Ethnoecology with Leigh Joseph
Ologies Podcast
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Oh hey, it's your thickest pair of socks that don't fit in your boots, but you have no intention of leaving the house anyway, Alie Ward. Breathe deep, fill your lungs with plant whiffs, and your brain with info because this guest has a bushel of knowledge. You ready? Okay.

This guest has a master's degree in Ethnobotany from the University of Victoria and is just finishing her PhD studying ethnobotany at the Université de Montréal. Her education goes much further back though, as a member of the Squamifsh First Nation. Now, she works with First Nations communities with this focus on traditional knowledge renewal of plant foods and medicines. She's the author of the book *Held by the Land: A Guide to Indigenous Plants for Wellness.* And also founded the skincare company, Skwálwen Botanicals. So, this is what she does and she's amazing.

So, we're about to get into it but first, you may have noticed we had no episode last week, which has only happened once in our seven-year history because I got a double whammy of RSV, a respiratory nasty, and a bonus norovirus. So, that was not pleasant but what was were the Patrons at Patreon.com/Ologies who support the show and send in their questions. You can join for one hot dollar a month, and I love that everyone opened their holiday gifts of *Ologies* merch and tagged us in posts, y'all look fantastic. Also, thanks to everyone who simply rates and reviews the show, which keeps it up in the charts so people can find it. I read every single review, for example, this newly plucked review from Casey_Out_Here, who wrote:

> *This podcast is like waking up to a gentle thunderstorm on a day you don't have to go to work.*

Augh! Casey_Out_There, what a vibe. Thank you! And thanks to anyone who left reviews.

Okay, onto Ethnoecology. *Ethno* is from the Greek meaning nation and *ecology* of course, where things live. And in this episode we'll sit down and chat all about how to identify plants, Latin names, traditional names, how knowledge is passed or silenced, this chilling history that inspired some of the guest's work, uses for barks and berries and saps and teas, pharmaceuticals derived from Indigenous knowledge, ceremonial plants, the dos and absolutely do nots of harvesting, Indigenous perspectives toward plant relations, invasive weeds, skin remedies, and so much more with ethnobotanist, author, entrepreneur, scholar and ethnoecologist, the very soon to be Dr, Leigh Joseph.

Leigh: I'll just also introduce myself in my Squamish language just as a cultural teaching to kind of open up the conversation and ground myself as well. [*speaks in Squamish*] So, I just introduced myself, my English name is Leigh Joseph, my ancestral name is Styawat, and I come from the Squamish First Nation. I'm so happy to be here today with you, my heart is full.

Aside: And if you're unfamiliar with the geography of her ancestral land, the main reserves lie on the shore of an inlet about an hour north of Vancouver, British Columbia in Canada. So, picture a horizon of snow-capped mountains and conifer forests, pebbled coastal beaches with driftwood, and of course, a lot of greenery.

Alie: I'm wondering if you can tell people who don't know what exactly is an ethnobotanist and how did you decide this was the course you wanted to go at from a, like, scholastic and academic way too?

Leigh: Absolutely. Ethnobotany is defined as the study of the cultural interrelationships between people and plants, and I would add into that, place as well. It hasn't always been defined like that, in fact, it has very colonial beginnings starting as a very extractive area of research founded to look at the utilitarian nature of plants, what could be taken from cultural knowledge and then applied in a European context or a non-Indigenous context. So, since this term, ethnobotany, was coined in the late 1800s it really has transformed and changed a lot. That being said, the field of study really is still very much in the early stages of having more Indigenous voices at the table, both in the literature and kind of in the discipline more broadly.

Aside: So, ethnobotany: how humans use and relate to the plants around them. And this has morphed from a, "Hey, how do y'all use this and how can we harvest all of it for our financial gain?" toward, thankfully, more Native voices and expertise.

Leigh: How I found out about this field of study, I went to a free lecture that Dr. Nancy Turner gave at the Vancouver Public Library. And she was talking about her work as a prominent ethnobotanist working across BC and other regions within Canada. And just really sharing a storytelling approach and a relationship-based approach to how she had been working with elders in different communities, you know, over the course of her career. And I remember leaving that talk and feeling like, "Oh my goodness, this is something that I could study." And I really wanted to pursue studying with Nancy Turner. So, I set my, I guess, goals to upgrade all my science courses because I hadn't been a "science student" in high school, and then to apply for a botany undergrad and then work toward doing a master's with Nancy.

Aside: Just a side note, Nancy Turner, absolute boss. She's an ethnobotanist and Emeritus Professor at the University of Victoria. For over five decades, this woman has worked with First Nations specialists and elders to document their traditional knowledge of plants and places. For more on her work, you can see the 2020 volume she edited titled, *Plants, People, and Places: The Roles of Ethnobotany and Ethnoecology in Indigenous Peoples' Land Rights in Canada and Beyond*. But yes, Leigh applied to do a master's with Dr. Turner as her advisor, and folks, I hear this from a lot of ologists whose lives were changed by attending a chance free lecture! So, go to the free talks! Maybe they even have snacks... I don't know, I made that up.

