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A DIARY IN THE AGE OF WATER

A NOVEL

Nina Munteanu

inanna poetry & fiction series

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We are the water-keepers. The keepers of legends. We are the keepers of the memory of prophecy. These "memories" are recorded outside of time and space. The prophecy of Gaia speaks of the great dying of our friends, the breathers. They breathe us in to receive our gift, and then breathe us out with their gift inside us. Their extinction is also a gift, just as all taking is giving and all giving is taking. We are the water-keepers.

The first truth of water-keeping is that water cannot be kept.

THE LIBRARY

Kyo runs through the dying forest of the north. The last boreal forest in the world.

The rain earlier this morning left the forest dripping with living moisture and saturated the air with the scent of giant conifers. Their fragrance is intoxicating, a fresh pungency that lingers like the smell of fresh water. The giant buttressed trees rise like pillars out of soggy ground. They push past the mixed hardwood canopy and pierce the mist, announcing the future.

Lichen drips off branches and clothes the fibrous trunks in crenulated patterns. Moss covers everything. A filigree of green, silver, and russet plays in the breeze, dancing like a wild shadow.

Tugged by the wind, Kyo's hair flows behind her like a dark turbulent river as she leaps over rough ground, her skirt flying. Her four dark blue arms stretch out for balance as she navigates the obstacle course of fallen trees, tall ferns, and horsetails.

Already high in the sky, the sun is a large blushing orb that bathes everything in hues of pink. Nam calls it Gaia's heart-light, a poem to heaven. Nam told her that the light was very different during the Age of Water, when the sun was sharper and shone brashly in a brilliant cerulean blue sky. Kyo imagines this sky the startling blue colour of Nam's winking eyes. Nam, like Kyo's other mentors, only has two arms and flesh the colour of the sand—not the electric blue of Kyo's own skin. Despite their differences, she thinks of Nam like a mother and secretly wishes she looked like her older mentor.

Kyo stops for a moment to catch her breath and listen to the forest. Cardinals, robins, and thrushes warble and flute loudly, as if complaining about destiny. Yet, they are the interlopers. According to Myo, they took up permanent residence in the north when the climate warmed during the Age of Water. The birds that had previously lived in the north had had nowhere else to go, and had perished. Kyo remembers Ho telling her that the piping plover used to lay its eggs directly on the sand of the northern beaches. The beaches are no more, casualties of sea level rise, erosion, and storm surges; the plovers that nested on them are also no more. But other birds are coming….

The bird symphony flows through Kyo, pulsing with the Earth's heartbeat. She catches the absolute pitch of a starling, tuned to 432 Hz as she aligns herself with nature's intimate frequency. Renge taught her that light, sound, and matter are expressed at different frequencies, and some are only heard by the heart. All movement follows its own path, expressing its relationship with the world. Even things that aren't moving have a potential for rhythm, internal clocks that beat their messages.

Kyo runs on, gathering coherent waves of vibration, intent, and motion into one continuous and harmonious rhythm. She understands that rhythm embraces a fractal continuum that ranges from microscopic to cosmic proportions. Cell division aligns with the planet's circadian rhythms; bees synchronize their flight with the phase of the moon; planets and stars exert gravity and frequency on each other, resonating with the harmonic music of the spheres. Her world flows in constant oscillation from high to low, particle to wave, dark to light, separating and uniting, creating and destroying, and back again. All through water.

It is then that she feels her sisters the most, the other Kyos—other blue beings like her—scattered over the world in small enclaves like hers. Each whispers a harmonic tone in a soft symphony of wisdom—frequencies from all over the world,

carried in the coherent domain of water vapour to resonate through her interstitial water.

They are waiting for her.

She shares their eagerness for the Exodus, but she also harbours a secret yearning for the past as though some hidden part of her has lodged there, like a tendril of a vine reaching across time, seeking resolution—redemption, even. What is holding her back in this drowning forest? It isn't the trees….

There is always sadness in the end of things, but endings are also beginnings, Kyo in Siberia whispers across the northern atmospheric river.

