Plant listening
How North American herbalists learn to pay attention to plants

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1. Elsewhere, I have addressed the ways that herbalists mobilize the concept and practice of ‘plant time’ to cultivate an embodied connection with medicinal plants (Boke 2016).

2. A divide produced in the long aftermath of the European Enlightenment, and propagated through the subsequent violent colonial and imperialist expansion of its tenets across the planet. Observations about the impact of an imagined separation between humans and ‘nature’ or environments have now made their way into mainstream media via articles about ‘forest bathing’, notable also in the increasing numbers of primary care practitioners prescribing time in nature, walks outdoors and so on (see e.g. Aubrey 2017; Li 2018; www.nature-rx.org 2015).

3. I recognise the plural forms of Indigenous knowledge. Throughout the text, the phrase Indigenous knowledge always intends to indicate that plurality.


5. See e.g. Bennett (2006) for a medico-botanical perspective on the inefficacy of the doctrine as an a priori tool for knowledge.

6. The American Eclectic physicians of the 19th century preferred to find remedies that worked to support a patient’s specific vitality or health rather than administering the same cure-alls for each patient.

What kinds of relationships enable plants to become medicines? Can humans communicate with plants – and if so, how? This article offers a partial response to these questions by drawing on my research with Western herbalists (as they call themselves) in the rural northeast of the United States. The research was undertaken at a school of clinical herbalism which I will call ‘The Center’, where the pedagogical practices of herbalists rely on cultivating attention to and attitudes of responsibility towards plants. I focus here on pedagogical practices that use ‘the doctrine of signatures’ as a framework for how herbalists learn to pay bodily attention to plants.1

As I will demonstrate, herbalists attune their bodies to the outward manifestations of medicinal plants through a variety of learning experiences and learn to sense the kind of power, capacity and agency plants may hold. I argue that the pedagogical modes that these herbalists use to help their students attend to plant lives can teach us how to attend broadly to cross-species difference.

The ways that herbalists know how to attend to and thereby enable communicative relationships of different sorts with plants have several sets of implications. I highlight two in particular here: first, implications for how humans understand the scope of human life and its interconnectedness with other kinds of life on this planet; second, implications for cross-disciplinary multispecies studies, as herbalist practices open up a more vibrant set of possibilities for what we might mean when we talk about connection, communication and relationship between humans and other-than-humans. In brief, the broader context of this cross-species attention lies in the question of how humans and other creatures can learn to mutually thrive in what Eduardo Viveiros de Castro might call ‘multinatural communities’ in a time of ecological disruption on a damaged planet.

The doctrine of signatures is a teaching tool that The Center uses to lead students through a process of attuning their senses to particular elements of the world – to plant lives, their environments and various human bodily experiences with plants and their preparations. Taste, smell, vision – ‘organoleptics’ – and the sense of touch – ‘haptics’ – help herbalists construct personal, sensate, bodily attentunements to particular medicinal plants. Students learn to attend ever more finely to the details of plants and plant worlds by engaging their own bodily experiences with living plants, or with teas and tinctures made from medicinal plants. As those experiences build on one another and as the students’ daily contact with plant materials and living plants increases, individual students develop their own attunement to particular plants, practices and needs. In this process they construct an ‘affective scaffolding’ (to use anthropologist of science, Rachel Prentice’s felicitous term) that will lead them towards an understanding of plant capacities and human bodily health as inextricably ‘ecological’ (Prentice 2013).

In order to analyze the doctrine of signatures as a teaching tool for connecting herbalists’ bodily experiences of plants in the world to the practice of botanical medicine, I build on Prentice’s acknowledgement that education and training are as much about educating the affect of the individual into appropriate contextualization as about tuning bodily attention to difference. If affect is ‘presubjective without being pre-social’, as William Mazzarella suggests (2009: 291), intentionally practising to develop a sensory attunement to plants plays a key role in crafting that scaffolding for herbalists (Mazzarella 2009; see also Massumi 2002). Such an attunement positions plants as agentic and capable of communication; herbalists attempt to mitigate the species divide by opening up their understanding of what plants are capable of.

