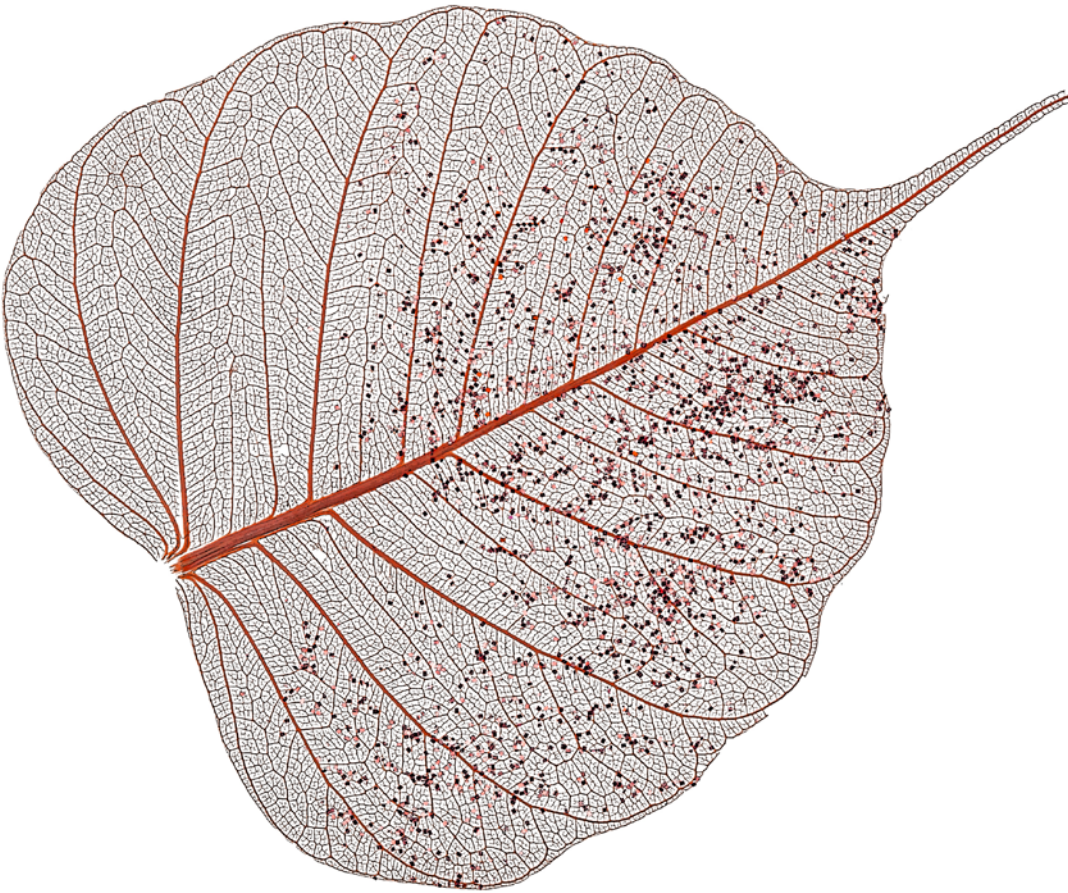


On Being Called by Plants: Phytopoetics and the Phytosphere

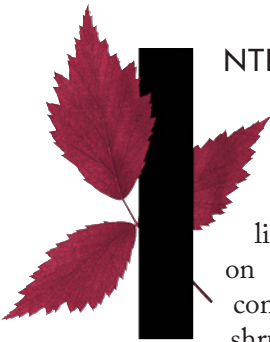


ABSTRACT

This article brings the emerging ecohumanistic idea of ‘phytopoetics’ into dialogue with the established scientific concept of the ‘phytosphere’ to understand poetry concerning human-flora interdependencies. Developing a phytospheric framework, I analyse poetry of the root-soil interface (rhizosphere), leaves (phyllosphere) and plants’ interior domain (endosphere). Countering a view of flora as passive, phytospherically contoured poetry foregrounds the agencies of plants within their multifaceted spheres of relation. I ground the article’s theoretical assertions in an examination of the rhizospheric poetics of Louise Glück and Brenda Hillman; phyllospheric poetics of Ted Hughes and Kathy Jetñil-Kijiner; and endospheric poetics of Michael McClure and the Microcosmos project. In addition to its ecological function, the phytosphere is a nexus of language propagation and catalyst of identification with vegetal life. Shaped by phytospheric delineations, contemporary phytopoems particularise plants, liberating vegetal life from the backdrop of consciousness and enabling the human to be called by plants in their own voices.

KEYWORDS

botanical sapience, endosphere, phyllosphere, phytosphere, plant poetics, rhizosphere



INTRODUCTION: PLANT POETICS AND THE PHYTOSPHERE

The world’s literary traditions feature a diversity of poems elucidating the spiritual, aesthetic, moral, political and ecological importance of plant life. Focused on floristic lives, ecopoems of this kind consider the complexities of forests, grasslands, mangroves, trees, shrubs, bushes, vines, flowers, herbs and other botanical forms. As a case in point, nineteenth-century American poet William Cullen Bryant’s lyrical ‘To the Fringed Gentian’ evokes the wetland species in celestial terms as ‘Blue—blue—as if the sky let fall / A flower from its cerulean wall’ (2006 [1829]: 73, ll. 15–16). Contrastingly, twentieth-century British poet Ted Hughes’ thistles push determinedly skyward as they ‘spike the summer air / Or crackle open under a blue-black pressure’ (1973: 55, ll. 2–3). Hughes’ tactile imagery evinces the thistle’s vibrant material presence – its distinctive prickly foliage and multihued flower bracts. The intensification of Anthropocene

