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# Plant Worlds

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## ABSTRACT

Plant communities create and enable most of Earth's living worlds by shaping ecological water and airflows, producing energy and matter through photosynthesis, and linking into vast, interconnected mycorrhizal fungal networks of communication to form interactive, multispecies, and distributive intelligences. We all live in various plant-formed worlds, an under-acknowledged fact in many extractivist cultures today. This essay briefly compares three works of science fiction featuring alien forest worlds that focus specifically on world-shaping vegetal power in which human or humanoid beings exist: Ursula K. Le Guin's 1972 *The Word for World is Forest*, Alan Dean Foster's 1975 *Midworld* and Marcus Hammerschitt's 1998 German novel, *Target*. These three texts immerse the reader in alien forest worlds dominated by plants that human beings try to exploit with various forms of failure. From these explicit failures in otherworldly realms, we find narrative options for reimagining our relationships and resonances with our own powerful vegetal beings back on Earth.

## KEYWORDS

forest worlds, Ursula K. Le Guin, Alan Dean Foster, multispecies communities

## INTRODUCTION: PLANT WORLDS BOTH EARTHLY AND ALIEN

While plant lives differ so greatly from human mobility, language and technological culture that they are easily dismissed as mere background or manipulatable matter – or, if one looks closely enough, like strangely vibrant, alien beings – they actively create the very possibility of our living worlds. Vegetal beings shape ecological water and airflows, they produce energy and matter through photosynthesis, and they link into vast, interconnected mycorrhizal fungal networks of communication to form interactive, multispecies and distributive intelligences. With all this activity, plant communities create and enable most of Earth's living worlds. We all live on a global world shaped by plants, and also in a vast array of smaller-scale plant-formed worlds, from forests to grasslands, deserts and even icy zones. From within, always within, plant-created worlds, human beings navigate oxygen-rich air with inevitable bodily resonances – breathing, eating and

building with plant products. Despite our fundamental and inescapable bodily resonances with plants, human cultural resonances are not always as clear, particularly recently. As Luce Irigaray writes in her joint philosophical contemplation of plants with Michael Marder, *Through Vegetal Being*, plants provide the oxygenated air for us to breathe, and birth is an emergence into the vegetally-enriched air. Yet, 'being born requires one to breathe by oneself. Instead of teaching me how to cultivate my breathing [indicating our plant-dependency], my culture had taught me how to suspend my breath in words, ideas, or ideals…' (Irigaray and Marder 2016: 20). Irigarary focuses on breathing as the activation of our concrete and metaphorical connection to vegetal life, and she continually returns to gardens and plant-rich areas to engage purposefully with what she terms the 'aerial placenta' (Irigaray and Marder 2016: 21). Our bodily resonance with plants is explicit in that our oxygen-seeking and carbon-dioxide producing lungs have the same shape as but inverse actions to vegetal oxygen-producing and carbon-dioxide-seeking forms like trees. Nevertheless, some human cultures, especially industrialised and extractivist ones, often overlook the relevance and vastness of vegetal impact and thereby interact with our world-shaping vegetal forms primarily as matter and food to instrumentalise or ignore other than when eating lunch or decorating our spaces. Literary texts offer many examples of overlooking plant power as the frame for our living worlds, but they also present alternative visions of consciously living immersed in plant worlds. Forest narratives present a particularly rich array of possible immersion scenarios or acknowledgments of our plant dependencies, scenarios in which humans do not always have control. In this essay, I briefly compare three works of science fiction featuring alien forest worlds where vegetal power cannot be overlooked: Ursula K. Le Guin's 1972 *The Word for World is Forest*, Alan Dean Foster's 1975 *Midworld* and Marcus Hammerschitt's 1998 German novel, *Target*. All three texts immerse the reader in alien forest worlds dominated by plants that human beings try to exploit with various forms of failure. From these explicit failures in otherworldly realms, we find narrative options for reimagining our relationships and resonances with our own powerful vegetal beings back on Earth.