I consider the efforts of Western herbalists to communicate with plants in the context of Natasha Myers’ suggestion that humans may become ‘plantalyzed’ in their relations with plants as much as or more than they may ‘anthropomorphize’ plantbeing (Myers 2015; see also Hurstak & Myers 2012), and with Eduardo Kohn’s admonition that one must pay attention to the various ‘modalities of communication’ that emerge across species (Kohn 2013). Herbalists at The Center attempt to ‘open’ themselves up ‘to others’, as Myers might put it, in the process of learning how to work with medicinal plants. Working with plants as communicative others matters for their understanding of health as a process which is always already entangling human bodies, environments and other-than-humans. These practices are responses to contemporary social realities – in particular, a heuristic divide between humans and nature, but also systemic racism, classism and colonialist thinking – that they identify as lying at the core of many ailments in the United States.2 Herbalist interventions matter because they work with plants to address such ‘cultural sicknesses’ as manifested in individual bodies. Below, I describe the ways in which herbalist teachers frame and teach the specific kinds of ‘entanglements’ (Nading 2014) among human bodies, medicinal plants and their environments.

Plants, medicine and anthropology

Scholarly examination of indigenous knowledge3 and cosmologies from across so-called North and South America, as presented by scholars like Eduardo Vieireivos de Castro (1992, 2014), Marisol de la Cadena (2015), Zoe Todd (2017) and Wendy Makoress Genius (2009), have continued anthropological conversations about the nature of communication and relations between humans and other-than-humans. These explorations grow out of a long anthropological tradition of thinking critically about the social connections afforded between humans and other beings, practices and places. Claude Levi-Strauss’ seminal rethinking of the relation between ‘the mythical’ and ‘the social’, described how humans can relate seriously to other-than-human powers and beings (Levi-Strauss 1962). However, for many scholars following Levi-Strauss’ particular structuralist lineage, analysis of ritual and communicative acts attempted with other-than-human beings (like spirits, plants, animal totems, etc.) has focused on the ways that humans take up the spectre of other-than-human beings in order to reproduce ‘strictly human’ social relations. Later researchers have found that there is more to these processes than social reproduction: Stacey Langwick’s examination of the role that communication with spirits in Tanzania plays in healers’ work on maladies demonstrates the potential for such beings to not only communicate and affect human worlds, but to have their own sets of needs, desires and modalities of being (Langwick 2007, 2011; see also Parkin 1991; Rasmussen 2006). P. Wenzel Geissler and Ruth Prince’s argument for ‘the importance of substantial relatedness for medicinal capacity and effects’ (2012: 190) suggests that such relatedness of substance means that human connections with plants extend beyond mere usage into the
realm of what Viveiros de Castro might call the experiential 'metaphysics of the other' (Viveiros de Castro 2014). North American herbalists would agree that healing is not coterminal with acts or with substances alone, but rather with the relations and connections enabled and marked by them. Of course, what those relationships look like and how they are facilitated by different modes of communication with other-than-humans manifests differently in different places.

Herbalists attend to the ways that the lives of plants cycle and reproduce at different rates – and obviously in different ways – from humans. Individual plants move through a multitude of forms over the course of a solar year; communities of plants generate, die off and perhaps regenerate over diverse time periods. It is in part due to the cyclical nature of the life of many individual plants – the herbaceous ones at least – that herbalists heed the forms and time frames of plants together, learning to ‘sense into’ a plant’s world through those avenues. For Western herbalists in North America, a plant can be a medicine even before it has been laboured over to create a different substance – plants in their living forms can offer medicines by way of relationship. It is from this stance that Western herbalists at The Center teach the doctrine of signatures. Herbalists learn about the doctrine of signatures both as a historical method of working with medicinal plants and also as a contemporary mode of learning the signing bodies of plants through their forms, structures, habits and habitats.

Elizabeth Hsu and Tatiana Chudakova have suggested separately that 'herbal medicines' should be recognized as cultural artefacts emerging from culturally grounded labour. As a set of knowledge forms, the history and practice of the doctrine of signatures emerges from European and settler-colonist North American traditional medicines as a situated kind of medical knowledge (on situated knowledge, see Haraway 1988). Grounded in medieval Christian mysticism and reclaimed in the late 20th century as a (relatively) secular herbalist practice of reading plant bodies and their landscapes, it offers us a chance to think once again through the raw materiality of the plant-human encounter.

I am less concerned here with the ways that the doctrine of signatures has helped herbalists determine the medicinal uses of plants – teachers routinely frame the doctrine of signatures as problematic when used as a primary way of identifying plants (as in earlier centuries in Europe and settler-colonist North America) nor as a way to produce provable, reproducible, generalizable truths. At The Center, the doctrine of signatures is used as a mode of knowledge that involves cultivating an attentive, friendly relation between herbalist and plant – not as a primary way of determining the medicinal capacities of plants (as in earlier centuries in Europe and post-colonization in North America) nor as a way to produce provable, reproducible, generalizable truths.