precarities (Tsing 2021), however, has provoked a marked shift in plant-focused poetry away from concerns of symbolism, aesthetics, morality and knowledge towards the urgencies of species survival in the face of cataclysmic environmental change. Yet, parallel to these pernicious threats lies a burgeoning body of research into plants' sentient capacities (Segundo-Ortín and Calvo 2022). As studies in the nascent field of vegetal cognition demonstrate, plants are not merely the inert, motionless objects of scientific deliberation but, on the contrary, exert their own percipient faculties to cope with environmental contingencies and maintain ecological interdependencies. Inherently polylingual, for instance, plants orchestrate electrical, acoustic and chemical signals to communicate within and across species (Gagliano, Ryan and Vieira 2017: 3–100).

In this context, phytopoetic theory foregrounds plant agency as a means to overturn longstanding denigrative perceptions of vegetal life (Jacobs 2019; Ryan 2020, 2023). The concept of 'phytopoetics' coalesces around three pillars: poetry, poiesis and praxis. As a botanically inflected ecopoetics, phytopoetics calls attention to creative productions that focus on the botanical realm, the lives of plants, human–fauna–flora interrelations and factors endangering botanical futures. Not delimited to literary texts, though, phytopoetics additionally signifies social, cultural, psychological and metaphysical praxes that attempt to integrate modes of existence specific to plants. Heterogeneous phytopoetic enactments, therefore, aim to work collaboratively with the wisdom of botanical life – or what I call 'botanical sapience'. In this sense, phytopoetics places emphasis on the potential for human becoming to entrain to the 'poiesis' – the dynamic transformation – of vegetal beings over time, across seasons and in places. Phytopoetics, accordingly, heralds a movement from the representational (in which language depicts a plant-object in the world and risks reinscribing human–botanical binaries) to the intermediational (in which language and communication, broadly construed, come to constitute a vibrant medium of interchange between sapient subjects). Rather than inert objects to be overwritten by the human hand and mind, plants thus contribute actively and integrally to diverse literary, cultural, social, political and intellectual domains (Ryan 2023).