Thinking about existing within plant worlds leads the editors of *Plants in Science Fiction: Speculative Vision*, Katherine E. Bishop, David Higgins and Jerry Määttä (2020), to write that: 'the way we think about

vegetation is not simply central to the way we think about ourselves or even humanity; the way we think about vegetation may also be key to our continued existence' (4). Indeed, looking at the long-term evolution of our living world in terms of plants, Michael Pollan declares that human beings are products of what he describes as vegetal desire, of plant reproductive strategies that evolved flowers and seeds. Such relatively new forms of energy, new at least in evolutionary terms, supported and still support all kinds of animal life including insects, birds and human beings. Pollan writes: 'Once upon time, there were no flowers—two hundred million years ago … This prefloriferous world was a slower, simpler, sleepier world than our own … The world before flowers was sleepier than ours because, lacking fruit and large seeds, it couldn't support many warm-blooded creatures … Flowers changed everything' (Pollan 2001: 107). The radical change brought by angiosperms with their sexy flowers and nutritious seeds meant that large animals could emerge. 'By producing sugars and proteins to entice animals to disperse their seed, the angiosperms multiplied the world's supply of food energy, making possible the rise of large warm-blooded animals … Without flowers, we would not be' (Pollan 2001: 108–09). In other words, this kind of larger scale, longer term vegetal production relates to our entire existence, our evolution and our ongoing ecological functioning. We human beings exist as an outcome of vegetal exuberance and long-term activities of plants.[1] The editors of *The Language of Plants: Science, Philosophy, Literature*, Monica Gagliano, John C. Ryan and Patricia Viera, present this power as follows:

> Plants are perhaps the most fundamental form of life, providing sustenance, and thus enabling the existence of all animals, including us humans. Their evolutionary transition from Paleozoic aquatic beginnings to a vegetative life out of water is undoubtedly one of the farthest-reaching events in the history of the

1 Similar claims about our resonance with other living things are made by many recent authors such as the editors of *Arts of Living on a Damaged Planet*, Anna Tsing, Heather Swanson, Elain Gan and Nils Bubandt (2017). For an impressive study of human civilisation in terms of plants, see Lincoln and Lee Taiz's (2017) book on plant sexuality that begins at the beginning when neo-lithic cultures began agriculture, and follows global cultures through the centuries in terms of their agriculture and moral debates about sex. The fact that the book focuses on understandings and denials of vegetal sex is rather ironically relevant for cultures whose very 'progress' depends on harnessing sexual products of plants such as seeds (rice, wheat, corn, barley, etc.) and fruits.

> earth. It was the silent yet relentless colonization of terrestrial environments by the earliest land plants that transformed the global landscape and radically altered the geochemical cycles of the planet. This resulted in lowered concentrations of atmospheric carbon dioxide and thus set the scene for the emergence of terrestrial animals about 350 million years ago (Gagliano et al. 2017, vii).

The very vastness and inhuman scale of plant life can make the sheer, overbearing power of vegetal impacts on our world fade behind our own short-term and dramatic transformation of the worlds we occupy. Interestingly, the concept of plant worlds may appear alien. Let us thus use narratives of alien plant worlds to remind us of our own plant dependencies from afar, so as to then rethink the shape of our own earthly communities.

## II. URSULA K. LE GUIN'S *THE WORD FOR WORLD IS FOREST*

Le Guin's short novel or novella, *The Word for World is Forest*, inspires the title and topic of this essay. Her vision of the world is a forest, not world as earth/soil/clay. Her story takes place on a distant planet, Athshe, which is a forest world with land covered fully by trees and interrupted only by seas. It is populated by humanoid Athsheans who are green, furry and smaller in stature than human beings (who are called 'yumens' in the text as a form of textual alienation). Despite these external and visual differences, the Athsheans were seeded along with the familiar vegetation on the planet in the distant past by the Hanish and so are part of the larger system of interrelated and interconnected worlds that are featured in many of Le Guin's science fiction works. Representing an Indigenous culture that experiences a first encounter with colonising 'yumens' who come to cut down the forests for wood, the Athsheans are enslaved, murdered and raped. Furthermore, they are shocked by the yumen willingness to destroy the world – the forest, that is – with no thought to consequences. Indeed, having already depleted the Earth of virtually all living things whether plants or non-human animals, yumens now seek wood from other planets just as rapaciously. They deforest rapidly and without a care for the ecological impact or the meaning of the forest, and then they plant earthly agricultural plants, all of which rapidly leads to the same devastation of Athshe that occurred on Earth. This tale of a forest planet sets up a contrast between colonising yumens, who log, and native Athsheans, who live in the forest and know of their

interconnection with the trees. One cannot say that knowledge of living in a plant world immunises one from destruction; rather, the contrary appears to be true.