Leigh: And so, this was really exciting for me because I was at a point where I was looking to go back to post-secondary. I'd been working in the outdoor guiding and, kind of, adventure leadership space for a few years, and I realized that really what I loved about that was being outside and I really loved connecting to my natural environment. But I was really wanting to find an area of study where I could incorporate that. Plus, coming from a mixed background of Indigenous and European ancestry, I had always had this conversation within myself about, you know, where do I belong? How do I connect more deeply to my Indigenous heritage and roots? Even though I'd spent a lot of time growing up visiting family and in community, I hadn't lived in Squamish, which was the home territory on my dad's side for our family. And so, yeah, this area of study really felt like a pathway towards those things. But certainly, there's been some, you know, lots of learning and kind of surprises along the way as well.

Alie: When you say surprises, good surprises? Bad surprises?

Leigh: I would say both.

Alie: Okay. [*"I feel you."*]

Leigh: And I can elaborate a little bit. So, some of the good surprises have been just how direct a path plants have really guided me on, in terms of reconnecting with community, finding a deeper purpose for my research. When I had kids, I was really aware that my parent's generation, my

grandparents' generation on my father's side, did not have a chance to really engage in land-based knowledge and experiences because a lot of their time and energy was really dedicated to surviving, you know, as residential school survivors and just many of the aspects there. And so, when I had kids, I really wanted to rebuild the intergenerational transmission of knowledge and give my kids that sense of belonging on the land. And they did that alongside me as I really kind of deepened my own hands-on and experiential learning with plants. So, those were all great.

And then some of the harder surprises, I guess, were as I was going through my undergrad in botany, I absolutely *loved* it. When I got to my upper-level botany courses, I loved the taxonomy courses, I loved learning the Latin names. I was just so excited to be learning about plants. Towards the end of that degree, I received a recording actually from Nancy Turner, who was my master's supervisor, who I had set out to study with. And the recording was from some work she'd done in the seventies in Squamish with elders and it was an audio recording of these elders saying the plant names in the Sḵwx̱wú7mesh sníchim or my Squamish language. [*clip of Sḵwx̱wú7mesh sníchim language plays and eventually fades as Leigh continues speaking*] And it was really incredible. I was so excited, I listened to these tracks over and over and over again and then I noticed a sadness, or a feeling come up of unease.

It took me a while to reflect on what that was, but it was really just again, that sort of feeling of I wanted this language to belong to me and I wanted to belong to this language, but it felt so foreign to me. It was difficult for me to access the different sounds in the language, and I recognized that that was because my parents and my grandparents, they were not language speakers. The reason for that again stems back to the impacts of colonization and the residential school system within my family.

Aside: And a head's up, Leigh unfortunately couldn't obtain those recordings so what you just heard was a sample of Squamish language from the YouTube account Squamish Language.

And just for context, Canada's residential school system began in the late 1800s with 150,000 estimated First Nations children removed from their homes and family to attend Christian-run schools that would supposedly "civilize" them and change their clothing and keep them from learning their native language and way of life. Up to a third of these children may have died and mass graves are still being found. The last residential school in Canada closed in 1997... Not 1897, 1997. They were operating up until the late 1990s.

For more on this, including survivors' testimonies, see the 2015 paper, "Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada." In 2022, Canada's House of Commons finally and unanimously recognized the residential school system as genocide. The victims' and survivors' legacies are recognized on September 30th every year, known as Orange Shirt Day, which was coined from the story of one survivor, Phyllis Jack Webstad's account of having the bright new shirt that was orange, that her grandmother gave to her before she left and it was stripped from her wardrobe and replaced with a uniform and all ties to her real life felt severed. And again, Leigh's family was also impacted by the residential school system.

Leigh: So, that sadness was there at the same time as this excitement about botany and really looking at this path of learning with plants from both a Western science approach, but also a deeply personal and culturally led path as well.

Alie: So, it's interesting that that emotionally impacted you through language at the same time that you like learning the Latin names of things, but also hearing them in the Indigenous language of your ancestors. I know that you write about plants being like relatives, being something we're related

to. Do you feel like you're learning the identity of the same plants from two really different perspectives and different languages from Indigenous versus Western?

Leigh: Absolutely. I think that was something that I really felt, especially in my science undergrad. Within the scientific method and within the botany classes I was taking, or the organic chemistry classes or, you know, there wasn't the space for me to kind of insert myself and my culture and me personally within the content that I was learning, within the papers I was reading, even in the methods of writing that I was learning. Hearing the names spoken really started me off on a different trajectory, I would say, with both my master's research and especially my doctoral research which I'm just completing now.

Aside: For more on her master's work, see her thesis, "Finding our roots: ethnoecological restoration of lhásem (Fritillaria camschatcensis,) an iconic plant food in the Squamish River Estuary, British Columbia" which is about the plant, rice root. Rice root is sometimes called black lily, and it looks like a tiger lily, with narrow leaves and a deep purple, mottled flower that bows to the ground. But while getting that degree, it wasn't all… roses.

Leigh: One of the other, I guess, points of discomfort for me was when I got to my master's, I was pouring through literature, and really, the literature I was drawing on was mostly older ethnographies written by non-Indigenous researchers or ethnographers and I didn't see myself reflected in that. In fact, the language that was utilized to speak about Indigenous people and Indigenous knowledge was really difficult. It was really hard to read and remove my own personal response, you know, emotional response to the racist language, and the stereotypical language embedded in these documents. But also, to see like, oh my gosh, here's an absolute gem of information about root garden cultivation, which was the focus of my master's. This is changing and has changed since then, but I really felt at that point that as an academic, I wanted to be able to contribute to the literature in a way that upcoming Indigenous scholars and students would see and feel themselves reflected.