We do not feel this Canadian sadness, Kyos from Scandinavia chime in. *Perhaps that part of us still clings to the mundane comfort of familiarity, given that the maple still stands strong in northern Canada.*

But Kyo knows that is not true; the sugar maple—has been migrating north, scrambling to keep up with the beech, and realizing the native legend. Several are stunted, withholding the sap Kyo loves so much. Many are yellowing at the tips of their leaves and showing bare insect-infested crowns. Soon the maple will drown in the swamps of the north.

Kyo understands that she is holding her sisters back with this selfish sentiment and preoccupation with a past and a people she has only dreamed of. How is it that she alone stands apart from the rest? It is not her lack of adventure or faith. She embraces her future. Nam calls her Sprite; an endearment, she knows, but one based on Kyo's curiosity and yearning for adventure. If her mentor knew of Kyo's perverse and guilty obsession, she might call her something else. And certainly not with a wink.

Kyo stops at a small flowing creek, crouching to study the tracks in the muddy banks. She recognizes the giant paw marks and wide-swathed tail track of a three-metre-long beaver, a relative of the ancient giant beaver. If Renge was here she would peep with fear; but Kyo is not afraid of the huge rodent—even with its giant incisors. She focuses on the eddies that form

around the rocks. Renge told her that water's vitality relies on its rhythmic movement along surfaces and its shifting phases in a dance of synchronicity, chaotic yet self-organizing. It does this by embracing paradox.

Kyo involuntarily swallows down the truth and sits on a moss-covered boulder. She knows that her reluctance to leave has to do with the villainous Water Twins, who destroyed humanity because of their hatred for their own kind. She feels an unreasonable longing—as though a cord were tugging her back to them. The Water Twins were the first ones, the only ones from the Water Age, who had the power to instruct water, and they did so long before the new children of the forest learned how. The Twins unleashed a wrathful Gaia with their alien technology, frequency generators, and shamanic potions. Kyo has dreamed about most of it. Myo and Ho confirmed her vivid dreams with their historical documents. Why is she being plagued by accurate dreams of a time she has never experienced?

Kyo is convinced that the Water Twins somehow spawned the children of the forest—those like her. If not for the Twins, she might be normal, like the others. It is an outrageous supposition, yet she cannot shake it. The Twins destroyed the world, after all. Like Shiva and Kali. The Twins didn't look like the children of the forest, who came much later, after humanity had been all but extinguished. It is impossible that the Twins would be connected to her.

Yet that is exactly how Kyo feels. She desperately wants to believe that the Water Twins somehow did the right thing in causing the storms and eliminating humanity from the planet; she keeps dreaming that she is there with the humans, suffering as they suffered, until only a handful of females remained. Myo, who is far too forgiving, once suggested that the Twins did it to heal both the planet and all life, like a doctor removes a festering limb to heal the body. But how can you heal with hatred and destruction? And why is it so important to Kyo?

Kyo stands up with a shrug. No matter. Today is the day she has been both dreading and anticipating for so long. Today, she will finally learn some ecological history and make her personal atonement to Gaia, who must prepare for a new age. And then she—Kyo—will transcend her current existence to make the Exodus.

Nam instructed her this morning to go to the Age of Water Library in the small beech-maple grove for her last lesson. Nam has been like a mother to Kyo: tall and elegant, with wise maternal eyes the colour of deep water, and carrying the scent and air of Nature. *It is time to let go*, said her mentor. *Time to devote yourself to and fuse your life with the Mystic Law of Water*. Time to learn about humanity's legacy, all that humans have learned and done to prepare for their journey with water. A journey that will ultimately take them all home.

At the library, Kyo is meant to choose a work, or else be given one by Ho, the librarian. Kyo will then commit it to memory before burning it and offering it in the water-keeping ceremony, which will prepare them all for their final journey. Kyo hopes she will be worthy of her choice.