The phytopoetic framework, consequently, recognises the basis of poetry, poetic thought and creative making in 'poiesis' – in concepts of becoming, bringing-forth, emerging and actualising (Ryan 2023). In

this regard, phytopoems function in manifold ways with respect to plant life, botanical justice and human-flora entwinements. Some phytopoems narrativise ancestral epistemologies of plants lying at the periphery of the dominant scientific paradigm (Neidjie 1989) whereas others integrate the technical language of botany exemplified by Linnaean hierarchies of families, genera and species (Costello 2021). What is more, some phytopoems experiment with speaking modes in which poet-narrators address plant-personae and, conversely, in which plants, as communicative subjects in themselves, speak back to their audiences in the first-(vegetal)person voice (Glück 1992, Murray 1992, Oswald 2009). Located within the phytopoetic ambit, as well, are writings that engender language-flora correspondences where poetic typography, for instance, evokes the embodied presence of living plants in particular habitats (McClure 1959, Glazier 2022). Beyond the narrow conception of phytopoetics as limited to poetry on the page, diverse modalities of plant-centric praxis such as art and performances synchronise human imagination and botanical sapience.

PARTICULARISING PLANTS AND POETRY PHYTOSPHERICALLY

Since the term's origins in the mid-twentieth century, ecologists have conceptualised the phytosphere in a variety of ways (Larcher 2003; Saito, Ikeda, Ezura and Minamisawa 2007; Svoboda 1989; van Elsas, Turner and Bailey 2003; Yang, Chen, Wang and Dai 2013). For Canadian arctic botanist Josef Svoboda (1989: 107), the phytosphere comprises the planet's vegetation as a whole in dynamic relation to the lithosphere (rocks), zoosphere (animals), homosphere (humans) and related ecological spheres. Svoboda foregrounds the effects of terrestrial plant emergence on the Earth's climate. Between 3.2 and 3.5 billion years ago, the advent of photosynthesis allowed plants to populate oceans and continents. To maximise nutrient production from light, terrestrial flora developed leaves, stems, branches, trunks and other prominent anatomies (Blankenship 2010). Then, approximately 400–500 million years ago, non-vascular land plants, comparable to mosses, drastically depleted atmospheric carbon dioxide, thus acquiring carbon and emitting oxygen (Svoboda 1989: 110). Prior to the appearance of terrestrial flora,

high atmospheric carbon dioxide ensured stable climatic conditions. Since then, however, fluctuations between warmer and colder periods have facilitated the evolution of complex life forms including terrestrial animals (Kalderon-Asael et al. 2021). The zoosphere and homosphere, therefore, have developed within the contours of the phytosphere. In this respect, Svoboda (1989) asserts that ‘in this unique function of a food base and keeper of the oxidizing atmosphere *rests* the ultimate value of the Phytosphere in the hierarchy of identifiable physical realities’ (111, italics and capitalisation original). Whereas Svoboda adopts an evolutionary stance on the phytosphere, Walter Larcher (2003: 10) conceptualises the term more broadly as a plant’s immediate surroundings in which ecological transactions impact floristic life cycles. For other ecologists, furthermore, the phytosphere specifically comprises the interior and exterior of a plant, thereby forming an integrated microecosystem of aboveground and subterranean structures (Yang et al. 2013: 1).

More granularly understood, the phytosphere is a structurally diverse system comprising the rhizosphere, phyllosphere and endosphere. The rhizosphere is the soil habitat in proximity to the roots of a host plant whereas the phyllosphere is the microbial environment associated principally with foliar surfaces. In contrast, the endosphere is the microbiome within plant tissues (Saito et al. 2007: 94–95). Microbial ecologist Lorenz Hiltner devised the term ‘rhizosphere’ to denote the thin layer of soil serving as the substrate for roots’ communicative secretions (Hartmann, Rothballer and Schmid 2008: 7). Hiltner noted that the microbial composition of the root zone significantly affects plant nutrition by rendering carbon, nitrogen, phosphate and sulfur available (van Elsas, Turner and Bailey 2003: 527). The ‘wooded web’ or ‘wood wide web’ – terms for the rhizosphere often used in popular science writing – catalyses information exchange within populations of plants as well as between plants and animals, insects, fungi, people and other organisms (Gross 2016: R182). In arboreal rhizospheres, for example, subterranean fungal systems known as ‘mycorrhizal networks’ facilitate forest memory. Symbiotic alliances with mycorrhizae supply trees with the energy necessary to activate memory processes that engage ‘the diverse intelligence present among humans and forests’ (Simard 2018: 197).