Alie: Mm-hm. Which is a beautiful legacy. I'm sure that's got to feel really good.

Leigh: Yeah, definitely.

Alie: And when it comes to plants, I don't know if you know this, but there's a lot of them. [*"So, what's that plant called? That plant."*] There's just a lot of plants. [*laughs softly*] And they're in so many places. Can you tell me a little about when you're doing your research, where is the scope for it? How local is local and also, how does one define a native or indigenous plant versus something that's introduced, and it's been around for a while? Where do you even, how do you wrap your brain around it if you're not a plant person? [*"This one... is green."*]

Leigh: Yeah, great questions. So, I would say that it would vary depending on the approach. Ethnobotany is a very interdisciplinary field of study, so people can come at this from varying backgrounds and pathways. I would say that for me, it was really important to understand the basics, some of the things that you would find in a plant field guide, for example. So, where are you going to find this plant growing? What are some of the key identifiers? What is the range of this plant? And then, to add onto that, when it comes to that cultural interaction with a plant, which may involve harvesting part of that, what does sustainable harvesting or cultivation look like?

Aside: So yes. First off: who are you, plant? Where do you like to live? Who knows about you? And how much of you can we use without taking advantage and making you sad? So, one way to start out might be the app Seek by iNaturalist, which lets you log and share encounters with flora and fauna. Or, of course, there's a book called *Held by the Land: A Guide to Indigenous Plants for*

Wellness which was written by someone named Leigh Joseph, with whom I'm doing an episode, presently.

Leigh: You know, I get a lot of people who are interested in planting native plants in their garden, for example, which I think is such an excellent way to get acquainted with plants, to not put pressure on wild native plant populations. And especially if there's a question about the cultural sensitivity of a particular plant, going to a native plant nursery is such a great way to have that conversation about where that plant is sourced, about actually growing that plant in your garden, as opposed to going out into wild spaces to say, forage that plant.

So, native plants as I understand them are plants that occur naturally in a region in which they have evolved over... a long timeframe. Often within ethnobotany, these plants have co-evolved with people so there are in-depth management and cultivation systems of knowledge and practice that go along with those. So, tools like fire, like weeding, like pruning, different methods to really ensure that particular culturally important plant, food, medicine, or material species are really thriving in those managed environments.

For me, I started with a very particular focus on the plants that are considered native plants and culturally important plants within the Squamish territory. As I've worked in other Indigenous communities, that's really a starting point, going to the community and starting that conversation or engaging in that conversation of, what are the plants of interest? Who in the community is already an expert? So that as a researcher, you're not going in and assuming that you're going to be bringing the expertise but instead, you can bring a set of skills and background to support work that's already happening in connection to culturally important plants. Out of the multitude of plants growing in a region, not all plants are considered culturally important. All plants would be considered important in terms of that relational aspect and us being connected to everything in our natural environments, you know, that foundational understanding of how we're all connected.

Aside: So yes, hello plants, all plants. Even the interlopers? Should we be mad at them?

Leigh: There are plants that have originated from elsewhere that have been naturalized in an area. Some examples from Squamish would be broadleaf plantain, for example, has become really integrated into local ethnobotanical knowledge and practices, burdock root. So, there are examples of plants that are considered native but do get invited in, in terms of really valuing their role and the gifts that they carry. [*"Come in please."*]

Alie: For you specifically, when it came down to which plants you were going to really study and focus on, how did you select from so many beautiful, wonderful plants? How did you narrow down which ones you would study more intensely?

Leigh: Right. In my master's, the selection of plant species was really guided by the management practice, in a system called estuary root gardens. So, these root gardens were family owned and managed and were located in estuary environments; where freshwater and ocean water mix and create this brackish water environment that is exposed to tidal influence, that has varying degrees of salinity, and is just a really, really biodiversely-rich area and ecosystem.

Aside: So, remember that deep purplish mottled lily that we mentioned earlier? At its roots is a bulb that looks like you stuck your dirty fingers into a rice cooker and then wadded together a loose lump. That bulb is composed of rice-looking bulblets that are traditionally harvested to leave what's called the grandmother bulb, which is replanted to continue growing. And that involves a respect and foresight that's very un-colonialist.

Leigh: So, estuary root gardens have three main root species that were really intensively cultivated. And so springbank clover is one, Pacific silverweed, and northern rice root. And so, the species

northern rice root in the Squamish language is *lhásem,* and in Latin is *Fritillaria camschatcensis,* and this plant became the focus of my research. The reason for that was really within my community and in early conversations I was asking, who were the plant people in the community who were already carrying this knowledge? What are their priorities in terms of me being both a Squamish Nation member, but also a researcher coming to community? What value can I bring to this interest and desire to connect more deeply to our plant relatives? And this was one plant that kept coming up, *lhásem* or northern rice root.

The interesting thing to me was that the people bringing up this plant had never actually seen it because it's been really highly impacted through just the history of the Squamish Estuary. But this plant had this place in people's memory, you know, remembering grandparents talking about it, being really enamored by the fact that it's an edible bulb plant that has been cultivated because carbohydrates in a traditional diet really were much harder to come by; these root vegetables played a really important role in traditional diet.

