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MAKING THE INVISIBLE VISIBLE: SENSING THE UNSEEN WORLD

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Foreword

By Ned Joyner

Just outside of Abiquiú, New Mexico, an ancient drama unfolds in a small canyon called La Plaza Blanca– " The White Place." From the ridgeline above, it's unassuming. But from below, the landscape opens up into a wild basilica of white, yellow and gray megaliths–an intricate labyrinth of stone spires, passageways, chambers and hulking giants that seem to ripple and cascade with motion.

These formations hold the memory of deep time. At their base are the fossilized remnants of marine sediment, laid down when this region was submerged under a primordial ocean roughly 200 million years ago. Above, layers of volcanic debris, deposited some 25 million years ago, contain echoes of Earth's molten core. Eons of wind, rain and seasonal rivers have slowly sculpted the porous stone into the fluid, otherworldly sentinels that Georgia O'Keeffe would later capture in paint. Her *Plaza Blanca* paintings invite the viewer to incline their ear towards an ancient conversation among sea, magma, wind, rain and river–a conversation through which fluidity has been gathered and encased in stone.

The world is alive with presences that often go unseen but can be sensed and felt. Beneath what can be measured or quantified lies a sacred web of life that animates the world with sentience, memory and relationship.

Across cultures, humans have practices for "seeing with the eyes of the heart"–ways of knowing that resist simplistic analysis. Traditional cultures maintain protocols for engaging with–and staying in right relation with–the animate presences that populate both the seen and unseen worlds. What happens when this network of relationships is dishonored or ignored? How do we begin to reestablish right relations when the cultural memory for sustaining connection has been fragmented, forgotten or forcibly suppressed?

In this edition of *Akin*, we gather stories of the human relationship with the natural world, told through lenses ranging from the somatic to the scientific. In an age of climate catastrophe, colonial extractivism and imperialistic violence, this relationship is often shaped by displacement, loss, grief and estrangement. At the same time, people in all corners of the world are answering the call to reconnect with lands, languages and lifeways by envisioning new ways of being and recovering dormant ways of knowing.

The living world is speaking. This zine asks how, together, we might learn, relearn and remember how to listen.



Opening Up

By Kelsi Watters

May our world experience an opening up, and pouring out
May the Earth and the Heavens join together
Opening the wide, boundless expanses of their doors, of the skies, of the land and sea
May all who have been unjustly closed off, shut out, restrained, be liberated
May the doors of the heavens open to pour out cleansing, healing rain upon our Earth
May our hearts, too, be opened up wider than ever before
Pouring out love, pouring out compassion, without borders
May our spirits be open to the movements around us
And may we come together in simultaneous mourning; deep grief for what our world has become; and also celebration for what our world may become
With the opening up, and pouring out, of the heavens, the earth, and our hearts.





The Unseen Connections of the Living World

By Rosie Semlyen

Stand in a forest, and it might seem, at first, like a collection of separate things. A tree. A bird. A patch of lichen on a stone. But beneath your feet, something else is happening. Trees are in quiet conversation, linked through symbiotic fungal networks. Fungi—fine as cobwebs, vast as the forest itself—thread among their roots, moving carbon and nitrogen and chemical signals from one tree to the next. A tree under attack by insects will send a warning through the network; its neighbors will begin producing defensive chemicals before the threat arrives.

This is an unseen world: invisible to us without technical instruments, or patience, or the willingness to listen to what is happening beneath the surface of things. Nature is threaded with connections that operate below the threshold of ordinary perception—chemical, biological, ecological—written into the bodies of animals and the drift of microscopic organisms across the surface of the sea. These systems quietly shape the living world, yet Western science is only just beginning to perceive them.

Exchange

The dominant scientific view has, following Darwin, understood forests as systems of competition. Individual trees competing for light, water, nutrients. Survival of the fittest. But the forest, it turns out, is less a collection of competing individuals than a community in which the fate of each member is bound up in the fate of the whole.

Beneath the forest floor, microscopic fungal threads—mycorrhizae—weave among roots, linking trees into a living network, sometimes called the “wood wide web.” The ecologist Suzanne Simard showed in a landmark 1997 study that carbon moves among tree seedlings through ecto-mycorrhizal connections. Since then, research has found that these networks transfer nutrients and signal compounds between connected plants.

Older trees recognize kin and send their young more resources, sustaining saplings in the shaded understory. A stressed or dying tree may receive support, or release its nutrients back into the network as it dies. Signals move through the system ahead of threats, allowing others to respond before harm arrives. Everything is shared.

Forests have been doing this for millennia, yet much of the world does not pay attention. This means we have been making decisions about forests without understanding what they actually are: a system of relationships, accumulated over centuries, that cannot simply be replanted. And the forest is not alone in this. The more closely we look at the living world, the more we find that what appears simple on the surface conceals a depth of relationship and exchange that Western Science is only just beginning to map.

Regulation

Nowhere is this lack of understanding more humbling than in the ocean. Covering approximately 71% of the Earth's surface, it is the planet's largest and least understood system, and much of what it does to keep the world habitable happens far beyond what the eye can see.

Phytoplankton—microscopic photosynthetic organisms, including eukaryotic algae and cyanobacteria—are responsible for more than half of Earth's oxygen, produced through photosynthesis happening at the water's surface. They absorb significant quantities of carbon dioxide in the process, making them a critical regulator of the atmosphere. Because they drift in the euphotic zone of the upper ocean, their productivity is highly sensitive to light, temperature and the availability of nutrients such as nitrogen, phosphorus and iron. These conditions are shifting as the climate changes.

They also form the base of marine food webs and play a central role in the ocean carbon cycle. When phytoplankton are consumed, decay or aggregate into sinking particles, the biological carbon pump transports some of the carbon they fix at the surface into deeper waters, where it can be stored for months to centuries or longer.

Much of this activity cannot be seen directly. Scientists track phytoplankton from space using ocean color: subtle variations in the color of surface waters reveal changes in chlorophyll and help estimate the timing, extent and composition of blooms. Satellite observations, combined with shipbased sampling and biogeochemical models, have only recently made it possible to study these microscopic communities at planetary scale. Like the mycorrhizal networks beneath the forest floor, these systems were always there—doing

their work, sustaining life–long before Western science had the tools, or the humility, to look.