As illuminated by the case of the rhizosphere, the phytosphere is a nexus of signs operating symphonically to facilitate communication, memory and meaning-making in the more-than-human world. Within the articulations of the semiosphere, the phytosphere emerges as the groundwork of a particularising phytopoetics, or what Patrícia Vieira (2017) theorises as ‘phytographia’. For Jesper Hoffmeyer (1996), the semiosphere directs expression, movement and sensation as well as electrical, chemical and thermal signaling (52–68). Towards consilience between the biological and linguistic, Hoffmeyer (1996) contends that ‘the biosphere must be viewed in the light of the semiosphere rather than the other way around’ (viii)¹. For Hoffmeyer, the biosphere is first and foremost a semiotic terrain where organisms respond discerningly to ecological factors, engendering meaning in relation to neighbouring life forms (Harries-Jones 2016: 194). As a dialogical space, the semiosphere nurtures difference, reciprocity and mutuality (Lotman 2005: 216). Not only an epicentre of microbial activity, therefore, the phytosphere conceptualised in terms of the semiosphere becomes a matrix of mnemonic transmission characterised by ‘diachronic depth’ (Lotman 2005: 216). Consequently, ecosystems can be approached as coordinated semiospheres in perpetual states of information interchange.

‘CONSCIOUSNESS BURIED’: THE RHIZOSPHERIC POETICS OF GLÜCK AND HILLMAN

Phytopoems located in the rhizosphere draw attention, sensoriality and imagination downward into subterranean microecosystems. Critic Christy Wampole (2016: 24) observes that, not merely the material domain of the root, the rhizosphere is a plexus of communication, exchange and reciprocity between heterogeneous life forms. Rhizospheric poems, accordingly, emerge from both tangible and imagined contact with the root-soil interface through acts of planting, composting, tilling and tending. These features are notably salient in Louise Glück’s ‘The Wild Iris’ (1992) and Brenda Hillman’s ‘To Mycorrhizae Under Our Mother’s Garden’ (2022). Whereas Glück’s phytopoem narrates the activities of the poet-gardener from the perspective of a sapient iris, Hillman’s speaker addresses the mycorrhizae of the substrata beneath her mother’s garden. Engendering an ethics of care and cultivation,

practices of embodied participation in the rhizosphere prominently structure the phytopoetics of Glück and Hillman. Their work locates literary consciousness of vegetal life in this typically concealed component of the phytosphere. Through the coordinated extension of the body, intellect, senses, memory and imagination, the human becomes a participant in the subsurface domain where symbiotic interactions between soil, plants and microorganisms dominate.

American writer Louise Glück's titular poem from her markedly phytopoetic collection *The Wild Iris* (1992: 1) endows the common ornamental species with attributes of consciousness and memory. Embedded in the rhizosphere, the narrative directs attention upward to the barren winter garden perceived by the iris from below. Emerging from either bulbs or rhizomes, irises are perennial plants. Glück's immersive experiences in gardening in the New England region of the United States enabled her to become intimately acquainted with the growth cycles of the species (Ryan 2018: 135–62). In their perennialism, irises archive the mnemonic residues of each seasonal senescence and rebirth. Anticipating spring's appearance, Glück's iris exhibits corporeal memory of its interred condition. The lyrical narrator adopts the viewpoint of the subterranean iris apprehending the anemic light of the sun, the frenzied movements of birds in shrubs and the clanging of pine branches in the cold wind. Through heightened spatial awareness of transformations in the aboveground ecosystem, the iris endures, notwithstanding the constraints of its dormancy as a bulb:

It is terrible to survive
as consciousness
buried in the dark earth. (Glück 1992: 1, ll. 8–10)

Glück figures the iris bulb as a locus of cognitive activity. Indeed, stanzas such as this accord with scientific articulations of visual, sonic, spatial and proprioceptive perception in plants (Karbon 2017). Her rhizospheric outlook, moreover, harmonises with Charles and Francis Darwin's (2016) late-nineteenth-century assertion that the root system 'acts like the brain of one of the lower animals', coordinating 'impressions from the sense-organs' (419). The temporal expansiveness of perennial consciousness, however, contrasts acutely to the narrowness of human memory, declared by the iris-speaker's blunt characterisation of the poet-gardener as barren of the ability to recollect transitions

between worlds. The bold assertions of the iris typify the piercing directness of vegetal voice in Glück's phytopoetics.

Like Glück's 'The Wild Iris', American writer Brenda Hillman's phytopoems hybridise poetic and rhizospheric languages. 'To Mycorrhizae Under Our Mother's Garden' (2022) integrates the technical terminology of ectomycorrhizal fungi, hyphal tubes, glomalin proteins and N-rich molecules. Rather than the American New England grounding of Glück's phytopoems, Hillman's poetic voice evokes the botanical character of the American Southwest, specifically southern Arizona where she grew up. A representative member of the region's flora is the prickly pear, a cactus with a symbiotic relationship to arbuscular mycorrhizal fungi that penetrate its roots to bolster the drought tolerance of the host (Lahbouki et al. 2022). Whereas Glück's phytopoem features an iris-persona talking back insolently to the poet-gardener and reader, Hillman's ode addresses the fungal symbionts directly. Poetic imagination, accordingly, descends into the subterranean zone through the orientational clauses 'under her clothesline' and 'beneath feldspar' (Hillman 2023: n.p., ll. 5, 6). Alternating between macroscopic and microscopic standpoints, the speaker envisions the otherwise unfathomable mycorrhizal system subtending her mother's cherished garden:

Nets of roots, fate-kept not-death fungal sheets,
steady there, abiotic mediators, ones toward all.

Crawling now whirred opened cells. (Hillman 2022: n.p., ll. 7–9)

Mutuality between psyche, garden and rhizosphere crystallises in allusions to the intertwined moods of fungi, molds and mother. The near-homonymic resonances of 'mold' and 'mood' position the phytospheric nexus sonically as a locus of healing – as a refuge for mending moods. Through biolinguistic figurations such as '[a]mpersands of storage compounds' and 'micro-essays / of endomycorrhizal' (ll. 18, 19), Hillman's phytopoetics demonstrates the rhizospheric sculpting of language—or what might be called the 'rhizospherisation of poetry'. Yet, while predominantly entrained to the rhizosphere, the lyrical narrator also summons the 'stomata, pores in leaves' of the phyllosphere, the subject of the next section (n.p.: l. 11).

'UNFURLING A GESTURE': THE PHYLLOSHERIC POETICS OF HUGHES AND JETÑIL-KIJINER

Phytopoems of the phyllosphere focus principally on leaves, leaf-habitat interactions and the cultural valences of foliage. Plants' leaf surfaces are unique microbiomes consisting of the phylloplane, the outer topography and the phyllotelma or exterior waterscape (Leveau 2019). Inhabited by bacteria, yeast, fungi, protists, algae and other microorganisms, the phyllosphere represents 'the above-ground homolog of the rhizosphere' (Lemanceau et al. 2017: 116). As a plant-microbe-habitat conjunction, the phyllosphere moulds resident microbial communities actively through the constant modification of its anatomical and chemical configuration. Recruiting phyllospheric microorganisms necessitates a communication network that the host plant can either disrupt or enhance strategically (Lemanceau 2017: 121). Mediated by molecular signaling, the network formed by the plant and allied creatures is known as a 'holobiont' (122). Composed in a phenomenological mode, phyllospheric poetry tends to emerge from intensive meditative observation of foliar transformation over time (Goethe 2009). These assertions manifest poetically in the vegetal subjects of Ted Hughes' 'Fern' (1973) and Kathy Jetñil-Kijiner's 'Basket' (2017: 4–5, 80–81). Notwithstanding their marked cultural and historical differences, the poetries of Hughes and Jetñil-Kijiner reflect a common interest in exploring the phyllosphere as a plexus of communication, expression, musicality, nourishment, healing and identity. In Jetñil-Kijiner's poems, furthermore, the narrator's tactile participation in the phyllosphere counters the detached aesthetic perception of foliage at a distance.