Aside: So, that's one reason that Leigh zeroed in on it. According to the 2019 paper, "To Combat Diabetes, Native Peoples Rediscover Traditional Plants: Ethnobotanists partner with Indigenous communities," it reads:

> *In the colonial era, the military deliberately destroyed these root gardens as part of a campaign to subdue Native people. Yet the colonial government insisted that Indigenous people did no farming—a claim that was used to justify seizure of their lands by settlers for cattle pasture and European agriculture.*

So, Leigh's book notes that the northern rice root takes five to seven *years* to germinate from a seed, which is why conservation now is so important. Also, we'll link in the show notes another great episode we have on Indigenous cooking called Indigenous Cuisinology with Indigikitchen's Mariah Gladstone. We also just released a shorter, edited, *Smologies* version which is kid-safe.

But yes, Leigh worked with her community who engaged with her field research and shared valuable history and current context with her as well.

Leigh: Totally. Yeah, it was a huge learning for me as well, which was really wonderful.

Alie: How do you separate what is fieldwork versus what is going on a hike? Are you stopping and looking at every plant? I imagine that must be so fun.

Leigh: [*laughs*] It's so fun, much to the annoyance, sometimes, of my family. [*both laugh*] My kids just call me the Plant Lady [*Alie laughs*] and you know, they have loved, especially when they were little, they would just come out with me, and they'd tootle around while I was picking cottonwood buds or checking up on where different plants were in their seasons. I remember we were in Tla-o-qui-aht territory on the west coast of Vancouver Island, close to the area that's now known as Tofino, and we were on a bog boardwalk, and I was literally crawling along this bog boardwalk [*Alie laughs*] and the kids were like, "We just want to get back to the beach!" [*laughs*] So yeah, I would consider my walks, kind of blurring the lines between fieldwork and family outings.

But no, I mean I absolutely love being connected to the environment, looking at the details, really looking for yeah, those details that help you over time to build relationships through identification of plants at different times in the year. I would say from a research perspective, my master's was more ecology and restoration focused so the methods were more clearly scientific methods and, you know, doing transect studies and percent cover and trying to quantify things like pH and soil moisture, for trying to get an idea of what more idea habitat for planting lhásem or northern rice root in a restoration setting, you know, what that looked like.

Aside: Hey, if you don't know what a transect study is, welcome to my brain. So, I looked it up for us and it's a series of long tape measurements that botanists use to grid off areas that way they can count and calculate populations of our plant friends within that grid. Leigh's work involves her community, so a land-based session might look like walking with elders and community members in situ. Kind of the opposite of what most early ethnobotany involved... On purpose!

Leigh: And then definitely that cultural interface in terms of if we're going to be harvesting the bark, or the leaves, or the flowers, what does that look like from a sustainable standpoint through a Squamish lens? So, that's really kind of where some of the teachings around reciprocity, responsibility, and respect really come in.

Alie: I'm curious too when it comes to terminology, I noticed that in your book, you use the term harvesting and you've been talking about harvesting. Do you find that in pop culture, the term 'foraging' has a different maybe connotation than 'harvesting'? How do you approach that?

Leigh: Yeah, that's a great question. I tend to use 'harvesting' more, and I think often people will talk about foraging or wildcrafting, and I think for me, and this isn't across the board, but there are undertones of storylines within those conversations where there are aspects of cultural appropriation or, you know, not necessarily thinking about the reciprocity piece. Like over-harvesting, being so excited (and I share in this excitement) of what it means to be able to go out, identify something, harvest something for your own health or wellness, is a really powerful act. But when it's not done within any kind of context of our responsibility and our reciprocity, that is something that is really problematic and is somewhat – and maybe unfairly in my own kind of mind – more attributed to some of the forums and conversations around wildcrafting and foraging. So, that might be why I tend to talk about harvesting more. Whether it's in a family member's backyard garden, or in a forest, or camping spot somewhere; going to that place and feeling like we're sustaining ourselves or healing ourselves from the land is a really powerful act.

Alie: Mm-hm. Do you have any big pieces of advice for people who are excited but don't want to do it without reciprocity or don't want to engage with any kind of harvesting without knowing some basic tenets? [*"All right, listen up."*]

Leigh: Yeah. One big piece of advice that I think is really great, again, is kind of going back to doing some research to look at your local native plant nursery, really engaging them to say what are their priorities in terms of growing and selling native plants. Are there any partnerships with local Indigenous communities that they're supporting? You know, are they growing them in localized seed and propagation fields, or are they bringing them in from other regions? So, I think just educating yourself and really going, like, native plant nurseries can be such a wealth of information. And then if there's a plant, like I say for example, a plant like stinging nettle, which is so popular as a plant food and a plant medicine and also a material.

Aside: And stinging nettle looks kind of like a shiso leaf if you've ever seen one in a sushi restaurant. Leigh says on her website, Swálwen, that each year around late March through mid-May it's stinging nettle harvesting time in Squamish and it's "Harvested for eating when the young shoots are less than a foot tall and still have a purple tinge to the leaves. They are at their most tender then." She says that nettles are very easy to grow in a garden which is the most sustainable way to harvest this wonderful plant. She says that the stems are gathered for fiber in September and also notes that native butterflies depend on the nettle to lay their eggs on the leaves, birds enjoy the seeds of nettle each fall. So, it's important to remember to leave some of the plants for nonhuman life. But does warn, "Do not harvest nettles for food or tea once they've flowered as they develop these gritty particles called cystoliths that can irritate the urinary tract." If you're curious

about your urinary tract, by the way, we have a Urology episode that you will love. We also have a kidney episode.