Orientation

The oceans and forests are not the only places where the unseen is at work. Some connections are carried within individual organisms, shaping how they move through the world.

For instance, the life cycle of eels remained mysterious for centuries. Aristotle, having dissected them and found no visible reproductive organs, concluded they must emerge spontaneously from river mud. No one ever witnessed them spawn, so generation after generation of scientists were stumped, until a group of researchers finally succeeded in tracking their migration across the Atlantic using satellite tags, with the findings published in 2022.

We now know that European and American eels spawn in the Sargasso Sea, a unique region in the North Atlantic Ocean famous for its floating mats of golden Sargassum seaweed, before their larvae drift toward continental waters. They enter rivers and mature in freshwater systems for decades. Then, like butterflies, they undergo a final migratory transformation: their bodies silver over, their digestive tracts shrink, their eyes enlarge, and they begin the journey back, thousands of miles across salty, open ocean to reproduce in the same stretch of sea where their lives began. How they navigate this migration is still not fully understood. Experimental evidence suggests that eels use magnetoreception–an internal magnetic compass–to detect and respond to the Earth's magnetic field. When they are born and their larvae, known as "elvers," drift across the ocean towards freshwater, they use this information, alongside other environmental cues, to remember their journey. As adults, they follow that map in reverse, reading the Earth's magnetic field across thousands of miles of open water to reach the Sargasso mating ground, carrying the coordinates of home within them.

Connections

Many cultures have understood the living world as a system of relationships for a very long time. A particular strand of Western scientific thought, working from a different set of assumptions, has tended to mistake the absence of an explanation for the absence of a system. What could not be measured was assumed not to matter. What could not be seen was assumed not to be there. The forest was a stand of trees. The ocean was water. The eel came from mud.

But the forest was communicating. The ocean was breathing. The eel knew the way home. And much of the living world is alive in ways we have not yet learned to see.





Born from Broken Things

By Hector Rodriguez



Notas Musicales De Tu jardín

By Hector Rodriguez



The idea of this simple practice is to explore our different ways of sensing and feeling, beyond those that we typically lean towards.

Commit twenty or thirty minutes to go outside and take a walk or find someplace to sit down. If you are able to be in a park or more wild area, or in a place where you can feel the company of plants and other animals, be there. But walking down a city street is good too. If you can, choose a place where you can feel more relaxed and at ease. Allow yourself permission to take this time without an "agenda" and without the distraction of your phone. Move a little more slowly than usual. The whole practice is simply noticing, and like most mindfulness, it can be exceedingly simple and at the same time very challenging.

Gently keep bringing your awareness and attention back to noticing what is going on around you. Notice the sky and what the clouds are doing–are they moving fast or slow, in which direction, in what type of patterns? Notice the sun–which way is it traveling, how low in the sky is it, can you feel its warmth? Notice the plants and trees near you. Are they familiar to you or have you never noticed them before? Do they look like they are thriving or struggling?

Are they preparing for winter? Have they been planted there or did they find their own way there? Do you know what people call them?

Notice how you can use your vision in different ways. Focusing it in and looking at something specific or expanding to your peripheral vision so that you have a softer gaze with a wider range of what is visible both in front of you and also on both sides.

Feel the wind as it presses into your body. Where can you feel it? From which direction is it traveling? Take some deep breaths with the consciousness that the air you breathe is in constant exchange with the trees as they absorb the carbon dioxide you exhale and release the oxygen you inhale. Notice how the winds move around you.

Notice the many layers of sounds. The sounds close to you–of your body as it moves. The sounds nearby –are there any bird voices? Do you recognize any of them? Can you see who they belong to? The sounds further off–the traffic, machinery in the distance, the wind.

Notice other people walking by you. Do they look at you? Do you say hello or avert your eyes? Notice any smells. Can you smell any of the plants? Nearby cooking? Asphalt? Do you taste anything?

For a few minutes bring your attention to the fact that as you are noticing what is happening around you, you too are being noticed. As you walk the nearby birds are likely noticing where you are and which way you are going. Trees can sense our presence through direct touch and through the pressure of our bodies as we walk on and near their roots. They may also sense us through light, shadow, temperature and the chemical compounds we release. The pressure of your feet is also being sensed by the small beings that live in the soil.

Recognize that you are both perceiving and being perceived by everything and everyone around you. You are not moving through an "environment"; you are moving with and within a community of beings.

When your thoughts wander to all the other things you need to be doing, try and bring them back to presence where you are. Be gentle on yourself. Give yourself a few minutes to be held in the embrace of an awake and conscious world.

Temporal Nature I by Linda Kourkoulis

Traces

By Anne Huiner

This poem is an excerpt from a larger work called: "Untitled: In Deep Gratitude for Butterfly Against the Wind by Tiokasin Ghosthorse and Jadina Lilien."

Butterfly against the wind
whose wings'
smallest breath
exhales wildflowers
whose delicacy
is deceptive.
What do I breathe into this world?
Is my silence deep listening or cruelty?
How heavy is my footprint?
What seeds do I plant?
What will I reap?
How long can I resist despair?
How can I move from under the weight of this daily grief
recall gratitude
adjust my wings to the wind
and try again?

SHE PUTS DOWN A GOOD TRACK

A Conversation with Watyana'li:yo Bigtree on Language and Generational Responsibility



Watyana'li:yo Bigtree is Oneida, Turtle Clan, and grew up in the Onondaga Nation outside Syracuse, New York. She is a fellow at the Center for Earth Ethics, and for the past two years, has been a student in a Kanien'kéha adult immersion program in Kahnawà:ke, a Mohawk reserve outside Montreal –an intensive program designed to teach fluent second-language speakers of Onkwehonwehnéha (the original Haudenosaunee languages) at a moment when very few first-language speakers remain. Akin spoke with Watyana'li:yo as she entered the final month of her program, about what it means to become a speaker.

Akin: *Thank you so much for taking the time to speak with Akin today. Perhaps you start by introducing yourself and telling us a little about where you're speaking to us from?*

Watyana'li:yo: Shé:kon sewakwé:kon, Watyana'lí:yo ionkiáts, wakeniáhton, tanon onontà:ke nitewaké:kon. Oneniote'á:ka niwakahontsiò:ten, nek tsi ó:nen kahnawà:ke kenákere tsi nikarì:we's Ratiwennahní:rats wakateweienston'hátie'.