Giving the planet Athshe the colonial name of 'New Tahiti', the yumens are led and represented by men such as Captain Davidson, a caricature of a sexist, racist and capitalist coloniser. The story opens with his waking thoughts, both 'up' and 'down'. 'Up' is the arrival of 'the second batch of breeding females for the New Tahiti Colony, all sound and clean, 212 head of prime human stock', (Le Guin 1972: 9), a vision that immediately establishes his instrumentalising views broadly. Thinking of the '212 buxom beddable breasty little figures', he almost overcomes his dissatisfaction with the 'down' – the massive erosion that destroyed 'Dump Island' due to the destructive deforestation that he led, despite being told to leave some trees standing (Le Guin 1972: 10). Davidson enacts the stereotypes fully: human women are merely for sex and 'breeding', Indigenous people, the 'creechies', as they call them, exist solely for exploitation (including raping the women to death) and, eventually, extermination, as he notes, calling himself a 'conquistador', and trees are irrelevant other than as future logs:

> But he still couldn't see why a soybean farm needed to waste a lot of space on trees if the land was managed really scientifically. It wasn't like that in Ohio; if you wanted corn you grew corn and no space wasted on trees and stuff. But then Earth was a tamed planet and New Tahiti wasn't. That's what he was here for: to tame it (Le Guin 1972: 10).

Having 'tamed' Earth to be a mere concrete-covered death zone of overpopulation, the yumens arrived to 'clean up' this forest planet. Davidson muses: 'For this world, New Tahiti, was literally made for men. Cleaned up and cleaned out, the dark forests cut down for open fields of grain, the primeval murk and savagery and ignorance wiped out, it would be a paradise, a real Eden, a better world than worn-out Earth' (Le Guin 1972: 12). After only three months, huge swaths of forest are already gone and the damage is increasing without causing the yumens to change their approach. Le Guin presents the logging yumens as incapable of enacting a new strategy despite having already destroyed their home planet, Earth, and despite having a specialist ecologist present who warns them to log a little less rapidly.

*Word for World is Forest* begins, in other words, in the middle of the alien invasion of the deforesting yumens, and it begins with the overtly

problematic views of Davidson. But it then shifts in the second chapter to the Indigenous perspective, represented by Selver, a former slave whose wife was raped to death by Davidson before the narrative opens. In an unprecedented act of violence for the non-violent, non-murdering Athsheans, Selver had attacked Davidson and was almost killed. The third main character, Lyubov, whose importance is his work as a 'neutral' anthropologist and translator between cultures and languages, saved Selver's life as he was beaten nearly to death by Davidson; Selver then joined Lyubov to complete the essential translation work which also took place before the beginning of our story. The novella gives each of its three main characters individual chapters, one after another. First is Davidson, then Selver, then Lyubov, with three cycles of each until the end when Lyubov is dead and Selver has the last word in chapter eight. Selver's actions begin, however, already in Davidson's opening chapter when the yumen captain returns to camp after having visited the 'prime stock' of 'breeding females' only to find the camp burning and everyone dead. Selver, a dreamer, religious leader, a god of translation for the Athsheans, has learned killing from the yumens and has begun the revolution to save them and their forest world. He confronts Davidson with song, the Athshean equivalent of a duel, but Davidson lies on his back and cannot sing – a major defeat for the seemingly manly coloniser who plans to 'rub out' the Indigenous, which 'is just how things happen to be. Primitive races always have to give way to civilized ones' (Le Guin 1972: 21). Davidson does not admit his submission, and rejects the fact that he lost the duel. He spends the rest of the story destroying the forest, fire-bombing the forest villages of the Athsheans in a manner that Le Guin clearly uses to evoke the Vietnam war strategies, and defying even his superior officers. Finally, Selver and his fellow Athsheans win the war, arrest Davidson and exile him to the destroyed, over logged 'Dump Island', and save the future of the planet by taking on human/yumen strategies of murder, violence and death. It is a victory of sorts, but a terrible one enabled also by other outside intervention, which is noted below.