Anyway, her book details so many plants and their uses, like for example, licorice fern which grows on mossy trees, and it's chewed by the Squamish people during ceremony to keep their voices strong. There's also *saskays*, AKA salmonberry shoots which have this fresh herbal flavor, and they can be enjoyed raw in the spring. There's western hemlock which can provide this boost of vitamin C plus electrolytes. There are a ton of descriptions in her book of local plants, including but not limited to, you ready for this? I'm just going to list a couple: black poplar, western redcedar, beaked hazelnut, bog cranberry, saskatoon berry, soapberry, thimbleberry, wild rose, fireweed, nodding onions, wapato, wild ginger, beard lichen, common horsetail, Devil's club, broadleaved plantains. She talks about a bunch of them. That's a lot of plants specific to one region.

But let's say you have some wonderful ethnobotanical resources in your area. What do you do? Do you take yourself to a parking lot at the mall and start screaming toward the sky, "I want to be friends with plants!" You can, it's not illegal, but there are alternatives to that.

Leigh: And it's also very culturally important to cross all those aspects. If you are uncertain about wanting to go out and you're interested in this plant, but you aren't sure if you have permission to harvest in a particular area, a really great way to learn about that plant and grow it and even grow some extra to share if you have a local community contact with an Indigenous community. For example, sharing some plant starts or seeds is a really great way to also enact that reciprocity. I would say for anybody who has that feeling and that questioning of, should I be doing this? Like, should I be here harvesting this plant? Then it probably means you should pause and do a bit more, you know, self-education or reflection because often that question may be coming from the intuitive understanding that maybe this plant is really culturally important.

When we think about that from a critical lens, the Indigenous people living and residing in that region have had centuries of barriers put in place to accessing some of these plants and the knowledge connected to them. And these plants have also often been really highly impacted through land development and privatization and just many different layers of impacts.

Another piece of that too is, you know, along the lines of building connections with local Indigenous communities, or if you yourself are Indigenous and you're wanting to engage in this, really just finding the people in community to talk with and to sort of work up to that place of asking permission or asking for guidance or mentorship. And I say this with the caveat of, you know, you definitely don't want to go into a local Indigenous community and say, "Okay, I am ready to learn who's going to mentor me?" [*Alie chuckles*] Because, you know, people are busy, people are doing a lot of their own work. But if it is in the setting where that is something that's available to you, then that can be a really great way as well to just simply ask permission and ask for those guidelines.

Alie: Do you want to bring up white sage or should I do it?

Leigh: [*laughs*] You can do it.

Alie: Oh yikes. Here in California, southern California, maybe that awareness isn't everywhere in the US, but I feel like white sage is really the plant that is the most... kind of, visible in terms of how not to approach it if you are especially doing so for commerce. [*"Yikes."*] Any thoughts on that you want to share?

Leigh: Yeah, thank you for bringing that up. White sage is definitely a plant that holds deep cultural importance, importance in ceremony, and in upholding the spiritual wellness of people, Indigenous people who've utilized it for thousands of years. And it has relatively recently become very

popularized and commercialized without any context, grounding, or reciprocity towards the people who've stewarded this knowledge of this plant and the plant itself.

And so, what happens in situations like that is, I mean, 1) just sheer over-harvesting and removing that plant from these communities who've utilized it culturally for thousands of years. And then 2) just really not understanding what the impact of that harvest is going to have on the plant, you know, on the ecosystem, again, on the people who are utilizing it from a cultural context. And even worse, sort of layering in a shallow version of cultural importance and kind of generalizing it and not connecting it back to any particular community or even culture, but really appropriating the practices or sort of, I guess, butchering and then appropriating certain parts of the practices that fit into broader society and can be more easily commercialized.

Aside: White sage, just for some context, is a member of the mint family but it's not common sage. It's a different species, it's native only to southern California and Baja Mexico. According to the article, "Plant of the Month: White Sage," by Smithsonian fellow Anna Kate Cannon, it's been used as "a food, as a spice, as a shampoo, deodorant, a cold remedy, a cough medicine, and a pain reliever for headaches, rheumatism, and body aches." Its leaves were burned over hot coals to produce smoke to fumigate houses after these waves of European diseases like smallpox, measles, and even tuberculosis. And white sage is not just functional or medicinal, it's also a ceremonial plant and is used for good luck, and in coming-of-age ceremonies, it's given as a gift, using it to clean the air of bad luck or spirits, it's called smudging.

But it's grown in popularity so much among non-Indigenous folks that the market for it is very hot. It's not easily farmed so white sage is typically taken from the wild and even poached in massive volumes. So, that little bundle of sage you might see in the crystal shop or a natural food store, it may have a more complex journey there than you realize.

Leigh: And when something becomes so popularized and so disconnected from its roots and origins, it's not only re-traumatizing people who have had to really fight to find a way to reconnect to this plant, to this knowledge, and these practices, it's also now layering in this fight of how do we stop this plant from disappearing to support large-scale commercialized products? And also, just this kind of blatant use and appropriation of a practice without really any of the context. So, I would say that that's the plant that certainly falls in that appropriation category and should not be wild harvested by anybody outside of communities, I would argue, that have a cultural connection to that plant.