I just said: Hello, everybody. My name is Watyana'li:yo. I'm Turtle Clan, and I am Oneida. I am from Onondaga, the Onondaga Nation, which is located close to Syracuse, New York, but I currently live in Kahnawà:ke, which is a Kanien'kehá:ka reserve outside of Montreal, while I am a student at an Onkwehonwehnéha immersion program. My name translates to "she puts down a good track."

Right now, we students are starting to wrap up our time within the adult immersion program. It's a two-year program, but two years is not enough time to become fluent in our languages. In comparison to learning French, for example, our languages are significantly more difficult. It's a verb-centric, polysynthetic language–it's structured differently than English and other common languages.

Because we no longer have the same amount of fluent first-language speakers that we did prior to the residential schools, we're in this process of trying to become fluent as second-language speakers with not many elders still with us who are first-language speakers today.

As we know–if anybody reading this has ever tried to become fluent in a language–it's really hard if you don't have access to an immersive environment. That's why these programs were created.

I owe a lot of gratitude to Center for Earth Ethics. Through this fellowship, I have been able to focus on doing what I can within the time that I have with my teachers and with first-language speakers. [It's allowed me] to study and do my best to become as fluent as I can, so that one day I may be able to raise my children in the language.

Akin: *Could you expand a little bit more on the meaning of your name, Watyana'li:yo–what it means, and how the naming process works for the Haudenosaunee?*

Watyana'li:yo: To offer some background for those that may not be familiar, the Haudenosaunee Confederacy is known as the Six Nations, and our governance system, known as the Great Law of Peace, is what the United States modeled its governance system on, though they didn't necessarily get it all correct. The way that they are conducting themselves is not at all aligned with that of my people and the history of the Great Law of Peace.



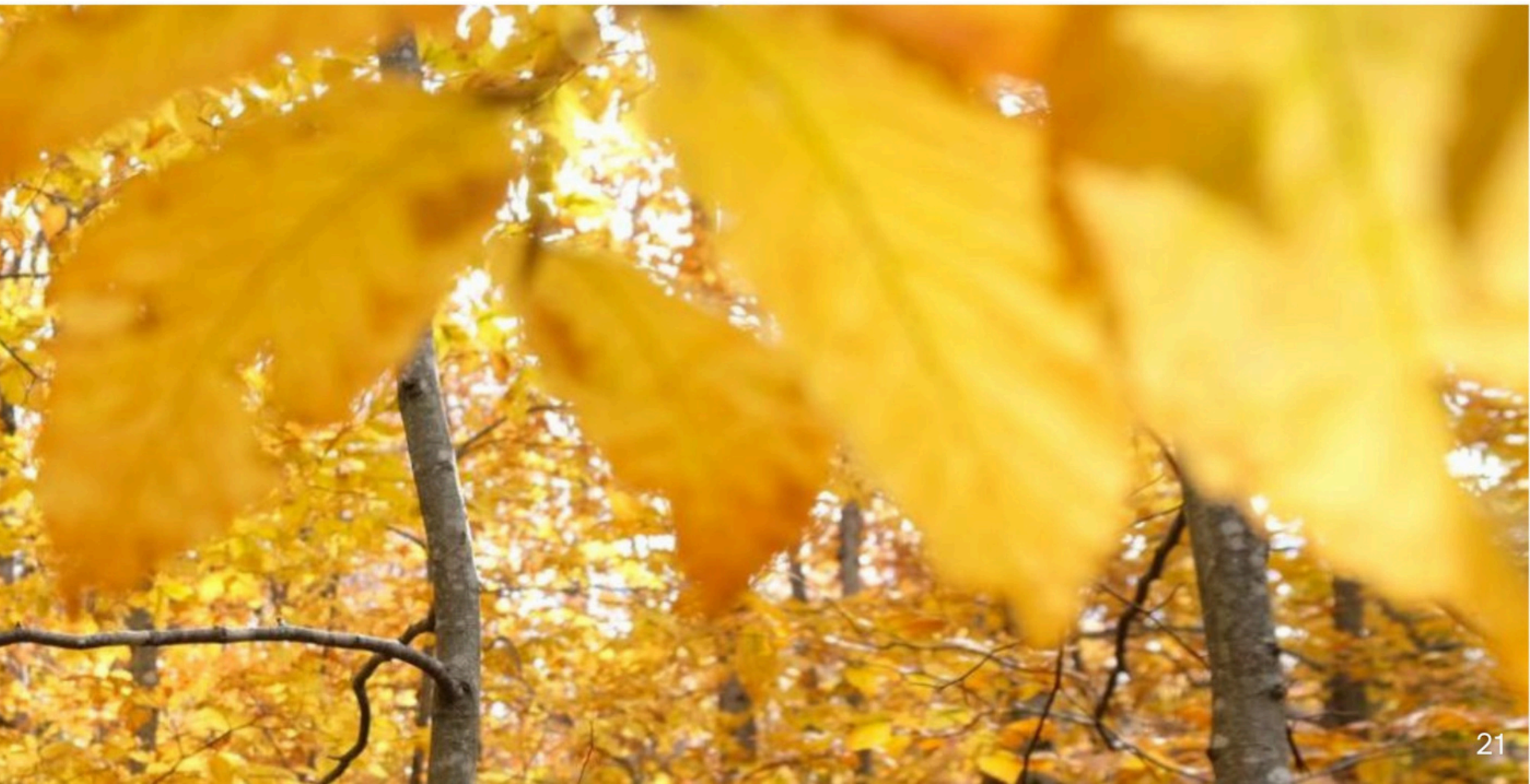
I am Oneida, Turtle Clan, and I grew up in Onondaga, which is known as the central fire of the Haudenosaunee Confederacy. If you look at the Hiawatha belt: the Eastern doorkeepers, or the Kanien'kehá:ka, the People of the Flint, are the elder brothers to the Oneida Nation, the People of the Standing Stone. Then on the other side are the Western doorkeepers, the Seneca, and the older brothers to the Cayuga nation. And in the central fire there, you've got the Onondaga Nation.

But, as Haudenosaunee people, we have been so assimilated, and have faced genocide and so much violence as a people, that we now speak English. And we are forced to navigate two different worlds.