Selver's chapter, in contrast to Davidson's, first opens with the forest and the trees. In an exemplary literary representation of a sharp contrast between the human egotism and prejudice of Davidson and the Athshean cultural acknowledgment of being immersed in, and part of, a forest world, Le Guin dedicates a long, nearly two-page paragraph to

the lively forest itself before revealing Selver within the forest, walking along a path after having destroyed Davidson's camp. She deliberately uses the same words in this depiction that appear in Davidson's critique of the 'meaningless' forest, but now with a completely altered context that reveals the aesthetic marvel of the world/forest as the context *for* Selver and all the Athsheans. Davidson complains about the 'nothingness' of the forest as if representing a contorted and perverse 'western' philosophy:

> But when they came here there had been nothing. Trees. A dark huddle and jumble and tangle of trees, endless, meaningless. A sluggish river overhung and choked by trees, a few creechie-warrens hidden among the trees, some red deer, hairy monkeys, birds. And trees. Roots, boles, branches, twigs, leaves, leaves overhead and underfoot and in your face and in your eyes, endless leaves on endless trees (Le Guin 1972: 15).

The introductory paragraph for Selver uses some of this wording directly, but now in a manner that instead immerses us into the life of the forest, into the vegetal world of the Athsheans in a beautiful verbal painting of living communities. So it begins, with sensory immersion into colours, sounds, depth of the green:

> All the colors of rust and sunset, brown-reds and pale green, changed ceaselessly in the long leaves as the wind blew. The roots of the copper willows, thick and ridged, were moss-green down by the running water, which like the wind moved slowly … held back by rocks, roots, handing and fallen leaves. No way was clear, no light unbroken, in the forest. Into wind, water, sunlight, starlight, there always entered leaf and branch, bole and root, the shadowy, the complex' (Le Guin 1972: 35).

Le Guin here creates a philosophy of trees, not of the clearing or enlightenment or ultimate truths but rather of an entangled living community of the vegetal, the animal and the Athshean, Indigenous, human. Furthermore, the passage emphasises a multi-species community, a living collaboration: 'The ground was not dry and solid but damp and rather springy, product of the collaboration of living things with the long, elaborate death of leaves and trees; and from that rich graveyard grew ninety-foot trees, and tiny mushrooms…' (Le Guin 1972: 36). And then Selver appears, walking on a path. Immersed within the forest, he appears as a god to the Athsheans, who use the word 'god' also to mean 'translator'. Selver translates dreams into action and yumen behaviours into Athshean strategies of resistance with terrible fury. The

violence, however, does save the forest world in which they make their homes under the roots, as integral parts of the living community.

Notably, Selver also worked previously with Lyubov to create a dictionary of yumen-Athshean languages, an accomplishment that also helps save the planet in that the interstellar group of the League of Worlds arrives and declares Athshe free of exploitation after reading their collaborative work. For Le Guin, some violent resistance alongside the all-important communication enabled by both the translation work and an 'ansible,' which is her invented term for an instantaneous communication device that reaches across the universe, is the true and rather optimistic means of overcoming colonization and devastating deforestation. Understanding other cultures and peoples succeeds, even if it takes adopting extreme violence when the Athsheans are led by Selver to slaughter all the yumen females to prevent future generations. From Le Guin's *Word for World is Forest*, we understand that the goal is to achieve successful cross-species and cross-cultural communication. Such a possibility of understanding also involves acknowledging the shared origins of manifold beings and cultures regardless of their external differences. Although the Athsheans live in resonance with the forest, this long-term strategy of success does not protect them from exploitation. If Le Guin had not brought in the deux-ex-machina like communication device, the ansible, along with the intervention of the League of Worlds, they may have simply been decimated, if not immediately, then eventually, along with the forests of Athshea (and Earth). Still, Le Guin's somewhat hopeful message of cross-species communication in the forest, and cross-cultural communication across different peoples, though 'dystopian', according to David Landis Barnhill (2010), provides at least an imaginative possibility for recognising the power and inevitable if not always acknowledged resonance of the vegetal worlds in which we exist.