Rooted in a European vitalist tradition of observation, teachers use the concepts of vital energy (or vitality) and spirit when discussing the general ontological proposition that plants are more than mere objects for human use. The course ‘observation, intuition and intention’ introduces students to the doctrine of signatures and helps them to cultivate individual relationships with plants, learning how and what they can sense about a plant’s vital energies through their own bodies. Starting with the plant’s shape and location in particular ecosystems, students use the doctrine of signatures to explore a plant’s mode of animacy, as well as form, within Western herbal medicine.

The doctrine of signatures

Let me describe briefly how the doctrine of signatures as a form of knowledge emergent from European medical
thinking became one aspect of a contemporary model for working with medicinal plants in Western herbalism. The origins of the doctrine of signatures lie in Christian understandings of the world as a place enlivened by the touch of God, where elements like medicinal plants have been put in place for human use. The concept of ‘signatures’ as written into nature for the good of humans is rooted in the idea of a ‘creator’ of those signatures – a single, Christian god. That same Christian god that mystics like Hildegard von Bingen and Julian of Norwich (von Bingen 1998; Watson & Jenkins 2006) cite as a force that enlivens the world also inspired Jakob Boehme, a Christian mystic living in Germany in the late 16th to early 17th century, to write the following in his treatise The signature of all things:

4. Thus every Thing which is generated out of the internal has its Signature; the superior Form, which is chief in the Spirit of the Working in the Power, does most especially sign the Body, and the other Forms hang to it; as it is to be seen in all living Creatures, in the Shape and Form of the Body, and in the Behaviour and Department, also in the Sound, Voice, and Speech; and likewise in Trees and Herbs, in Stones and Metals; all according as the Wrestling is in the Power of the Spirit, so is the Figure of the Body represented, and so likewise is its Will, so long as it so boils in the Life-Spirit. (Boehme 1651)

For Boehme, there is no living thing that does not already exhibit external symptoms of its internal state – thanks to the Spirit of the Working in the Power. The ‘Body’ and other ‘Forms’ carry signatures, as they are things with an interior and thus can have an exterior which mimics or suggests the state of their interior. In order for the ‘interior’ to be expressed on the exterior as form, shape or sound, the interior must be some kind of spirit, essence or self-ness which has the capacity to express itself – or can be made known by some external actor, like a god.

Boehme outlined such ‘signatures’ as the ‘Life-Spirit’ of the living ‘Form’ being expressed externally in a plant, a person, a landscape. At the time, this represented something of a departure from previous understandings of how to read human and other-than-human forms, insofar as Boehme’s approach framed the ‘essence’ or ‘spirit’ of the form as vital to its being-in-the-world. In Boehme’s work we can see the influence of the earlier (16th c.) work of Paracelsus, who is cited as a major lineage figure by many contemporary white Western herbalists (Waite 1894). Though practices across the planet during and prior to Boehme’s era held that objects and creatures of all sorts had the ability to act, to be agents in the world and to shape human lives, it was in Paracelsus’ time, and slightly later in Boehme’s era, that ‘signatures’ gained relevance as a descriptor for the fleshy beings of plants, animals and people.

Boehme and Paracelsus agreed with von Bingen and other Christian mystic healers that the other-than-human world contains signs that indicate to humans how to identify and make medicine, though they disagreed on what caused those signs to inhere in various materials. For Boehme those signatures were placed by God, and for von Bingen by the enlivening force of ‘viriditas’. Paracelsus suggested that ‘Nature marks’ the growth of plants ‘according to its curative benefit’, a perspective which he grounded in the idea that the human body is a microcosm of nature broadly (Waite 1894). Paracelsus translated this ‘hermetic’ model into a model for medicine. The implications of this lay in the relationship he identified between human and plant bodily parts: if a part of a plant looked to him like a part of a human body, it might be used to treat an ailment of that part of the human body (see Figs 1 & 2).

At The Center, teachers build in part on a Paracelsian approach to the doctrine of signatures as a mode of describing and interacting with medicinal plants and their landscapes. To work with the efficacies of those plants, they draw on the medical philosophy of Eclectic vitalism practised by American physicians of the 19th century. Eclectic physicians also held that plants, people and animals were in metaphorical and literal correspondence with the world around them; the interiors and exteriors of all beings somehow interconnected. In extending the idea of a capacity for interiority to other-than-humans, they suggested that plants have vital essences or spirits which live ‘inside’ the form of their body, and also that those spirits have the capacity for knowledge, communication and action. Contemporary herbalists build on these engagements with forms, working with contemporary bioscientific knowledge alongside the doctrine of signatures as a way to develop practices for receiving communications from plants.