As a people, we're trying to navigate how to carry forth our responsibilities, while continuing to do our best to survive and keep our way of life alive.

So for me, what that looks like is: when I was born, I was given my traditional name–my real name–which is Watyana'li:yo, and it translates to "she puts down a good track," or "she has a good track." However, I also have a colonized name, an English name, which is Olivia Bigtree.

For our people, within our ceremonies in which we give thanks to creation, there are moments where we can raise the names of our babies.





Within the clan, your clan mother gives you your name, and within the words that they say during that ceremony, they're letting the medicines know what your name is, for when you need help. They're letting the whole community know that we have this baby here, and it's our responsibility to look after them. We don't know what we come here with, what kind of gifts we carry–if we're going to be singers, if we're going to be really good at hunting, if we're going to be really good at making water drums –so it's not ever by mistake that you're given your name, and everybody has their own. There is not another Watyana'li:yo.

The idea is, when I pass away, that name will again go back into the basket for another baby to be given. Somebody else definitely had this name before I was born, and somebody else had that same name before they were born, and so on. The clan mothers are the keepers of those names, and that's a huge part of their responsibility for our people (new names are also created).

Akin: *When you describe yourself and your work, you sometimes talk about Onkwehonwenéha–*

the Original Instructions. Could you tell us a little bit more about what that means?

Watyana'li:yo: As a language learner now, I don't know if I would translate it the same way into "Original Instructions," but it is our way of life. Going back to having to balance two worlds–we have our treaties, our Two Row Wampum, which the United States government has failed to uphold.

I'm not an expert. I am a lifelong learner. But the way I've understood it is, there's the ship, and then there's the canoe. The belt has two stripes of purple, and in between those stripes are the white wampum. The representation of the agreement that we had with what is now the United States government is that we are not to interfere with each other. Using the example of my name–we're forced to speak English. We, as Onkwehón:we people, are forced under duress to live in a way that isn't in accordance with our way of life, because of colonization.

They say it's impossible to be in both the ship and the canoe at the same time, that is something that, in my perspective, we're all trying to navigate. They say it's not good to do that, because you can fall in the water. I think that's what we're seeing today. As a people, in this kind of constant state of survival mode, [we're] doing what we can to keep what we have alive.

The language program, which I'm super grateful to be a part of, is a perfect example of that. We have language programs spread throughout the Confederacy, and every generation is doing what they can to learn and pass it down to the generations to come.

Akin: *What does it look like to keep these languages alive when so few first-language speakers are left?*

Watyana'li:yo: It's hard work without first-language speakers. As far as I know, Kanien'kehá:ka, the Mohawk people, have the most first-language speakers still with us today. As soon as you start going beyond the Eastern door, those numbers start to go significantly lower. Within Onondaga, there is one remaining first-language speaker alive who speaks Onondaga, and they live at Six Nations.

For Oneida, the last number that I heard was there's only 10 first-language speakers still with us, and they all live in the Thames (London, Ontario). Tuscarora no longer has any first-language speakers.

I'm sharing that to give perspective on the result of colonization, what these residential schools did to us. We're still dealing with that. It's not something that's far away, and it wasn't even that long ago. It's not something that's deep within the history of America. First Nations and Onkwehón:we people across the globe have to do what we can to keep going with what we still have.

Akin: *You talked earlier about how Onkwehonwehnéha is verb-centric and polysynthetic – structurally very different from English. Has learning to speak in that way changed how you think?*

Watyana'li:yo: Oh, for sure. Once you start learning Onkwehonwehnéha, you can't really go back to what it was like before you started to learn. I say that because within Onkwehonwenéha, you have to be very soecific with your words

We're a very descriptive people, with how we think. We say what we mean, and we say it from our heart, and we can be direct with our words. In English, there's more flexibility: you can say one phrase and use a difference in tone to convey different meanings. Whereas in Onkwehonwehnéha, there's much less wiggle room: you have to mean what you're saying. You have to finish your thoughts.

That has helped me in a lot of ways. As a young woman just trying to figure out how to exist in this chaotic world, things like communicating how I feel have been hard for me. But starting this experience of becoming a speaker has helped me become more specific with what I'm intending to say. I can more confidently identify my thoughts because it pushes me to be more specific and to be direct and to mean what I say–to say it from the heart. That's something I hear a lot of older speakers talk about: when it comes to speaking, the importance of really meaning it and putting your heart into it.

Akin: *Given the edition's theme of seeing the unseen elements of the natural world – is there something different about the way Onkwehonwenéha understands nature, in comparison to, say, English or other colonizer languages?*

Watyana'li:yo: That brings me back to why I wanted to even join an adult immersion program. I was living at Sky Woman's Forever Farm, in the Schoharie Valley [New York] ancestral homelands, to take some time to establish within myself what it means to be connected to our mother, the Earth, as somebody who used to study within colonial education systems.

I went to a private school from kindergarten to 12th grade, and then to the Maryland Institute College of Art for a year. That fast-paced lifestyle is hindering humanity—not just us as Onkwehón:we people. All of humanity has a birthright to feel connected to their mother. I took that time to figure out what it feels like, what it looks like, to really feel connected to my mother, our Mother Earth.