The door of the sacred library beckons through the dying sugar maple stand. It is a solid maple doorway embedded in a hillside covered in shrubs, ferns, and moss; it is hardly visible except to one who knows where to look. Kyo can always spot it from the faint blue glow that persists in the area. Every time she visits the library, Kyo sees blue balls or ribbons of blue light rippling or floating above her. When Renge tried to explain this light to Kyo, she described a phenomenon known as St. Elmo's Fire—bursts of eerie light that occur when an electric charge between clouds and the ground develop a static condition that breaks air molecules into electrically-charged particles. Gases turn into "plasma" and give off energy in the form of a glowing light. But Kyo sees the lights no matter what the weather, even on a perfectly clear day. She wonders if the trees are involved somehow. The library is mostly surrounded by

an enclave of maple, beech, and fir trees. She knows that the trees give off oily aerosols. Perhaps the aerosols are changing as the trees are changing.

Kyo approaches the solid maple door.

She knows which book she wishes to study. It is clearly ambitious of her. Ho will be cross with her for presuming such an undertaking. The textbook is over a thousand pages; it will take her at least six months to learn it. Confident that she will convince the old librarian, Kyo glances back at the forest of her birth and pulls in a deep breath, committing it to memory. Then she reefs open the heavy door and enters the place she will spend the rest of her life on Earth.

Ho meets her in the entranceway. Her stern face is already set in a scowl; she has anticipated Kyo. "Tell me that you have reconsidered," she says gruffly.

"I have not," Kyo says, her voice unwavering. "It will give me the truth, before the post-truth time."

To her surprise, Ho does not pursue her line of questioning or offer a rebuttal. With a wave of her arm toward the main stacks, Ho says, "Very well, child. You have chosen, and that choice is yours to bear." Ho points to the far stacks. "There." She eyes Kyo with a strange look. "That is where you will find your answers." She retreats to the side stacks, her attention presumably elsewhere.

Kyo finds a copy of Robert Wetzel's *Limnology* on a lower shelf of the *L* section. It stands tall with a thick green-coloured spine. This is the book that Hilde, one of the Water Twins, had saved from the book burnings of the Water Age. A present from her limnologist mother. Hilde kept it hidden under her mattress. When CanadaCorp police burst into their home and dragged her mother away, Hilde was left alone with Wetzel. The limnology textbook was forbidden because its facts were no longer facts.

After some coaxing, Myo shared a most bizarre tale of that time, which led to the catastrophic storms and flood. What

the governments hadn't told their citizens—but what each citizen felt and knew—was that humans had lost the ability to reproduce. Then a spate of "virgin births" throughout the world spawned what seemed a new race of girls—"deformed," blue, and often with strange abilities. Many considered them abominations, a terrible sign of what was in store for humanity—a punishment for their evil ways. Then, as quickly as they'd populated the world, these strange blue girls all disappeared without a trace. They simply vanished and became known as "the Disappeared." Myo told her that some people called it a Rapture, a portent of the end times. Others suggested that the girls had all been murdered in an act of genocide organized by what was left of the world government.

Then Hilde's twin Hanna brought the storms and changed the world.

Kyo had dreamed about the storms and calamities. It happened so fast, within a few months—tipping points and titrations in a cascade of disasters in a world already rife with climate change. Both ice caps collapsed in concert and took out most of the world's coastal cities with dramatically rising seas, violent floods, and tsunamis. The seas acidified and the plankton rotted, releasing toxins and more noxious gases. Then, showing an unrelenting fury, Gaia burned the inland cities and countryside with scorching fires, unleashing widespread pestilence. Feverish temperatures raged. They brought wildfires, disease, and great hardship.

Forests burned. Towns burned. People burned.

Pests wiped out the food.

Abandoned by an impotent government, the masses fled north with what they could carry. Like fungal nodules on a root, northbound roads and highways sprouted tents and lean-tos. Temporary shanties colonized edges of decaying cities. They evolved into permanent slums, places where you could buy a dog at gunpoint to eat. Roads were filled with the detritus of humanity: dead technology, rusty appliances, and vermin-in-

fested furniture. Whole families scavenged abandoned cars as temporary homes and lived amid the rancid odour of rotting meat, human sewage, and diesel fumes. Nothing stayed fresh for long in the forty-five-degree temperatures. Markets were set up next to garbage dumps, selling contaminated fish and wilted lettuce. Vermin and disease chased people north with the heat wave.

Occasionally, a wave of migrants would overtake a previous wave, resulting in a violent skirmish over dwindling resources. When there is less for more, there is no sharing.