Aside: So, I mentioned to Leigh that two years ago we sought out the non-profit Wild Yards Project who cultivated for us this native garden, turning this dusty, weedy hillside into just a party, a rager of sagebrush, milkweed, coyote brush, we got white and black sage, and then some really rare native volunteer plants that just must have been waiting until the soil became more friendly. We didn't even plant 'em! They were just like, "Hi!" We're like, "What are you doing here? We're so excited you showed up!" But you don't need a whole hillside.

Leigh: Yeah. So, I would say like, that's so wonderful to just, your experience of planting out a native plant garden. And then again, just how working with plants in a garden, or even a garden box setting, really helps you to kind of zero in on these plants growing in the regions where we live. And I think building that familiarity in relationships is just so, it's so wonderful.

In terms of invasive plants, it never sat well with me during some of the restoration courses I took, just how, like, evil invasive plants were made out to be. [*chuckles*] It was like, almost like we were going to war. And I get that like a lot of these invasive plants are *extremely* difficult to remove,

they're extremely difficult to remove effectively. And so, there is certainly a sense of urgency and yeah, it's a challenging scenario.

But a perspective that I heard that really resonated with me was, if we think about doing decolonizing work, say within a research setting, and we kind of translate to what does it mean to decolonize the landscape from a plant-based perspective? You know, by removing invasive species, we are creating space for these endemic plants, for these native plants to come back onto the landscape to create, to carry on those relationships with the soil, with pollinators, and with people who have been in relationship with these plants, and for new people to learn about them and build these connections. And so, I think there can be invasive species removal with care and with love, even though you are literally, you know, pulling out these plants from this area, thinking about it in the way of creating the space for these other plants to come back and thrive is... I like that way of thinking about it.

And then also of learning of some of the creative ways that people, you know, after an invasive species pull might be utilizing some of the plants as well for cooking or for materials because that is something people have talked about, especially with plants like Himalayan blackberry or Japanese knotweed that have that edible component to them. There certainly are some that do really have very detrimental impacts and risks in the actual removal of them, like giant hogweed...

Aside: A great episode for this is the Foraging Ecology one with Alexis Nelson AKA Black Forager. What a wonderful lady. She now has a PBS series called *Crash Course: Botany*. She talks a lot about foraging in the context of communities of color and Indigenous folks so she's great. And a *Rewilding Magazine* article titled, "Invasive Species as a Metaphor for Colonization," featured excerpts from the 2022 book *Fresh Banana Leaves* by author and Indigenous scientist, Jessica Hernandez. Jessica writes:

> *Invasive species harm an entire ecosystem, sometimes outcompeting all native plants in the same landscape. However, we are taught as Indigenous peoples that regardless of whether this plant belongs there or not, we must ask its spirit for permission. As I shared before, we acknowledge them as displaced relatives rather than invasive species, since at the end of the day, they are also someone's plant relatives.*

So yes, ethnoecology isn't just about plants, but about places and peoples' relationships with plants, which vary from culture to culture and place to place and person to person. Oh, speaking of people...

Alie: Can I ask you some questions from patrons who you know that you're coming on?

Leigh: Sure.

Alie: We'll see how many we can answer!

Leigh: Okay.

Aside: But of course, let's first take a quick break and highlight a charity of Leigh's selection. This week, we're splitting the donation between two, the Seeding Sovereignty Project which seeds paths of land, body, community, cultural, and political sovereignty by bringing gender expansive people, women-led empowerment focused, and intentional collaboration to the forefront of a movement to protect people and preserve our planet.

We're also donating to the Indigenous Climate Action, which is ICA. It's an Indigenous-led organization guided by a diverse group of Indigenous knowledge keepers, water protectors, and land defenders from communities and regions across the country. We've linked both organizations in the show notes to learn more and those donations were made possible by sponsors of the show.

[Ad Break]

Okay, these questions came from patrons via Patreon.com/Ologies, which you can join for a buck a month. So, let's get to the root of your curiosity, let's leave you more informed with questions such as this one asked by Samantha Tovey who just moved to a new house, and SaraSunshine who belongs to a local native plant society.

Alie: Cool, all right. A bunch of people, Pup E Dog, BeckytheSassySeagrassScientist, first-time question-asker Beth Peluse, and a bunch of other people, in Beth's words: want to know about nativars and crosses between cultivars and native plants. She says that they seem to be controversial. Do you have any experience using nativars or do you have any thoughts on them? How do we feel about cultivars?

Leigh: Okay. What I do know and what I've learned from some of the people who I went to school with and now collaborate with who have a native plant nursery are, you know, it's really important to think about the origins of the seed or the plant that you're planting. So, has it been locally sourced? Or in the case of, I don't know, something like yarrow, for example, may have been hybridized with different ornamental yarrow plants in which case, you start to potentially have a change, I would say, in the ways that that plant might be used, it may have different qualities to it.

So, I would say from a perspective of harvesting, that people will definitely notice differences and will likely go back to particular areas or stands of plants to harvest from time and time again. Really, the cultivation practices from a sort of standpoint of Indigenous management, really, it's looking at things that will enhance, kind of, the growth and productivity of a particular part of the plant, whether it's the roots or the fruit. And it's not about adjusting any aspect of those in terms of things like foliage color or necessarily disease resistance. But there is some selection for larger roots or leaving particular roots one year to grow a bit larger, and then saving seeds from particular plants in order to keep the population of that plant growing.