British poet Ted Hughes' 'Fern' (1973) opens with the immanence of phyllospheric encounter: 'Here is the fern's frond' (67: l. 1). Rather than conflating the plant with its foliage through the alternate phrasing 'fern frond', Hughes' choice of the possessive construction – 'fern's frond' – acknowledges the leaf as one organ among a multitude. As the dominant organ in ferns, fronds consist of a fiddlehead, or furled bud, and aerophore lines, or aerial roots for gaseous exchange (Vasco, Moran and Ambrose 2013: 5). Bearing neither seeds nor flowers and, instead, reproducing through spores, ferns require a specialised lexicon for botanists to differentiate their foliar anatomy from other vascular species. Not only photosynthetically active, fronds propagate the fern

vegetatively, disperse spores and nurture nitrogen-fixing bacteria (Vasco, Moran and Ambrose 2013: 4). Hughes' phytopoem evokes the frond actively as 'unfurling a gesture', a figuration connoting the phyllosphere's inherently communicative nature on the margins of the human's audible spectrum (67: l. 1). The alliteration of 'f's in the first line – 'fern's frond, unfurling' – reinforces the correlation between po(i)etic, or transformative, language and the plant's corporeal presence. Foregrounding plants' diverse gestural capacities as relatively sessile organisms, Hughes likens the fern to 'a conductor whose music will now be pause' (67: l. 2). Attuned to the plant's non-auditory expression, 'the whole earth dances gravely' (67: l. 4). Vegetal silence – the language of plants in the absence of speech – hence inspires earthly choreographies. Later in the poem, the fern also dances 'gravely' like a warrior returning to his kingdom, a simile implying the plant's autochthonous belonging. At the same time, the fern's inspirited movement invokes European folklore concerning the power of fern seed to confer invisibility, a belief dramatised, for instance, by Shakespeare and Ben Jonson. Consequently, Hughes' fern is an ancestral literary subject rendered kindred in the po(i)etic present.

In Hughes' phytopoetics, embodied interaction with the phyllosphere precludes the possibility of detached observation of flora. Comparably, Kathy Jetn̄il-Kijiner's concrete poems – both entitled 'Basket' (2017) – centre on the Marshallese tradition of intimate sensory encounter with the phyllosphere through tactile practices of basket weaving (4–5, 80–81). Corporealising the matrilineality of Marshallese society, the term *iep jältok* signifies 'a basket whose opening is facing the speaker' (Jetn̄il-Kijiner 2017: n.p.). The poem employs second-person address in referring to Marshallese women as well as to:

dried
strips of
leaves. (Jetn̄il-Kijiner 2017: 4)