The last tipping point came in the form of an epigenetic-induced illness that involved heat shock proteins in humans. People dropped like flies to insecticide. Virtually everyone south of the forty-ninth parallel succumbed to rampant cancers, fatal heat stroke, heart failure, and other complications that heat shock proteins—suddenly switched off—no longer shielded against. Those in the north were spared the epidemic but suffered a deluge of catastrophic tornadoes, hurricanes, ice storms, and floods.

Humanity finally joined the sixth age of extinction. If it had not been for the Intervention, humanity would have been completely wiped out. If not for the Intervention, Kyo would not be standing here. But she knows nothing about the Intervention, what brought it about and how it ultimately saved humanity—what is left of humanity, that is. She finds it odd that none of her dreams included this milestone event.

Nothing she's read or heard explains it. And her mentors have offered nothing, except that the Intervention was responsible for helping to bring about the present conditions. It's as though a black hole swallowed the struggles of humanity along with its salvation. Renge told her only that of the few thousand humans who remain scattered on the planet, all of them are female. Some, like Kyo, are not of the same mold. Kyo glances down at her four articulating arms with something close to regret; while she finds her extra limbs useful, she can't help but wish

she was like the other humans who have two arms and aren't blue. She just wants to be normal, like the rest of humanity. But she knows she is not normal: five years ago, Kyo and her thousand-some blue sisters mysteriously emanated, fully formed, all over the planet. They appeared only in locations of particular electro-magnetism, infrasound frequency, and anomalous gravity. For instance, this region of what used to be northern Quebec experiences a slightly lower gravity than the rest of the planet.

In an attempt to suggest that Kyo embrace her uniqueness, Myo let slip that only Kyo and her sisters can access the past with their dreams. Myo has therefore made it her task to document all Kyo's dreams in the Gaia Virtual Library.

Kyo knows that Wetzel will not answer her questions, but at least the textbook will provide her with more information about the world before the Intervention. It will tell her what followed to create the world she now inhabits.

Kyo snatches the heavy textbook off the shelf.

Something beside it tumbles to the floor. Still clutching Wetzel in two of her four arms, she looks down at the object her careless ambition has knocked down. The object lies entombed within a felt-like layer of grey dust, remnants of some kind of organic wrapping. Perhaps a decomposed paper bag. A chrysalis in a cocoon, thinks Kyo with a half-smile.

Intrigued and hardly aware of her escalating breaths, Kyo picks up the dust-covered object with a third hand and carefully wipes off the thick "felt" with her fourth hand to reveal her prize. A leather-bound book.

The book is about the size of an old Water-Age tablet. The dark brown leather cover is worn at the edges and cracked. A ragged corner is torn and part of it hangs like a mountain climber clinging to a cliff. The leather is darker on its outer edge, where it has been oiled by the repeated handling of probing fingers. The book is bound by a leather string, wrapped three times around its waist. A treasure wrapped in rags.

There is no title. Her breaths hitch in sudden realization.

Great Gaia! It's a notebook!

Kyo pries it open with her dark bluish hand. The cover cracks open with some resistance; it pulls away like the husk of a fruit, revealing soft yellowed pages. Handwritten notes in an awkward marriage of fluid cursive and stilted print run neatly along the lines. The black ink strokes—probably from a fountain pen—express a kind of hieroglyph of words, sketches, and symbols that suggest both academic confidence and personal insecurity. The handwriting is open enough for her to surmise that it is in a woman's hand. An intelligent woman. Kyo's fingers track the lines across the surface of the first page. She feels its cool smoothness and inhales the slight mustiness of the paper.

She doesn't realize she is trembling until she catches sight of her shaking blue hand. The date—April 12, 2045—is scrawled at the top left of the page. Below is a term and its definition, followed by narrative. It marks an entry of some kind.

She flips the pages, careful not to tear or fold them, and skims the writing. There are many entries; each is dated and begins with a defined term. Many of them cite Wetzel as the source. Some pages only have a definition, but most definitions are followed by narrative. Some entries include elaborate ink drawings, sketches, or maps.