Alie: One thing that was so interesting with the garden we planted, we planted a certain number of plants, a certain, you know, number of species, and then a few that we didn't plant that hadn't been seen in our neighborhood in years popped up out of nowhere! And so, folks that have native nurseries around here, it was so cool to have them come out and take some of the seeds to then cultivate, that way they can keep kind of propagating them. But it was so interesting to see that once the hillside and once an area is given the space to, kind of, foster native plants that they start cropping up out of nowhere, which is so cool. It's something that we didn't expect, and it was really exciting. The plant nerds that I know were like, "Where did that come from?!" We were like, "I don't know! It just... it was a volunteer, we loved it!"

Aside: Again, this was the Wild Yards Project, and its founder David Newsom has brought by some of LA's leading botany experts and tribal ethnobotanists, Xerces entomologists, and native seed growers just to marvel at this biome that's sprung up. He's like, "Come check it out!" We've been so honored to be like, "Ah! Who is in our backyard? This is exciting!" It's truly a joy. Every season we are getting to learn so much. So far, we haven't used any of them medicinally but many of you listeners on Patreon asked about that such as Brittany Peek, Isabelle Newman, Rick T, Alecia Smith, Morgan, Gene Phillips, Jen Clinton, Neurotic Gardener, Greg Walloch, Daniel Kelly, Rosalee de la Foret, Leah Anderson, Kleb, Katlyn Catron and Leigh Joseph fan, JoesYourMom.

Alie: A lot of folks had questions about medicinal uses of course. Shayla Faye Watson, first-time question-asker says: Love this topic! Always wondered how Native folks identified the healing properties of plants? Science seems to lag behind affirming knowledge of medicinal values of

plants that Native people have known for thousands of years. So, can you speak at all to how certain plants are identified or how that knowledge gets passed down?

Leigh: Yeah, so there's such a diversity in Indigenous communities and across North America and beyond. And I would say that similar to that there's a diversity of language across each of those communities, and also, you know, knowledge systems in terms of how cultural plant knowledge was and is carried within communities. So, in some places, it would really be a single person, a medicine person who really worked on this knowledge. This was their area of expertise and their gift because often learning really came from a variety of ways in terms of experiential learning, in terms of learning from one's elders, knowledge they had gathered about this plant. But there's also an aspect of learning from the plant itself in terms of, you know, on a spiritual level and or on a level where some teachings might come in dreams, some teachings might come from how animals utilize that plant and the seasonality of that.

In Squamish, I've been told that it really was certain families that held this knowledge and expertise of plants and plant medicine. And so, if someone in the community needed something, they would go to this family and ask for that, and then it would be prepared for them and given or gifted to them by this family. You know, I worked really closely with an elder in my community and really, he would be considered a medicine person. He worked a lot with bark medicines, and it was really important for him to share with me, you know, the teaching that this knowledge at this point in time needs to be shared as widely as possible in our community, especially with youth because it's been so highly impacted.

Aside: In terms of bark medicine, Leigh writes in her book that:

> *If you are harvesting the bark from a plant, timing is key. You can only access the inner bark of a plant when the sap is running in the springtime. This is the time when the plant mobilizes the stored energy and nutrients from its roots up into the aboveground parts of the plant to support new growth. It is at this time that the new inner-bark growth can be separated – not just for medicines but also as vital weaving material.*

I was also reading that it's important not to girdle a tree, meaning strip the bark in a ring around it which would cut off the nutrient and sap highway. Some folks recommend pruning just select branches and using bark off those – but the intention of taking the least you need is important.

In terms of how it's used, the bark from *Viburnum opulus* has been used to relieve cramping, some sap has antimicrobial properties and of course, the bark of the willow, *Salix alba*, contains a form of salicylic acid that's been administered as a pain reliever and an anti-inflammatory for thousands of years and eventually lead to the synthesis of what we call aspirin.

But this is not without controversy. People fight about who invented it, woah! So much back and forth. According to a 2021 piece in *Pharmacy Times*, there was a chemist who worked for Bayer, and he synthesized acetylsalicylic acid. He also invented a little thing called heroin... all within the same two weeks! Maybe he was on one or both of them. Who knows. Busy dude. But in this pharmacological, historical community, there's a lot of debate about another chemist who may have synthesized it. They're like, "Which European man made a derivative of this valuable ethnobotanical resource first?" Which is so on-brand. Potato-potato. Back to plants.

Leigh: The language connected to local ethnobotany, which includes plant names, but it also includes place names often that will have very practical language embedded in the translation, like "Place of many thimbleberry bushes" or "Place of Devil's club." You know, this elder really shared with me that it's so important to share that knowledge broadly and to just ensure that people develop that understanding that we can nourish ourselves from our traditional landscapes or traditional

homelands. That's a really powerful act of cultural and political resurgence and one that really centralizes the cultural view of health and wellness, which is really important for people, especially just with the disparities within the Western health system and some of the discomforts that people have engaging within Western health systems. And it's not that, you know, traditional medicines or knowledge replace that but taking a preventative approach to one's health by learning what plants can really uphold health or help reduce the impacts of particular lifestyle diseases, for example, will really help people feel empowered in their own pathway to health and wellness.