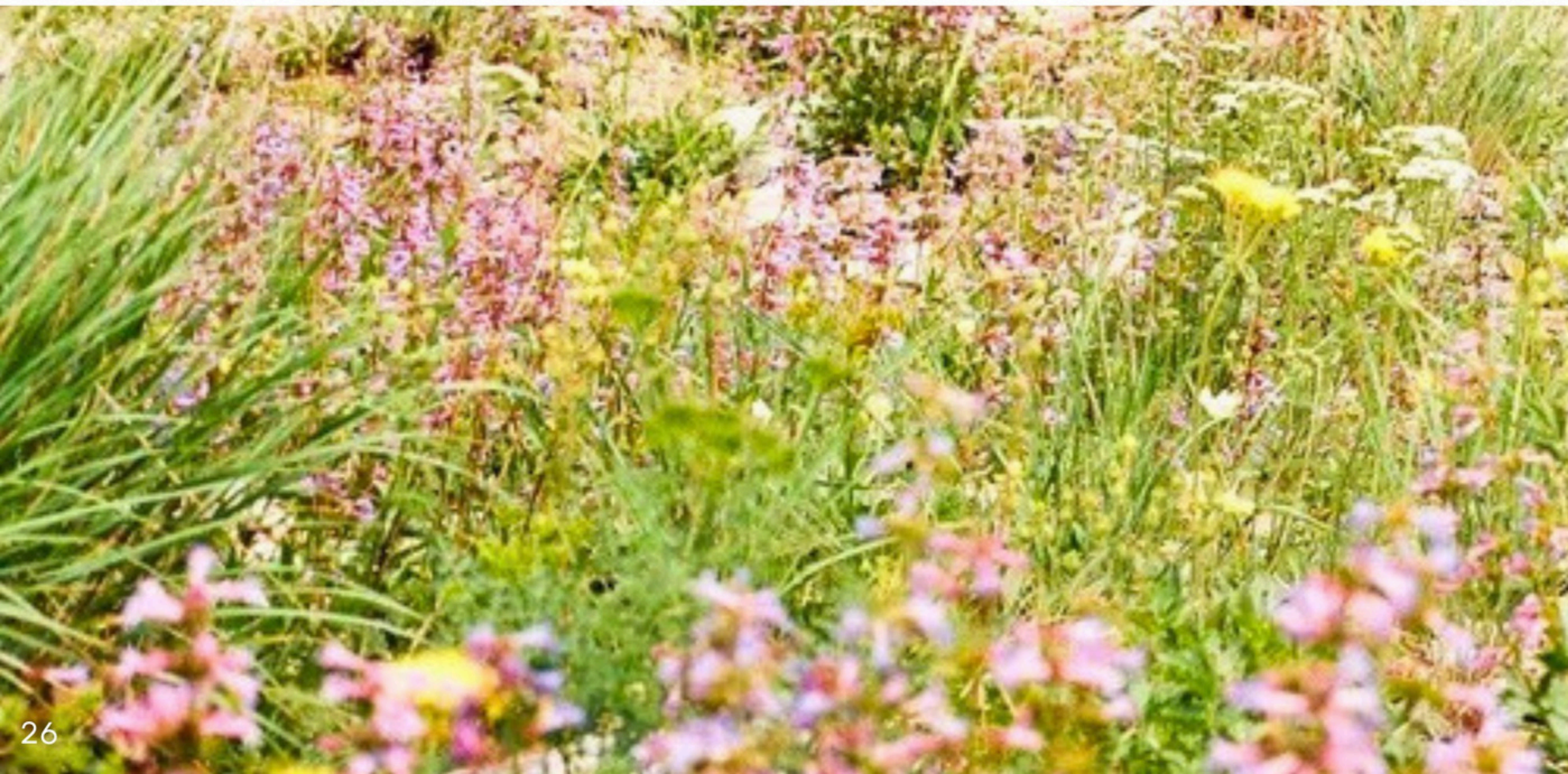
A huge part of what had inspired me to start the language program was being on the land, doing this work, trying to figure out what it looks like to work alongside other Onkwehón:we women towards the same goal of: what does it look like to bring our people back home? The Schoharie has some of the healthiest soil that I've ever set foot on. That different vibration–you definitely feel it. You notice a difference when you have access to cleaner air and cleaner water than what you've been accustomed to.

That was my major motivation to start to become a speaker. I was thinking, "How much stronger might this connection be if I also had my language, and I was able to speak Onkwehonwehnéha?"

I'm excited to continue to figure out how to use what I've learned with the land–giving thanks within our traditional ceremony cycle, learning the Ohen:ton Karihwatehkwen, our Thanksgiving Address, or "the words before all else." That's a traditional custom of our people: when we gather, the first thing we do is give gratitude to creation, and we start with the people and the Earth, and then we work our way up to the sky.

Akin: *You are approaching graduation now. How does that feel for you? And do you have any idea about what comes next?*

Watyana'li:yo: After graduation, you're no longer immersed within



Kanien'kéha all day for five days a week. Without teachers or first-language speakers, if you don't have people in your household that also speak Onkwehonwenéha, it can be really easy to lose what you learn within the program.

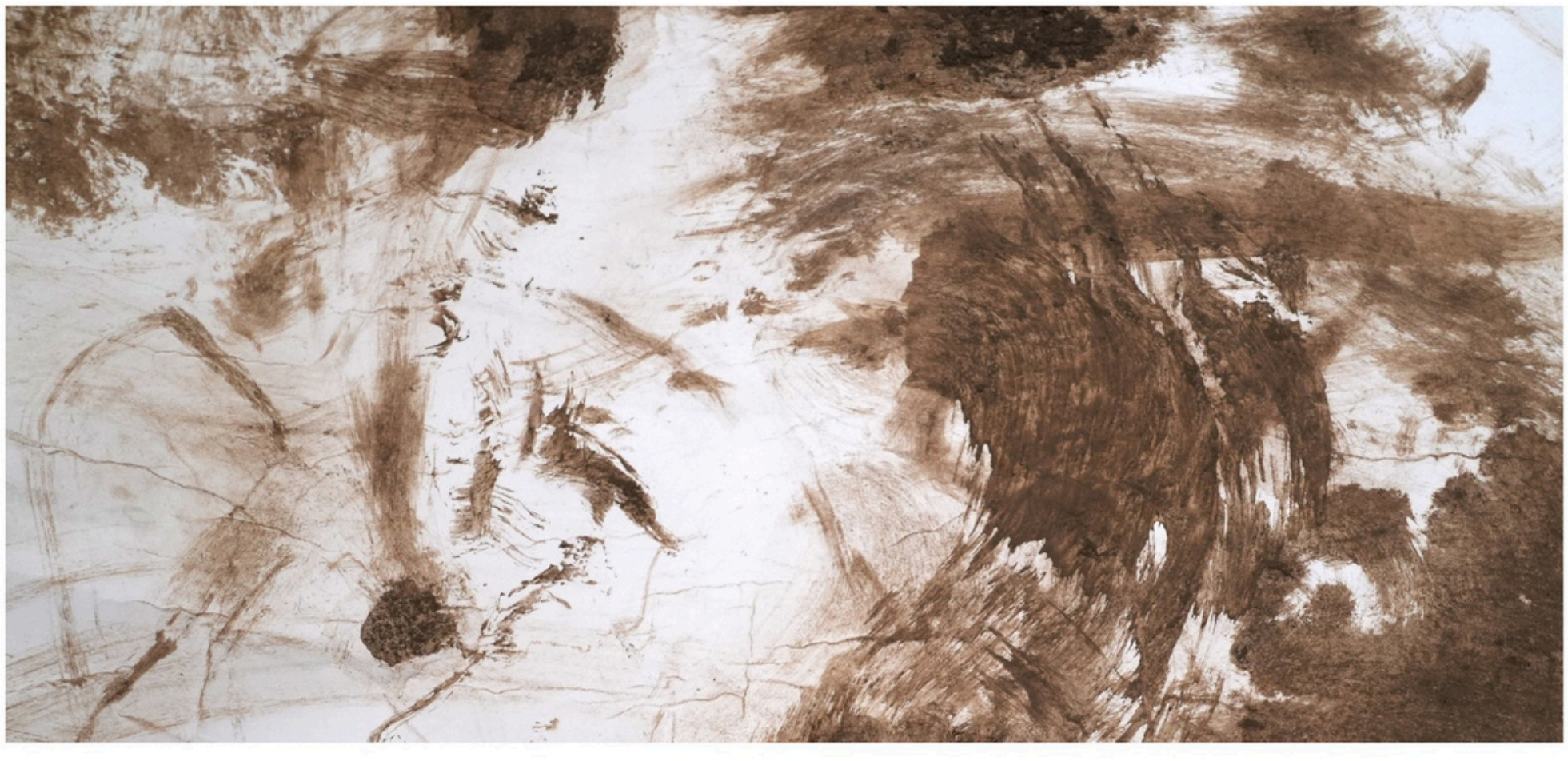
It's bittersweet. It's such a struggle, but that's what's going to push us even more. And there are generational responsibilities. I'm 23. I don't have children, though as a life-giver, I would love to do that one day. The task for me is to try to figure out how to bring language back within my family, and to ensure that when it comes time for me to have children I'm prepared to raise them in our language.