As a polysemous signifier, Jetn̄il-Kijiner's 'you' implies the interdependencies between leaves and weavers. Marshallese artisans use plants such as pandanus (*bōb*), basket grass (*wūjooj-in-ep*) and beach grass (*wūjooj kakkūmkūm*) to produce mats, baskets and other textiles (Merlin 2023). Signifying sustenance, fecundity, munificence and memory, the poems' oval mise-en-page summons *iep jältok* as a botanical presence po(i)etically shaped by weavers' hands. In the second 'Basket', however,

the imperialist appropriation of the Marshall Islands promulgates the exploitation of women, land, sea and flora. The friction between proliferation and desecration concretises visually in the basket's elongated form where the more pronounced spacing between words implies the weakening of *iep jāltok* as a cultural vessel. A prominent sense of resilience, nonetheless, materialises in both poems through nourishing gestures of swelling, offering and keeping that are set in sharp distinction to defiling colonialist behaviours of scraping, dumping and littering. Affirming the value of tactile interaction with the phyllosphere, the baskets and their constituent plants enhance the recuperation of Marshallese identity. The rejuvenation of phyllospheric cultural traditions, indeed, depends on the revival of weaving practices in tandem with broader biocultural conservation strategies (Hiraishi 2018). Consequently, the phytopoetics of Jetn̄il-Kijiner and Hughes illuminates the process of perceptual extension into the phyllosphere engendering contact and dialogue between plants and people while recognising ontological divergences. Practices of becoming familiar – and familial – are comparably central to endospheric poetry, the focus of the next section.

'WHEN THE FOREST MOVES ABOUT ONE': THE ENDOSPHERIC POETICS OF MCCLURE AND *MICROCOSMS*

In contrast to rhizospheric poetry of the root-soil interface and phyllospheric poetry of the leaves, endospheric poetry directs the human sensorium to the interior of plants. The endosphere is a site of micro-organismic transactions as well as plant communication via chemical compounds, electrical signals, and other means. From an ecological perspective, the endosphere supplies an internal habitat for bacteria, fungi, yeast and other microorganisms known as endophytes that colonise plant tissues while minimising harm to their hosts (Compant et al. 2021: 1812–13). To be certain, transactions between plants and endophytes confer benefits to both (van Overbeek and Kari Saikkonen 2016: 231). Co-evolving with their hosts, microorganisms regulate vital processes such as photosynthesis, transpiration, stomatal control, nutrient uptake, osmoregulation and stress adaptation (Rho and Kim 2017, Sarkar et al. 2021). Communication between endophytic colonies and the host, moreover, increases the production of secondary metabolites

coordinating plants' interactions with other organisms (Khare, Mishra and Arora 2018: 7). Examples of endospheric poetry include Michael McClure's 'Point Lobos: Animism' (1959) and the non-textual, collaborative and transdisciplinary project *Microcosms* by Jill Pflugheber and Steven F. White (2023). Positioned within the endosphere, the poetry of McClure evokes vegetal interiorities. Although a work of endospheric visualisation rather than poetry per se, *Microcosms* forges an optical language for generating engrossing depictions of the innermost topographies of sacred flora.

American poet Michael McClure's 'Point Lobos: Animism' (1959: 4–5) oscillates fluidly between plants' endosphere and its external environment. McClure foregrounds the collective voice of plants experienced as a felt presence animating place. Drifting between the microscopic inner and the macroscopic outer – between the endosphere and the biosphere – the poem simultaneously tracks between the possibility and impossibility of sacramental union with flora. McClure's visceral phytopoetics co-implicates human and botanical physiologies as the poetic self recollects kneeling by a salt pool, awakening to the 'soul like a clambering / Water vascular system' (4: ll. 26–27). The term 'vascular' here interinvolves the human circulatory system with the xylem and phloem tissues transporting water and nutrients in land plants. At the same time, McClure's endospheric diction evokes the vegetal soul as an expression of the internal poiesis of vegetal life. The inner-outer dyad, however, reverses as the narrator declaims the impracticality of speaking of lupines and tulips after one witnesses the magnitude of:

His name

Spelled by the mold on the stumps

When the forest moves about one. (McClure 1959: 5, ll. 38–40)

In other words, in the contact zone between human and more-than-human bodies, the conventions of signification break down. As the forest engulfs the narrator, particular plants (lupines, tulips) meld into the vegetal whole (ecosystem, forest). Instead of the human extending into the endosphere, the botanical collective internalises the human – 'the forest moves about one'. The exclamatory line 'Light. Light! Light!' then calls urgent attention to photosynthesis as the outcome of multitudinous beings in transformative interchange (McClure 1959: 5, l. 42). Endospheric in emphasis, 'Point Lobos: Animism' is also

macroecological in its attention to the intricate relationalities between place, people, plants and other beings. As comparably legible in Glück's 'The Wild Iris', subjectivity in McClure's phytopoem becomes destabilised as bodies, minds, sensorialities and languages intertwine.