Excitement pumps through her chest as realization dawns: *this is a personal journal from the time of the Water Twins!*

But whose journal is it? Is there a reason why this diary was placed right next to Hilde's copy of Wetzel's Limnology? Kyo looks from the textbook to the diary that cites it and ponders. She looks behind her, to where Ho lurks among the stacks. Is this her doing? Wetzel became the bible of the Water Twins. But this private account from that same time promises to be far more tantalizing. Its placement in the library, next to Wetzel specifically, suggests great relevance.

Kyo opens the Wetzel text to its title page, where in the same

hybrid cursive and print is written: *To my dearest Hilde, Your loving Mother, Lynna.*

It is the same handwriting! Hilde's mother is the author of the journal!

With a last glance in Ho's direction, Kyo carefully replaces Wetzel's *Limnology* on the shelf and, clutching her new prize, moves to one of the tables by the back windows that face the maple-beech forest.

Under the dappled flowing light, she opens to the first page and reads….

THE DIARY

APRIL 12, 2045

> FETCH: *The distance that wind or waves travel uninterrupted across open water.*
>
> —Robert Wetzel, *Limnology*

I remember every nuance of my mother.

Her deep laugh. Her willowy gait. Her scent, fresh and bracing, as though she'd captured the outdoors. The way she filled a room with her wise and gentle essence. How she spoke, in a lilting cadence, words delivered like sparkling clear water. The way she winked at me with conspiratorial joy and called me *meine Wassergeist*, my water sprite. Her name was Una.

Her smile came from that childhood place where the world is simple and pure. It made her eyes crease into a million golden rays. Her hair was a nest of dark curls that she sometimes pulled back, especially when she worked in the shed behind the house.

When she came inside, she brought in the smell of rain and leaves that she wore like an old coat you never want to throw away. Una sensed how the natural world worked. She'd had little formal education, yet she seemed to know more than most of my university professors. She had a keen and passionate mind, which she applied to a strong environmental ethic.

I know she loved me fiercely. But that fierceness—which extended to her passion for the planet—also had negative consequences. Like the time when she was arrested at a

demonstration in Nathan Phillips Square. I was sitting in my first-grade class, listening to Ms. Belanger tell us about trees, while the RCMP arrested demonstrators protesting the ludicrous American proposal to construct the Rocky Mountain Trench Reservoir in British Columbia. When school was over, Una wasn't waiting at the front gate to take me home. I watched as my classmates left with their parents or caregivers until I was the only one left. Then I started to cry. Our neighbour finally came to take me home. Mrs. Kravitz said I should stay with them until my mother came home from jail.

I know that she didn't mean for it to happen, but I still felt abandoned.

After apologizing to me, Una explained that building the Rocky Mountain reservoirs and associated pipelines threatened to inundate and destroy several small towns and Indigenous communities in the Yukon and British Columbia. Canadians had to support their government in the fight against the U.S. predator who was wooing us with promises of shared wealth. It was like the U.S. was saying, *give me all your candy and maybe later I'll share some with you*. Only the candy was all ours to begin with. "Imagine our home and our neighbour's home suddenly under water," she said to me. "We would all have to move away so people three thousand kilometres away can fill their swimming pools. If the Americans have their way, all of Canada will become their reservoir."

Una sang all the time. German folk songs that her mother used to sing to her. Songs like *Muss i denn*, *Die gedanken sind frei*, *Kein schöner Land in dieser Zeit*, *Wenn ich ein Vöglein wär*, and Goethe's tune *Sah ein Knab ein Röslein stehn*. Each day was like a glittering drop in a flowing narrative of gems. She had a way of imparting deep wisdom while either entertaining or comforting me.

One day stands out. She was wearing a bohemian, layered dress that smelled of the forest. Her dark hair was pulled back in a loose ponytail. Several rogue strands hung over her right

eye. It was the day Ralph tricked me at second recess into giving him my favourite Pokémon card—a sparkly Charizard. I burst into the back shed where Una was fixing our neighbour's chair and I just stood there, trembling with emotion. She immediately saw that I was upset and coaxed out my story.

Una then squatted to my height and looked directly at me with her intense green eyes. "Don't make the mistake of thinking the bully is your friend. He was never your friend. He will never be your friend." Then she placed her hands gently on my shoulders and added with dreadful calm, "You can play with the bully. But don't make him your friend. Demand his respect. Or *you* will become the bully…."