Maybe, eventually, we can hear it being spoken within our local grocery stores or at the gas station. That's the goal: that anywhere you go within our communities, you can speak your language. I would love to see a world in which maybe we don't have to have our children learn English. What would that look like globally, if that was a global intention? I think that would be beautiful, and I hope that day will come.

For myself, I'm hoping to be able to join an Oneida immersion program in the fall. I have hopes to one day help within the language nests we have, and to keep that momentum going—and to one day raise children within Onkwehonwenéha.







Soil

By Jill Sifah Sigman

I have been collecting soils from charged sites in the United States' colonial mythology and in my own personal history. I dance with the soil to listen deeply to its narratives about culture and memory, climate and environmental justice, displacement and colonization. I have danced with soil from the Trail of Tears, from a contaminated neighborhood in Brooklyn, from the pier in Amsterdam where Henry Hudson's ship was built before it sailed into New York harbor in 1609, from a community farm that was once a clear cut forest, and from the cemetery where my parents are buried. This physical process is simultaneously ritual and mapmaking, leaving marks on large-scale paper—a record of my conversation with soil.

Lightning

By Anne Huiner

This poem is an excerpt from a larger work called: "Untitled: In Deep Gratitude for *Butterfly Against the Wind* by Tiokasin Ghosthorse and Jadina Lilien."

Lightning
Clouds thick with memory
a grid of light
etched from sky
to solitary house.
Lines dividing the land
visible
only on the flattened maps
of someone else's imagination.
I have always been terrified of lightning
the warning smell of ozone
the cracks in the world
made audible
the life it uses to channel its path
from sky to earth
burning from the inside out.
I never saw it like this before:
that time when the spirit world
touches the earth
for a moment
the path between worlds
made visible.
Lighting on prairie land, on mountain land, on land peopled by trees.

Temporal Nature II by Linda Kourkoulis

Sumatra's Lost and Forgotten

By Khairani Harahap

In late November 2025, floods and landslides demolished 52 regions in Sumatra. In the aftermath, what remains? A frightening scale of destruction. Silence. Affected communities are suspended in the aftermath, but media outlets gradually withdraw their attention. Amidst the devastation came Eid al-Fitr, an annual celebration defined by forgiveness, reconciliation and togetherness. Each year, for many Muslims, it is the moment when extended families gather in the sacred warmth of a shared home. Yet for those displaced by floods, such spaces no longer exist. Generational homes are reduced to debris. People survive in temporary shelters, rather than living in ancestral homes where belonging accumulates across deeper time. On a day meant to celebrate presence and reunion, absence and more absence predominate. A home lost. People lost. Silence.

In November 2025, as the monsoon season brought high-intensity rainfall, few could have anticipated that the downpour would persist unrelenting for four consecutive days. What began as familiar rainfall soon escalated into disaster, catching communities across Sumatra unprepared. The land was already compromised–the systems that hold ground together pushed past their limit. Floodwaters surged, and landslides followed, leaving many with no means of escape. During this chaos, some were forced to witness the unthinkable: family members swept away by the current, gone within moments. With zero certainty of rescue, prayer became a necessary, yet fragile, refuge.

Millions of tree trunks, submerged and carried by the floodwaters, became visible evidence of a long history of ecological violence, signs of a culture of unchecked extraction. Across Sumatra, nearly nine million hectares of forest, along with the rich biodiversity they once sustained, have been replaced by monocrop plantations. As the world's largest producer of palm oil, contributing approximately 59 percent of global supply, Indonesia's economy thrives off the industry and its growth.

But such large-scale land transformation has fundamentally altered the way natural systems interact. The floods cannot be attributed solely to the force of the water itself. More likely, the fragility of the soil, degraded by years of environmental disruption, rendered the land incapable of absorbing and retaining water. What appeared as a sudden "natural disaster" or "act of God" is, more accurately, an unnatural act of Man. For those individuals and corporations responsible for the destruction of Sumatra's forests, the disaster may prompt only a brief moment of acknowledgment, a passing grief for the approximately



1,189 lives lost and the nearly 200,000 people displaced. Such mourning is temporary, often performative, and quickly absorbed into the continuation of economic activity and the logic of progress and national pride. Ecological injustice gets recorded, but not remembered. It persists as narratives without consequences. Lessons remain unlearned. Catastrophes are documented, but over time, attention shifts, and economic interests take over. An event that was traumatic and life-altering for thousands becomes invisible to the public eye.