In a comparable vein, biologist Jill Pflugheber and literary scholar Steven F. White's web-based project *Microcosms: A Homage to Sacred Plants of the Americas* (2023) visualises the endosphere normally excluded from the human purview. At the conjunction of plants, art and consciousness, the project aims to heighten public appreciation of sacred species through the development of an innovative technological process. To generate endospheric visualisations, the researchers employed confocal microscopy – short for confocal laser scanning microscopy – an optical technique for the three-dimensional imaging of plant interiority. The confocal method produced vivid depictions comparable to multi-coloured works of abstract art. *Microcosms* navigates the inner worlds of more than seventy species regarded as sacred by Indigenous cultural groups of North and South America. One plant featured in the project is sweetgrass (*Hierochloa odorata*), known as *Óhonte Wenseraákon* in the Mohawk (*Kanien'keha*) language and *Wicko'bimucko'si* among Chippewa people. Native North Americans use sweetgrass for basketry, healing, smudging and myriad other purposes (Kimmerer 2015). A confocal representation of the species features organic purple forms suspended over the plant's green interior topography. Towards an endospheric poetics, *Microcosms* elucidates the vital importance of sacred flora as well as Indigenous people's enduring relationships to ceremonial plants. Engendering consilience between diverse forms of knowledge, the project merges technical and scientific spheres with their poetic and spiritual counterparts. The inclusion of the term 'homage' in the project subtitle, furthermore, signifies respectful acknowledgement of kinship with the plants with whom humankind participates in symbiotic exchange at every moment of consciousness. As a non-textual example of creative engagement with the endosphere, *Microcosms* reinforces this article's earlier assertion that phytopoetics should include poetry on the page in addition to heterogeneous creative makings imbricated with vegetal poiesis.

CONCLUSION: ON BEING CALLED BY PLANTS

I have argued that poetry of the rhizosphere, phyllosphere and endosphere illuminates plants' responsive, expressive and percipient capacities as agents. Phytopoetics encourages us to refuse and rethink the backgrounding, denigration and fetishisation of plant life. Through concerted attention to heterogeneous spheres of botanical being, the phytopoetic framework offers perceptual and linguistic resources for rendering plants identifiable to human perception while preserving their incontrovertible differences. The floristically focused poetry of Glück, Hillman, Hughes, Jetn̄il-Kijiner, McClure and *Microcosms* exemplifies the widening of the botanical imagination and transforming of dominant narratives of life on Earth in response to the precarities of the present including threats to botanical futures. Preserving vegetal alterities within processes of meaning-making, phytopoetics both familiarises and defamiliarises us with botanical life, summoning us into plants' particular domains – the root-soil interface of the rhizosphere, the foliar topography of the phyllosphere and the internal terrain of the endosphere. This felt experience of being called to take part in the variegated material and sensorial worlds of plants can provoke us to challenge the predominant social construction of plants as passive beings devoid of communication, behaviour, learning, sensing, memory and other faculties associated with intelligence. If poetry is the poietic, or transformative, process of bringing the human subject back into the world's fold – of being interpellated by earthly things – then phytopoetics signifies our being summoned by plants. As we participate critically and corporeally in their multidimensional transactions with other creatures, we come to realise that plants embody adaptive resilience and express the wisdom of more-than-human life. Inspired by botanical sapience – by the wisdom of flora as individuals and collectives – we must consider plants, human-vegetal relations and phytospheric poiesis in order to enhance the long-term wellbeing of ourselves and others.

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