## III. ALAN DEAN FOSTER'S *MIDWORLD,* A FOREST NOVEL

Much like Le Guin, Alan Dean Foster's alien forest world of *Midworld* presents a group of Indigenous people who live in and with the forest and who encounter 'alien' humans who have come to exploit the plant life for profit. Offering an exemplary vision of the reciprocal entanglement

and resonances of plants and humans in this lesser-known 1975 novel, however, the trees are not just the world, they are also sentient caretakers (as well as being, on occasion, predatory). Trees collaborate with and help the people, including the 'Home-trees', a name found also in James Cameron's famous 2009 film on another tree world, *Avatar*. Cameron does not name Foster specifically as an influence, but rather credits 'inspiration' from 'every single science fiction book I read as a kid' (Jensen 2007). Home-trees are, in any case, a major feature of both the famous film and Foster's forest world but in Foster's version, they are sentient and explicitly agential. They create the world of forest, and they rapidly cause the humans who landed there many years ago to adapt to live in the forest as a collaborative part of the multispecies community. The major contrast to Le Guin's world is the extreme danger of this sentient forest, for it is filled with hungry plants and animals of all kinds. The only hope is to know the forest and to adapt to its systems.

As a guide to this discussion of Foster's forest world, I follow Robin Wall Kimmerer's brilliant work combining Indigenous wisdom and scientific thinking in *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. She writes that plant power most often succeeds best in multi-species collaborations. 'The mycorrhizae may form fungal bridges between individual trees, so that all the trees in a forest are connected. These fungal networks appear to redistribute the wealth of carbohydrates from tree to tree … They weave a web of reciprocity, of giving and taking' (Kimmerer 2013: 20). These reciprocal collaborations include many species from fungi to bees, birds and elephants, as well as human beings. The titular reference to sweetgrass exemplifies just such an example of plant-human care: 'Wild meadow sweetgrass grows long and fragrant when it is looked after by humans. Weeding and care for the habitat and neighboring plants strengthens its growth' (Kimmerer 2013: 62). Kimmerer's work presents collaboration as the primary form of plant-human existence, at least when done successfully. Her insights demonstrate the reciprocal interactions undergirding much of life that are also revealed, albeit with a lot of danger and in many wildly imaginative alien forms, in Foster's novel.

*Midworld*'s lush green forest covering the entire planet is composed of trees so tall that they create seven different levels of life, each one a separate ecosystem of altitude rather than latitude and longitude: 'There were seven levels to the forest world. Mankind, the persons, preferred

this, the Third. So did the furcots. Two levels rose above this one, to a sun-bleached green roof and the Upper Hell. Four lay below, the Seventh and deepest being the Lower and True Hell, over four hundred and fifty meters below the home' (Foster 1975: 9). At the top two levels, 'Upper Hell', enormous predators flap or float above the sequoia-dwarfing trees seeking any sign of life/prey below. In the Third level, with enough light to thrive but with cover from the huge flyers, live the people, the once human survivors from a crash generations ago lost to time and forgotten by the rest of the space-faring worlds. They were very rapidly altered by their interactions with the plants, who clearly aided their evolution into better climbers with smaller height, longer, grasping toes, strong shoulders. They also gain the ability to communicate emotionally with plants so as to pick only fruit that indicates it is ready to be picked. This skill is called 'emfoling' in the novel and it is an overt form of plant-human emotional and communicative resonance. In the deepest levels of the world one finds 'Lower Hell', existing in full darkness except for glowing fungal bioluminescence. From the swampy ground and lightless water, where enormous fish-like predators hunt, arise the vast tree bases. Foster creates this vertically-divided world as a verdantly explosive realm filled with an astonishing array of threats both floral and faunal. One only survives by understanding one's position within the forest and by being aware of the inevitable (and inescapable) resonance with plant lives.