Once again we become the “hidden costs” of an economic system, and a set of values, that sacrifices human communities, the land and the whole ecological home that we all share. So we eat, and we pray, and we remember. And we try to carry the invisible into the light to help inspire a different way.





Éire

By CK

Freedom on the Irish land
Where colonial borders will cease to stand
A living, sacred entity,
infused with spirit,
And divinity.
The environment is a community to which we belong,
Not a commodity to be exploited
The landscape a murmuration–
A divine breathing anima present in every hill, stream, bog, lake and wood.
The land is Goddess Ériu
Where ancient lore,
Fairies galore
and
Banshees and our ancestors pour into.
The fertile soil
The ocean roil
Home
We didn't walk through the troubles alone.
Held by the depths of our roots,
Celebrated by shamrock shoots,
Life beyond military boots,
On the post famine ground.
Farmers herd amongst,
The shushing sound
of walking on slender green rushes,
Handwoven into St Brigids crosses.
Honour is Sacred.
An invocation to expand the emerald land
into our home...
The green green grass of home.

an indigo blues

for the Low Country and sixty million and more

By Taylar S. Enlow

Remember the descent:
when you penetrated the waters, shade
so like skin-dark, deep,
Deep. This captive conjurer
invoking time across worlds, stirring
spirits in its depths: indigo.

Is it prophecy, or memory, or unfolding:
Harriet's visions / of the sky, blue like
the river eddies at Stono / the gateway to
the grave-death / an imprint on the soul /
of a nation?

What did you feel with
your hands submerged? Echoes of
something otherwise? How now was
tomorrow, how tomorrow is
yesterday, how yesterday will be
always?

What answers are to be
found without seeing
ourselves, you looking back
from that hue: a song / suspended in sea,
a stain / summoning the departed to circle
through the work / of living, a prayer
both binding and unbound?





What a Day on an Indigo Farm Taught Me About Color, Ecology, and Care

By Xiao Ma

In July, I spent a Sunday learning the art and science of indigo dyeing from natural dyer and farmer Cait Nolan at her indigo farm in Williamstown, New Jersey. Although the farm is a two-and-a-half-hour drive from where I live, I knew it was worth making the trip to learn from someone who not only practices natural dyeing but also grows, harvests and processes indigo on her own land.

I was introduced not simply to the craft of indigo dyeing, but also to an entire ecological system behind it. By the end of the day, I realized that blue is the result of chemistry, agriculture and history all working together.

During my college years, I was introduced to cyanotypes and became fascinated by the color blue. As I developed my own creative practice, I often wondered why I was drawn to cyanotypes rather than indigo dye. What distinguishes one blue from another? Where do these different shades come from, and what histories, materials and processes lie behind them? Being at Cait's farm gave me a chance to explore those questions in a much deeper way.

As we were walking through her dye garden, one of the first things Cait emphasized was that there is no single "indigo plant." Throughout history, many different plants have been used to produce blue pigment, including Japanese indigo (Persicaria tinctoria) and woad (Isatis tinctoria), an indigo-producing species found throughout Africa, Western Asia and Palestine. Before European trade with India, woad was the primary source of blue dye, and it continues to be celebrated in places like France today through festivals dedicated to traditional woad dyeing.

The workshop moved fluidly between botany and chemistry. We learned that healthy indigo plants contain higher concentrations of indican, the



(Image 2: Cait Nolan's Farm)



(Image 3: Woad at Cait's Garden)

compound that eventually becomes blue pigment. Sunlight, plant stress, flowering, leaf thickness and harvest timing influence the amount of usable pigment. Harvesting in the early morning, before plants experience heat stress, helps preserve more indican. Once the plant flowers, however, pigment levels begin to decline.

What fascinated me most was discovering that indigo itself is not naturally blue.

Inside the leaf, the pigment exists as indican, a water-soluble compound. Through enzymatic reactions, indican becomes indoxyl, and only when exposed to oxygen do two indoxyl molecules join together to form the familiar blue indigo pigment.

Watching cloth emerge yellow-green from the dye vat, then slowly oxidize into deep blue, felt magical–an alchemical process unfolding before our eyes.

Cait challenged many assumptions around natural dyeing, including the wide-spread confusion between aqueous extraction and fermentation. While some people describe traditional indigo preparation as a form of fermentation, the two are distinct biological processes. During aqueous extraction, naturally occurring enzymes convert indican into indoxyl. If left too long, fermentation begins, bacteria take over, and valuable pigment can be lost. Success depends on understanding timing, temperature, and the plant's biology rather than simply following recipes.



Historically, colonialism shaped indigo production. The enormous demand for blue dye fueled systems of exploitation, particularly under British colonial rule in India, where farmers were forced to cultivate indigo under oppressive conditions. Learning this history alongside the science reminded me that color is never simply aesthetic. Materials carry stories of labor, trade, extraction and power.

Another important lesson is that “natural” does not automatically mean sustainable.

Today, many indigo vats advertised as natural rely on commercially manufactured reducing agents or heavily processed chemicals. Some products marketed as "organic" or "natural dye paste" still depend on industrial manufacturing. Cait encouraged us to ask difficult questions whenever we encounter natural dyes: Where did these materials come from? How were they processed? What happens to them after we use them? Can the ingredients safely return to the Earth?

Cait told us she has only dyed plants that she had grown. The indigo she grows, harvests, dries and processes stays within the ecological cycle of her farm. Even the dye vats are designed with compostability and environmental impact in mind. We discussed alternative reduction methods using fruits such as bananas, pears, dates and raisins instead of



(Image 5: Crushed Indigo Leaves)



stronger synthetic reducing agents. Rather than asking how to make the fastest or easiest vat, Cait continually returned to a different question: How can we create a dye process in which every material eventually returns safely to the Earth?

The experience made me think more broadly about the colors we wear every day. Where do they come from? What landscapes produced them? What histories do they carry? What happens after those materials leave our closets?

Historically, many plant dyes were not only sources of color but were also associated with medicinal properties. Different dye plants were believed to support different skin conditions or seasonal needs (for example, indigo dyes are usually used in the summer for cooling purposes), reminding us that textiles once existed within larger relationships among agricult-ure, health and ecology.