Then she pulled me close to her in a deep embrace and whispered, "come, *Wassergeist*…. You liked sparkly Mew just as much. Now she will be even more special." She winked.

I burst into grateful tears as she held me. Then she left the broken chair she was fixing and took us into the kitchen, where she made us some hot chocolate and told me silly stories about the chickens in the yard.

Una died today. I've lost my mentor. My friend. My link to compassion, wisdom, and unity. She would have been sixty-five. She should have lived another thirty years at least. Why do I feel like she's abandoned me? I had so wanted my little Hildegard to get to know her grandmother better.

I fear what I will become….

AUGUST 22, 2045

> LIMNOLOGY: *The study of inland waters—associated with aquatic ecology and hydrobiology—that includes lakes (both freshwater and saline), reservoirs, rivers and streams, springs and wetlands, and groundwater. The study encompasses ecological systems (within the fields of biology, chemistry, physics, and geology) interacting with their drainage basins (watersheds) and the atmosphere (that integrates the entire hydrological cycle).*
>
> —Robert Wetzel, *Limnology*

I'm a limnologist. I study inland waters. I conduct valid field and lab experiments using controls. I'm a scientist. I use the scientific method to discover cause-and-effect relationships by asking questions, then carefully gathering and examining evidence in an unbiased manner. This usually involves constructing a hypothesis to test and analyze data in order to draw conclusions. It's all based on clarity and logic.

I'm actually lucky to have a job.

There aren't that many jobs for limnologists in Canada, especially considering that this country was once steward of over a fifth of the world's fresh water. Mother used to call Canada the wetland of the world—not because a quarter of the world's wetlands were in Canada, but because of our roles as preservers of Nature and water. Unfortunately, wetlands—like limnologists—have been going the way of the dodo since the

Conservative government passed Bills C-38 and C-45, which reduced freshwater protection. The bills gutted the *Canadian Environmental Protection Act* and the *Fisheries Act*, Canada's major water-policing legislation. The energy sector went crazy, turning pristine lakes into tailings ponds. Environmental consultants morphed from limnologists and hydrologists into water engineers and technicians. The destruction of aquatic habitats and the massive diversion of bodies of water became collateral damage. The same happened on a larger and more terrifying scale when, the same year I turned five, the United States put an entire party of climate deniers and greedy short-sighted business men into power.

Trump, then president of the U.S., accused the Chinese of creating the concept of climate change to destroy America's competitive capacity. On its first day in power, the new American administration wiped all mention of climate change off its website and dismantled the Environmental Protection Agency. The new head of the EPA—another climate change denier—was a pro-industry statesman who had sued the EPA on numerous occasions for interfering with progress. The first thing he did as EPA administrator was deregulate on behalf of industry profit.

In the meantime—unbeknownst to the public—the Center for a New American Security, along with the military and several key corporations, was playing climate change war games. They were militarizing the environment. Then the United States pulled out of the Paris Climate Accord in an individualist attempt to "make America great again." I remember Una quoting Xi Jinping, president of China, who said about Trump's America: "Pursuing protectionism is like locking yourself in a dark room."

I got a job because I'm a water management "engineer"—not a limnologist. There is no pure research to expand our worldview; there is only caretaking the view we've been given.

I cycle everywhere in town. I avoid the subway; the cars are full of beggars, who shuffle up and down, aiming desperate eyes at you. Their stares painfully remind you of your precarious

privilege. When I cycled to campus this morning, I had to go around a construction site right in the middle of King's College Circle. They've torn up the whole circle from Knox College to Gerstein. I was forced to enter University College through the west entrance. The grass is long gone. The circle isn't used for much these days. The odd soccer game perhaps. I saw several CanadaCorp trucks amid the University of Toronto construction vehicles. What are they doing there? In the hallway a few days ago, I overheard Cécile in engineering talking with my boss, André Charron, about "wTaps." They hushed right up when I approached them, and my gut just twisted with cold, suspicious thoughts. What are these "wTaps"? Why don't I know? I heard a rumour somewhere—probably from Daniel—that CanadaCorp will eventually convert all citizen water usage to a public metered system, eradicating private taps in houses.