The young-adult novel opens when the youthful protagonist, Born, a hunter out to find impressive game to win over the lovely girl, Brightly Go, spots a strange silver shape below in the trees, a crashed flyer containing 'giants', or 'giant' human beings (from the perspective of Born's smaller, tree-people). He brings the giants to the Home-tree and then helps them travel through the forest back to their extractivist site. They serve to represent the unknowing and oblivious culture seeking only profit and mocking Born and his people for their connection to the forest. As Robert Pogue Harrison explains in *Forests: The Shadow of Civilization*, there has long been an assumption in 'Western' cultures that creating civilisation occurs by cutting down forests to make space for human developments and agriculture. Therefore, Harrison notes, it is often claimed that forests and forest people represent the 'opposite' of civilisation: 'To burn out a clearing in the forest and to claim it as the sacred ground of the family – that, according to Vico, was the

original deed of appropriation that first opened the space of civil society' (Harrison 1992: 6). The prejudice against forest-dwelling cultures is based on the idea, according to Harrison, that 'forests mark the provincial edge of Western civilization' (Harrison 1992: 247); the implications are that anything *inside* the forest is *outside of civilisation* where outlaws live.[2] Foster's novel suggests that industrialised and extractivist civilisation is, in contrast, the uncivil form, and he presents in no uncertain terms the ignorance and horror of the corporate representatives' cruel exploitations. In a conversation, Born counters their cold-hearted utilitarian sense of the forest with his explanation of living as a part of the forest, not as users of it: 'We do not use the forest. We are a part of the forest, the world. We are a part of the cycle that cannot be broken. We no more use the forest than the forest uses us' (Foster 1975: 67).

The company, in contrast, is there to find something for profit, at all costs, and in secret. This pharmaceutical group discovers burls growing from the trees that provide a life-extending substance worth unimaginable amounts of money. We learn, however, that these are the burls growing out of special burial trees, the 'They-Who-Keep,' out of which the 'furcots' emerge. The furcots are large, green-furred, sharp-clawed and tree-produced, photosynthesising animal beings whose purpose is to communicate and collaborate with the indigenous humans. In fact, the trees produce a baby furcot at the moment of every human birth; the two beings become life-long companions who cannot survive without each other: 'every person has his furcot and every furcot its person, as every flitter its blossoms, every cubble its anchor tree, every pfeffermall its resonator. It's the balance of the world' (Foster 1975: 49). In other words, the furcots' relationship with humans embodies plant-human resonance. When Born and his fellow hunter learn of this unspeakable plan to exploit the burls after having accompanied the visitors back to their lab, the two remain silent but decide for that reason to destroy the entire installation. The extractivists are destroying the plant-human-furcot resonance while having no comprehension of, or care about, what they do. Born's team destroy the construction with the help of the forest: they connect the site with naturally conducting vines to a 'Stormtreader'

2 See also Sara Maitland, *From the Forest: A Search for the Hidden Roots of Our Fairy Tales* (2012), for more on the association of forests with outlaws and as realms outside of civilization.

tree, the trees that attract and store lightening energy thereby helping the forest avoid nightly damage from the storms. They let the forest eliminate the extractivist intruders. All beings are iterations of the forest and those who come to take without participating in the larger cycles are treated as invading diseases needing to be eradicated. Knowledge of existing *within* the forest allows them to win.

This victorious ending shared by the Indigenous, the huge green furcots and the forest looks much like the victories at the end of both Le Guin's *Word for World is Forest* and Cameron's *Avatar*. What I want to emphasise here, however, is the focus on the forest-human collaboration as life-giving resonance that is not really so alien as it might seem. Much like Kimmerer's vision of reciprocity, Foster portrays a vibrant world of life and death in which survival and success occur only through collaboration.[3] Such reciprocity depends on an acknowledgment of forest care and agency voiced by the tree-created furcots. His novel clearly emphasises this vegetal voice, opening, in fact, with three relevant epigraphs. While the first epigraph is taken from Milton's *Paradise Lost* and describes the darkness of the forest: '… where highest woods impenetrable to star or sunlight, spread their umbrage broad', the next two epigraphs explicitly attribute agency and voice to the more-than-human. The first is from Thoreau: 'Who hears fishes when they scream?'; and the second quote is attributed to an actual earthly plant, *Calthea insignis*, commonly known as the 'rattlesnake plant', or a prayer plant, an exotic and popular house plant that originates in the rainforests of Brazil, living on the shady forest floor. It is quoted as saying: '……!!..??..O!!' (Foster 1975: third epigraph). In other words, Foster alerts the readers before the novel even begins to focus on the non-human voices and power.