Learning to see forms
Showed below are two tables herbalists use to teach their students the doctrine of signatures’ basic principle that the ‘Form’ of things (as Boehme put it) can communicate something about its capacities. These tables depict the relationship between a plant’s ecosystem (the conditions under which it grows), energetics (its taste-based qualities – that kind of plant vitality which is detectable by common human senses) and its effect on the body (describing the changes to the human tissue state enabled by the plant). The two columns listed under each ecosystem help the student herbalist to understand what kinds of plant, in which place, might either ‘mimic’ (provide the same effect) or ‘counteract’ (provide an opposite effect) a particular human bodily condition. Claims about bodies and their needs and functions are tangled up here in claims about plant forms, functions and their relational capacity with human bodies (see Fig. 3).

In a temperate rainforest ecosystem, ginseng (Panax quinquefolius) will mimic that ecosystem’s general state (cool and moist) in its effects on the human body – it will cause the human body to feel and be more cool and moist. Demulency essentially means that the plant causes a slippery, slimy effect somewhere in the body – creating sensations of coolness and moisture. A different plant from the same ecosystem – wild ginger – might either ‘mimic’ (provide the same effect) or ‘counteract’ (provide an opposite effect) a particular human bodily condition. Claims about bodies and their needs and functions are tangled up here in claims about plant forms, functions and their relational capacity with human bodies (see Fig. 3).
### Table indicating herbalist conceptions of the effects of plants on the body in relationship to their climates and landscapes.

<table>
<thead>
<tr>
<th>Ocean/Coastal</th>
<th>Temperate Rainforests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energetics</strong></td>
<td><strong>Counteract</strong></td>
</tr>
<tr>
<td>cool/moist</td>
<td>neutral (warm or cold/dry)</td>
</tr>
<tr>
<td></td>
<td>cool/moist</td>
</tr>
<tr>
<td><strong>Plant Examples</strong></td>
<td></td>
</tr>
<tr>
<td>Irish moss; Bladderwrack; Dulse; Kombu; Glasswort; Orache</td>
<td>Sea rocket; Scotch lovage; Seaside goldenrod; Sea lavender; Seacoast angelica; Eyebright; Usnea</td>
</tr>
<tr>
<td>Saw briar root; Solomon’s seal; Ginseng</td>
<td>Wild ginger; Spice bush; Beth root; Wild geranium</td>
</tr>
<tr>
<td><strong>Effect on the Body</strong></td>
<td></td>
</tr>
<tr>
<td>Demulcent; soluble bulk fibre; moistening to tissue; mineralizing; increase water retention; for deficient kidney yin conditions</td>
<td>Stimulating diuretics that decrease fluids and salt levels; stop excess secretions in sinuses, lungs, and bowels</td>
</tr>
<tr>
<td>Demulcent; soothe irritated, inflamed tissue in the bowel, stomach, mucus membranes, and on skin</td>
<td>Counteract damp, boggy conditions; carminative; relieve congestion (head colds, intestines); diaphoretic; astringent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mountains</th>
<th>Plains</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Energetics</strong></td>
<td><strong>Counteract</strong></td>
</tr>
<tr>
<td>cold</td>
<td>hot/warm and dry</td>
</tr>
<tr>
<td></td>
<td>windy</td>
</tr>
<tr>
<td><strong>Plant Examples</strong></td>
<td></td>
</tr>
<tr>
<td>Pulsatilla; Arnica</td>
<td>Coca; Osha; Lomatium; Grindelia; Cow parsnip</td>
</tr>
<tr>
<td>Mormon tea</td>
<td>Echinacea; Monardas; Artemesias; Pleurisy root; Blue vervain; Willow</td>
</tr>
<tr>
<td><strong>Effect on the Body</strong></td>
<td></td>
</tr>
<tr>
<td>Helping to balance extreme conditions of physical or emotional trauma; in excess, such plants are toxic</td>
<td>Increase oxygen levels; antibacterial; antifungal; antiviral</td>
</tr>
<tr>
<td>Decongestant; urinary complaints</td>
<td>Stimulate immune system; move stagnant conditions of body (digestion, sprains, strains, bruises, arthritis, lymph) and mind and spirit; relieve symptoms of flu-like conditions; anodyne; anti-inflammatory</td>
</tr>
</tbody>
</table>

of shape a plant takes, and the conditions of the place it grows, as a way of reading its signature, and its possible effects on an ailing human body.