My stomach churns with my mother's dire prediction: that water utilities will eventually dwindle, and that we will be left with far less than the bare necessity. We've been on an individual water quota of thirty litres per day since 2029. That was sixteen years ago. What's next?

I can see the signs. The low whispers and sideways glances of upper management. The nervous shuffling of everyone else. Now there's all this construction…. And no one even knows what they're building.

Here's what I think: CanadaCorp is funnelling Canadians the same way it funnels our water. Eventually, we'll all be like grey water, repurposed through an intricate network of pipes and conduits, recycled over and over again until we can't distinguish pristine from waste. Perhaps that's all moot. What is pristine? Would I recognize it if I tasted it?

SEPTEMBER 12, 2045

> TIPPING POINT: *The moment of critical mass, the threshold, the boiling point. In epidemiology, the tipping point is that moment when a small change tips the balance of a system and brings about a large change. An example is when the normal spread of influenza throughout a population turns into an epidemic… Ideas, behaviour, messages, and products sometimes behave just like outbreaks of infectious disease. They are social epidemics.*
>
> —Malcolm Gladwell, *The Tipping Point*

What I do is no longer science.

Daniel calls what we do "status quo science." Daniel is my lab's most proficient and reliable technician. He's also the lab's only conspiracy theorist, deftly negotiating Oracle, the deeply infested quagmire of alternative facts, rumour, and conspiracy theory, to emerge with that rarified, almost extinct creature: truth.

Daniel joined my team last year. I tell myself that I hired him because of his exemplary credentials—he came with excellent references from McGill University in Montreal—but he was so young! Dark puppy eyes, a perfect mouth set in an innocent boy's face, and the sharply curious mind of an unrelenting detective. I told him to grow a beard and hired him.

Daniel caught me in the cafeteria with his latest theory this

morning. "Did you know that Raytheon is mining our glaciers?" I rolled my eyes at him—more rumours from Oracle—but I sat down with my java to listen. He was better than TV. Besides, if this news was even partially true it was truly alarming. He then went on babbling about some device Raytheon scientists are creating to suck all the water from our glaciers. Something similar, I thought, to the fog collection devices in the Oman, South Africa, China, and other desert countries.

Canada's glaciers contain as much water as all our rivers and lakes put together. They also feed freshwater to most of our big northern watersheds. If the glaciers go, so do the rivers and lakes, not to mention the groundwater, our giant reserve. Pretty well most of Canada's water. Since Una took me on a cross-Canada trip across the Rockies to the Northwest Territories, I have been fascinated with glaciers and ice fields. I eventually decided to focus on them during my studies at university. I was sad to hear that one of my favourites—the Athabasca Glacier—is no more. Of course, I knew it was happening. It was losing close to ten metres of ice every year. And then, like a tipping point, like a runaway reaction of some viral disease, it suddenly accelerated way beyond that. Like a bubble bursting. Some things we just can't model.

Glaciers carved and fed water to our Great Lakes during the first Great Melt after the ice age, some twenty thousand years ago. I was only two years old when University of Toronto scientists documented the declining levels in the Great Lakes and determined that ancient fossil water from the Great Melt forms the bulk of the Great Lakes' water. Scientists also noted that evaporation was already greater than precipitation. With exports, water uptakes, and associated loss, the water levels are steadily declining. Once lake levels fall below eighty percent of their historic volume, they will reach a tipping point. After that, the water will *never* return. That's how the Great Lakes will become the *Great Puddles*. Precedent was set a long time ago with the Aral Sea.

Una told me about the Aral Sea. A hundred years ago, it was the fourth-largest inland lake in the world. In just four decades, the Soviets' intensive irrigation project shrank the lake by half. By 2014, over-extraction and major river diversions dropped levels by an additional sixteen metres. By the time I was two years old, the Aral Sea—once half the size of England—had shrunk to the size of Montreal.

It's no coincidence that of the dozen largest inland lakes in the world, eight of them are in Canada. It's no coincidence that CanadaCorp needs water engineers.

I'm a limnologist. I'm fracked.