The novel opens, indeed, with attention to the forest, not the human beings: 'World with no name. / Green it was. / Green and gravid' (Foster 1975: 1). The green world had a kind of sentience that gradually adapted to and then adapted with the arrival of human beings. 'The forest had

3 Foster returns to Midworld in the 1995 novel from his many-volumed 'Pip and Flinx' series, *Mid-Flinx*. This novel again features a cruelly rich extractivist who is finally defeated by the forest with the help of the heroic visiting Flinx, his mini-dragon, Pip, a lovely young widow and her two children and their furcots. We learn more about the vegetal intelligence as well as the glorious world-building details of the ecological nightmare that is the forest to the unprepared and uncooperating invaders.

strength and resilience and fecundity and variety. It was adding to its intelligence now, slowly, patiently, in the way of the plant' (Foster 1975: 212). The reciprocity between the trees and the humans appears also in the form of shelter embodied by the massive Home-tree:

> the Home-tree was a monstrously big tree for certain. Broad twisting branches and vines-of-own shot out in all direction. Air-trees and cubbles and lianas grew in and about the tree's own growth. Born noted with satisfaction that only plants which were innocuous or helpful to the Home-tree grew on it. His people kept the Home-tree well and, in turn, the Home-tree kept them (Foster 1975: 18).

The tree cares for them and they care for it by removing harmful growths and by supplementing its nutrients with their waste. Further protection comes from the vines surrounding their living area that are lined with pollen pods whose exploding dust can kill, and it also produces blossoms into which the residents spit, causing the barbed vines to pull away and create an opening to the living area. The tree recognises its own inhabitants chemically, and it creates a fitting living space for them.

> Here, the enormous trunk of the Home-tree split into a webbing of lesser boles, forming an interlocking net of wood around a central open space, before joining together high above to form once more a single tapering trunk that rose skyward for another sixty meters. With vines and plant fibers and animal skins the villagers had closed off sections of the interweaving trunklets to form homes and rooms impervious to the casual rain and wind. For food, the Home-tree offered cauliflorous fruits shaped like gourds, tasting like cranberry… (Foster 1975: 19).

The tree protects, feeds and houses the humans, and the human beings give it their waste and they work to keep their Home-tree free of parasites. Additionally, when huge armies of insects arrive to eat through the tree, Born, his people and the furcots join the fight to save the tree at the cost of many of their own lives. The people, the tree and the furcots are all aspects of the world's green resonance thriving with reciprocal care within one forest system.

Finally, the end of the novel returns to overt vegetal sentience: we witness the burial of a hunter along with his furcot in the giant trees. After having been fed by the trees for their entire lives, their bodies now return to being part of the trees. This burial and transformation means that they 'became something more, something greater. They became a part of the They-Who-Keep matrix-mind, which in turn was only a single lobe of the still greater forest-mind' (Foster 1975: 212).

In *Midworld*, we see overt green-resonance embodied by the trees, the mind of the forest, the furcot companions and the human beings who reciprocate care and so thrive. Foster makes visible what many extractivist cultures tend to ignore: we all depend on vegetal lives and exist within their vegetal resonances. The corporate exploiters in the novel, much like our extractivist corporate cultures today, seek a life-extending, profit-making elixir at all costs, including endangering the very vegetal resonances that enable the possibility of human life on both the planets of Midworld and Earth.

## IV: MARCUS HAMMERSCHMITT'S *TARGET*

The 1998 German science fiction thriller by Marcus Hammerschmitt, *Target*, provides another vision of (alien) plant power but now transformed into horror. Unlike Le Guin's Athshe or Foster's *Midworld*, there is no cooperation between plants and humans but only predatory terror inspired by alien monster plants seeking to eradicate the invading humans in the manner of an immune system fighting disease. The novel takes place on a distant planet on which a huge crater exists, perhaps created by a meteorite. The crater lures visitors even though it is forbidden – dominated by a deep, ocean-like forest that is thriving precisely because there are no human beings there – and it is a dangerous place to visit. While the Earth's vegetal life has been fully destroyed and is now described as lifeless, cosmic explorers have seeded many other planets with earthly trees and vegetation. In their various wars with aliens, the humans have claimed the planet 'Target' as a site for nuclear testing, hitting it repeatedly with massive bombs and radiation. Not surprisingly, the forest might be reactive to human presence even though its site in the crater was supposedly kept as a reserve free from bombs (as if a reserve or park could avoid radiation): 'The forest is not being radiated, bombed, poisoned, burned. The forest is an ecological reserve.'[4] This forest, though, may have also arisen through chance: 'The wildest theory about the crater says that a meteorite hit Target, bringing the building blocks for the forest, and then the forest arose, grew, and blossomed. A second meteorite fell in the middle of the forest' creating the