Cait also spoke about the possibility of colors fading and posed a question that stayed with me long after the workshop: Why are we so fixated on making color permanent? What does permanence even mean in today's world of rapid tectonic change? Her question shifted the way I think about the clothes I wear. I realized how rarely I stop to consider where their colors come from or why I expect them to remain unchanged forever. It also made me wonder whether our pursuit of permanence is something to question rather than simply acc-ept. Is it healthy–or even possible–to hold onto the ideal that everything should last indefinitely?

During the workshop, I tie-dyed a bandana using Japanese indigo and woad, and a linen shirt with woad. The process required three dips each, allowing oxygen to slowly build layers of pigment within the fibers. Patience became part of the practice. Deeper color did not come from leaving the fabric in the vat longer but from repeated cycles of immersion, oxida-tion and care.

I left the farm with more questions than answers. Natural dyeing is often presented in popular culture as an easy craft project, but Cait showed us that responsible indigo work requires ecological knowledge, historical awar-eness and attention to every stage of a material's life cycle.

In the end, the workshop was less about producing beautiful textiles and more about cultivating relationships: with plants, soil, chemistry, history and the eventual return of materials to the Earth. It challenged me to look beyond the finished object to consider the entire life cycle of the materials we use, from cultivation to compost.



(Image 6: Indigo Dye Vat)



(Image 7: My Hand After Indigo Dye)

A CLOSING BENEDICTION

By Tory Field

The invisible energies and connections that sustain life are invisible by design, and they are infinite. Though out of sight, we have the capacity to sense their presence, intuit their relationships, feel their energetic currents in our bodies, and respect their mysteries. Our prayer is to find this way and let it shape us towards humility and reverence. May we cultivate the attention and discipline that allows for these experiences, even in the face of intense corporate-commercial mass distraction. May we insist on the time it takes. We make this prayer knowing that it is a big ask, that it calls in true abundance. We make this prayer knowing that within these subtle encounters, we find a reverberating vibrancy, an expanded joy in our lives. And because we know this renewed wonder is powerful medicine for the whole world, laying the groundwork for our larger prayer that we may find ourselves moving collectively in the direction of healing.

Contributor Biographies

CK is a writer and poet from the north of Ireland. Their work encompasses mysticism, ritualism and spiritualism.

Olivia “Liv” Watyana’li:yo Bigtree is Onyota’a:ka (People of the Standing Stone), Turtle Clan. Mindful of those who came before her and those that are to come, she is an empowered member of the Haudenosaunee Confederacy who strives to live a life authentically rooted within the way of life of her people. Liv moved to Ioskóhare (Schoharie Valley), the ancestral lands of the Kanien’kehá:ka (People of the Flint), in January 2023 to rematriate the land and assist in the growth of the ever-evolving vision taking place at Skywoman’s Forever Farm. Liv is a 2026 graduate of the Kanien’kéha Ratiwennahní:rats Adult Language Immersion Program in Kahnawà:ke (a Kanien’kehá:ka Reserve in Quebec, Canada).

Taylar Enlow is a research and special projects assistant at the Center for Earth Ethics. She is a graduate of Union Theological Seminary.

Tory Field is a research and teaching manager at the Center for Earth Ethics. She has an MDiv from Union Theological Seminary and has spent many years working for social justice organizations and learning from the land.

Khairani Harahap is an Indigenous Bataknese educator who fosters early environmental awareness in children. After using “Kamishibai” puppetry as a medium to introduce local issues, she is experimenting with new approaches to help children begin understanding climate change. Currently based in Bali, she is partnering with local NGOs, and will attend Columbia Climate School in 2027 to further her work and address Indonesia's climate challenges.

Anne Huiner is a writer and educator who lives in the border city of Buffalo, New York. She currently works with and learns from children in a Pre-K program. She recently graduated with her Master’s in Social Justice from Union Theological Seminary where she explored her lifelong interest in the concepts of liminal space and communication across artificially constructed boundaries.

Ned Joyner is the communications manager at the Center for Earth Ethics. A graduate of Union Theological Seminary, he is a musician and artist.

Ryder Kimball is a climate tech writer and landscape photographer. He has worked communictions for Planet, a satellite data provider, and Pacific Fusion, a nuclear fusion startup. He's currently an in-house writer for Lowercarbon Capital, a VC fund investing in hardtech companies. His work blends Earth science with the visual language of new topographics.

Linda Eva Kourkoulis is an artist, educator, and researcher, born in New York City. She earned a BFA from the School of Visual Arts and EdD from Teachers College, Columbia University. Her work combines a variety of print-making techniques and materials for creating sculptural forms. Linda's work is about composing abstractions that signify and describe place, as a space that is occupied, internalized, and in constant flux.

Xiao Ma is a research and engagement intern at the Center for Earth Ethics. Originally from Suzhou, China, they have spent much of their life between Louisiana and Vermont, and now reside in New York City. They are a Master of Divinity student at Union Theological Seminary, concentrating on worship, preaching and the arts. As an experimental photographer, Xiao's work explores the evolving relationship between humans and the natural world.

Hector (Bori) Rodriguez is a justice-impacted artist whose eco-feminist work draws on childhood memories of his mother in Puerto Rico, while his work on mass incarceration draws on his 27 years and two months of incarceration. Through his work, he explores the tensions between confinement and freedom, and between trauma and healing. He advocates for higher education and the arts across all carceral systems.

Rosie Semlyen is a research and policy associate at the Center for Earth Ethics. She is a graduate of the Columbia Climate School.

Jill Sifah Sigman is an interdisciplinary artist, choreographer, activist, and educator whose polyvalent work blurs the lines between dance, visual art, ecology, and philosophy. Her expansive vision of choreography integrates human bodies, more than human neighbors like plants and soil, and objects that people throw away, to orchestrate encounters, interventions, and collaborations as acts of ritual and repair. She is the founder of jill sigman/thinkdance, the Body Politic artist-activist incubator, and the Social Justice Movement Lab, and author of "Ten Huts" (Wesleyan University Press) a book about choreographing site-specific structures out of waste.
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With kind regards,
Taylar Enlow, Tory Field and Rosie Semlyen
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A Center for Earth Ethics Zine

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