Here, we return explicitly to the senses as a mode of knowing: in this case, sensations help describe the differences among plants based on vital energetics, leading to an understanding of the plant’s life force, its healing capacities, and the information it may communicate. The chart articulates a way to think of plant energetic signatures as a matter of ‘Behaviour’ in addition to ‘Form’ in Boehme’s terms. Here, behaviour is the plants’ growth patterns and preferred ecological zones. Herbalists learn to attune their students to understand what kinds of sensations are potentially related to plant communications – and how to tune in to them to generate sensate relations with plants before, during, and after their use.

Herbalist attunement occurs in a different way than it might for others who work with plants and environments (e.g. conservationists). When dealing with plants that are deemed ‘invasive’, most herbalists are not as critical of wild mobilities as conservationists are. Herbalists are more interested in the efficacies of plants rather than provenance. If a plant shows up in a place, most herbalists assume there is a good reason for it to be there. Such reasons are cited as either ecological – the plant is filling a niche – or grounded in the needs of other humans and animals. For instance, herbalists connect the rise in populations of Japanese knotweed (Polygonum cuspidatum) directly to the rise in tick populations and infection rates of the tick-borne illness Lyme disease. In fact, Japanese knotweed shares some ‘signatures’ with Lyme: it is difficult to get rid of once it has settled in its niche (the disturbed roadside or the compromised human body, respectively). Partially based on its signature, and partly on assays of its chemistry, many herbalists know Japanese knotweed as a key herbal remedy for people living with Lyme. ‘Invasives’, then, are not inherently bad – herbalists’ attention to plants in and with ecologies works first to determine what a plant’s location communicates about its capacities. When the plant, as an ‘other’, can have interiority, that interiority is conditioned by the assembled relationships it has with its environment. Thus, in considering what kinds of medicinal potentials a plant may have, herbalists notice and develop a more intimate kind of connection – not just with singular plants, but with the webs of relationships which make singular plants possible.

**Communication: On whose terms?**

The narrative practices of teachers at The Center guide students’ *actual experiences* with plants as lively subjects which can both address and be addressed through practices of bodily encounter. Their pedagogical frames help students to understand what kinds of sensations are potentially related to plant communications – and how to tune in to them to generate sensate relations with plants before, and as importantly as, cognitive verbal stimuli.

In the Indigenous worlds of colonized North America, the process of maintaining relations with other-than-

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Fig. 3. Table indicating herbalist conceptions of the effects of plants on the body in relationship to their climates and landscapes.


Viveiros de Castro, E. 1992. 'Spirit'. For herbalists, what is at stake is the ability of plants to intentionally and knowingly exchange information and support. They share Kimermer’s conviction that this exchange of information indicates the ability of plants to relate, and therefore to communicate. Meanwhile, herbalists who learn to pay attention to plant form and environment with multisensory tools like the doctrine of signatures report not only visualizations of the assembled relations that enable the plant’s life – like flows of water, sunlight on leaves, wind through stems, nutrients in dense soil – but also feeling some of those assembled elements of the multiplicity of the plant. Practices that allow potential resonances of plant-human difference to bubble up in the sensory experience of the herbalist’s world facilitate such relations.

Conclusion
I have described here one element of the herbalists’ training: namely, how to attend to plant forms as a sign of their medicinal capacities, and the sensory entailments of that process of attention. The doctrine of signatures, fallible and culturally specific though it may be, offers one way to translate plant communications into terms more readily understood by humans. Teachers’ pedagogical approaches help students to engage with communicative entanglements across human-plant species difference and biological divergence. Even more to the point, this aspect of the herbalists’ training demonstrates a general orientation towards plants as active, lively beings, not passive material for exploitation.

Understanding plants as lively beings with capacities of their own over against their reliance to their exterior, herbalists also draw on observations of material communication and sharing between plants documented by biologists, bringing an eminently vitalist layer to knowledge-making with plants. While Indigenous knowledge influence some understandings of plant-human communication, herbalists at The Center also learn the doctrine of signatures as a (theoretically de-Christianized) European version of reading plant signs. Sensory attention to form and to the assembled, contingent, in-motion nature of plant-human relations, helps herbalists to cultivate response-able connections with plants. Becoming attuned to our own bodily sensations of plants’ bodies and worlds enables herbalists to participate in the formation of what I call assembled anxieties.

None of these pedagogical modalities for learning with plants suggest that plants and people are the same – in fact, it is the vital differences between the capacity of plants to make chemicals using solar power, soil, experience and minerals, and the capacity of humans to move around (among other things), that make ‘medicine’ happen. These vital differences are important, not only for human health and illness, but for the coming together and fading away of connections across the complexity of the world. By attempting to share some aspects of experience, sensation and time with plants, herbalists formulate, practice and embody a different kind of communicative multispecies relationship with their worlds.