4 Marcus Hammerschmidt, *Target* Kindle Edition, 1998, p. 140; all translations from the German are mine.

crater (Hammerschmitt 1998: 158). This mysterious forest-filled crater is like an ocean, as is noted by the narrator: 'It was as if we had dipped into an ocean …' (Hammerschmitt 1998: 170). And around them 'swim' fish-like creatures through the forest air: 'Below us lay a giant jungle, blue-green glimmering … I thought I saw movement among the leaves, silvery glittery sparks … Later I knew: hanging out over the forest I had seen stingrays …' for the first time (Hammerschmitt 1998: 164). The deep forest seemingly composed of many kinds of plants turns out to be a vast, interconnected and composite being into which, or into whose body, the humans dive.

The scientists in this dark tale of threatening vegetation, including the robot narrator, descend into the crater-filled forest-ocean as explorers. Very quickly, however, their diver transport is attacked by plant elements that cause it to lose power and crash to the bottom, killing one of them. They spend the rest of the novel trying to climb all the way back up and out of this plant-ocean, dying one by one by suicide, madness, or fatal wounds inflicted by plants. It is a difficult and futile battle to escape: 'We are alone on this planet, in this forest, that wants to kills us' (Hammerschmitt 1998: 883). Furthermore, the longer they wander through its depths, the more they realise that the forest is somehow sentient, 'The forest can sense your fear. It does something with it; it (he in German) develops a kind of animal out of your fear, if it/he wants. The forest is a computer, a life-machine, a biotechnical deity, a person, a something. It/he is a n-dimensional cellular automaton. The forest is a tree' (Hammerschmitt 1998: 1219). In the end, all the human beings succumb, the last one dying shortly after encountering an alien corpse. Finally, only the robot has survived and is left to tell his tale from atop the crater where he finally manages to arrive, alone, to wait for hundreds of years until his power generator fails. The visiting scientists are doomed when they encounter the forest's adversarial response to their incursion into its depths. No one comes to rescue them because they notified no one that they were descending into its forbidden green depths. Hammerschmitt, Foster and Le Guin depict human beings within the context of powerful vegetal beings, with Hammerschmitt turning plant power into a horror story with no possible reconciliation between plants and humans while Foster reveals green energy as both threatening and yet also the only hope. Le Guin adds in cross-cultural and cross-species communication as an idealised dream. The relevance of *Target* for this study

of plant worlds is that a vision of immersion within vegetal worlds is not always positive. The humans fail completely to survive and only their technological being, the narrator-robot, continues to explain the story, alone forever. Only our technology survives but in a sad, doomed form.

## V. CONCLUSION: PLANT WORLDS

The three novels feature, in sum, forest worlds ranging from Le Guin's comfortable, protective home, to Foster's dangerous but sentient zones of green that preserve those who collaborate and destroy those who exploit, to Hammerschmitt's horror world where plants reject humans altogether. If Le Guin presents communication and collaboration (cross-cultural, cross-species) as a saving force, and Foster presents full-blown dependence on plants where knowledge and emotion connection of 'emfoling' are the only means of survival, Hammerschmitt presents the foolishness and destructiveness of human beings encountering an alien plant world with no means of success. Treating a planet as merely a nuclear testing site and treating a forest-filled crater as special while it exists within this radiated world presents a harsh critique of human beings who immerse themselves into a forest as if they were merely visitors and not a part of the system. Living in plant worlds is tricky, but not acknowledging our immersion within the green systems appears particularly problematic in these three science fiction texts. Stories of alien planets provide us with thought experiments for navigating both the obvious and startling connections to plant life that we actually have on Earth. A view from outside is helpful for rethinking our assumptions of control and returning to our own green-and oxygen-dominated world with a renewed understanding of where we actually exist: within the plant worlds.

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