event, and scientists have used powerful language to describe our human impact as the next period of “biological annihilation” (Carrington). Aotearoa New Zealand mirrors the global speed of species disappearance. One prediction suggests that forty percent of all Indigenous insects, forty percent of all Indigenous

birds and eighty-five of all lizards will become extinct this century without intervention; a much faster rate than during any other epoch (James 184). Now the Kauri genus, which has survived ice and flood, and the rising and falling of whenua, earth, and many of the living creatures which the Kauri sustains, are facing extinction.

The age and aura of the amber taonga and the lives inside them plunge me again into a temporal vertigo about all that has been destroyed in the short period of settler occupancy of Aotearoa New Zealand. This is not a mourning or a melancholic necropolitics like the thought experiments of the speculative realist philosophers who ask us to contemplate human displacement—a future without us, and a past where we never existed (Brassier 224). I find instead, that to contemplate the immense lifespan of the Kauri fossils fosters an active ethic of care; the principle of Kaitiakitanga, environmental custodianship, that Indigenous mana whenua have always understood. This complex concept is articulated succinctly by Kaumātua, elder, Dr Pita Sharples. “Kaitiakitanga seeks balance in sustaining our natural resources as the basis for our well-being—rather than limitless commodities to use at our will” (Selby et al., “Maori” vii). The more-than-human world breathes; stones are Kaitiaki, Maunga, mountains, the weather, Kauri are ancestors with will and agency in Māori cosmology. This embeddedness is common to many Indigenous cultures and seems more pressing to me to recognise here than other post-anthropocentric currents in the humanities. Ghosh also recalls traditional Indian



Fig. 3 Janine Randerson, *Spider in ‘manufactured’ kāpia, kauri gum inclusion*, 2020. Still from the digital video *Kāpia: fossils and remedies*. Courtesy Matakohe Kauri Museum. Photo © Janine Randerson

narrative epics where there is “a completely matter of fact acceptance of the agency of non-human beings of many kinds” (64). In bringing such Indigenous understandings to bear on current crises, we might move on from the discourse of human exceptionalism, where the wants and needs of our species are placed above all else.

Our bodies and the bodies of the Kauri trees must equally combat an unprecedented range of stressors including the agrochemicals and pesticides used in intensive terrestrial farming, resource extraction, our burning of fossils as fuel, a surging human population and our runaway patterns of consumption (Gaw et al. 917). What seems urgent in writing and making is to delve into how climate change, pandemics, afflicted trees and the geological remnants of their ancestors are inextricably coiled together. We can understand from the Kauri survivors about care and endurance, and about tending to the collective roots beyond the fragile limits of our own lifetimes.

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NOTES

¹ Conifers similar to Aotearoa's kauri can be found in New Caledonia, Australia, Fiji, Melanesia and Vanuatu but New Zealand Kauri's DNA reveals that it is the oldest living species in this genus (Karen Stöckler et al.; Biffin et al.).

² Mātauranga and tikanga Māori (knowledge and customary practices) are important contributions in the fight against Kauri dieback as many Māori communities are affected by the disease in their rohe (area) and their local indigenous knowledge is already providing successful solutions to protect kauri from the disease. The Kauri Rescue programme, instigated by Nick Waipara, is called "Community Control of Kauri Dieback: Tiaki Mō Kauri" (Plant and Food). As an example of this activity, Te Roroa iwi forest ambassadors in the Waipoua forest maintain regulated contact with the Kauri singing and using healing ointments. Visitors are required to use washing stations for footwear and equipment.

³ Cabinets of with collections of kāpia, (Kauri Gum) can be viewed at Matakohe Kauri museum in Northland, Aotearoa. There are also examples there of manufactured insect fossils in gum from the late nineteenth and early twentieth century, and also carvings of ships, lighthouses and other forms by the gum diggers.

⁴ Taonga species is a term used by Nick Waipara and other Māori scientists and environmentalists to signal the sacredness of iconic trees and other plants.