Aside: Oh, dive headfirst into this bowl of berries, kids. A 2017 study in the journal *Botany* titled, "Comparison of antiglycation activity of leaves of eight traditionally used wild blueberry species from northern Canada and Europe with their phytochemistry," reported that they tried extracts from seven blueberry species, all of which showed an in vitro potent antiglycation activity correlated to phenolic content. "What does that even mean?!" you're screaming at your windshield. I hear you. A phenol is a type of chemical compound, it's been used in a bunch of life-saving drugs like amoxicillin and estradiol, levothyroxine, which is a thyroid medication, and propofol, which was given to my husband before his colonoscopy. And that 'antiglycation' word, that means that it prevents excess blood glucose from grabbing onto fats and proteins and damaging tissues and nerves. Frickin' blueberry leaf extract. Indigenous communities are like, "Hi!... Yeah. Hello."

Alie: You know, Kleb had a question kind of along those lines: How to protect and be just to Native communities in relationship to big pharma exploration? There's a long list of over-the-counter medicine that comes from developed nations going into forests and stealing knowledge and species. Any thoughts on how to protect those particular plants and those lands?

Leigh: Yeah, it's a great question and definitely a very valid consideration and concern. It's one of the questions that I've worked with other Indigenous communities outside of Squamish and including my own community in Squamish, the first question that the elders ask is, how are you going to protect this knowledge and make sure it's not basically taken by big pharma and exploited? And there's no simple, straightforward answer to that.

The reassurance that has kind of been given to me when I've asked some mentors about this question, how to answer it for people, is really the process of big pharma coming in and identifying and then taking through a plant ingredient to say, create a new drug with it, is such an incredibly expensive and resource-heavy process that that in itself is somewhat of a barrier. But that's not giving people a lot of reassurance, right, on a community level. So, I think that it's so important as researchers within fields of ethnobotany or botany that intersects with Indigenous culture, to really look at our responsibility in terms of how we're conducting research, how we're recording it, where that information lies, how can we protect that information at a community level and then, really, what can and can't be shared more broadly? And those are all conversations that need to happen from the very get-go.

Alie: Your work involves so many different plants for so many different uses. Obviously, a lot of folks had questions about medicinal plants and also skincare with plants, which is something I know you know a lot about.

Aside: Other patrons with this question include Roberta Hancock and Byron Sampson, Winnie's a Witch, Eating Dog Hair for a Living, the Aerial Mapper, Carol Ruda, and...

Alie: Isabelle Newman asked: Are there any plants that are good for use for skincare? Especially acne or swelling? And Hannah McCain wanted to know: During your time creating a skincare line, how you managed the debate over "clean/natural" ingredients? And how do you feel about the US

regulations over personal care products versus other countries? So, a lot of questions about what you love to use and how you developed that.

Leigh: Yeah. So, my skincare line or brand is called Skwálwen Botanicals and it really came out of a desire to be interacting with the plant knowledge and the reconnection to that knowledge that I was experiencing and working with in a community research-based setting but really approaching that from like a very creative way. It really started in me taking my kids out on the land, learning about plants, starting eventually to harvest some plants, and then starting to create some formulations with these plants, which started as things like salves, so infusing carrier oils with dried botanicals or tea blends. So, drying and processing tea materials and then creating blends. For me, that was a really exciting way and continues to be a really exciting way to think about formulating products that often have a botanical hero ingredient in them that can be paired with active ingredients that can be formulated for gentle skincare because I have very sensitive skin. So, really when I think about some ingredients that can really help with calming the skin.

Rose is such a wonderful ingredient and that could be rose water, rose petals, powdered rosehips, rosehip seed oil. There's many different species of rose that are commercially available kind of, in those formats. But I would say that from a cultural perspective too, wild rose, as many different species as there are across different, say, Indigenous territories, has a real connection to that, you know, the calming benefits of it, both internally and topically and then nutritionally as well. Rosehips, the fruit of rose plants, is such an antioxidant and vitamin C-rich fruit that does have that importance for this approach to beauty for sort of inside-out beauty as well as the preventative kind of health aspects of plants that I mentioned. You know, it's been taught to me by some of my community mentors that whenever you can ingest a plant *and* utilize it topically, you're just enhancing the benefits of that plant. So, rosehip would be a plant that sort of falls in that category as well as being one that's really great to address inflammation and also calm breakouts. So, that's one plan that comes to mind. [*"I like roses."*]

Aside: Just a side note, I was recently messaging with your favorite enigmatologist, *New York Times* crossword writer David Kwong who was having dinner with one Dr. Charles Davis who is the curator of vascular plants at the Harvard University Herbaria and given Dr. Davis's field, I asked David to ask him, "Hey, what should I slather on my face, for real?" And David wrote back, "Everyone at the dinner table right now is yelling, 'Rose oil!'" So, you heard it here, second.

Now, what if your face is not a problem but an itchy suppurating rash is? Alecia Smith gently demanded: Poison ivy exposure tips/tricks, and effective remedies. Please.

Alie: Someone else asked if you have any tips about poison ivy.

Leigh: Mmm.

Alie: Anything to rub on that?

Leigh: Oh gosh. My best guess would be if there's plantain growing nearby, give that a try. I haven't personally, knock on wood, come into contact with poison ivy. But with plants like stinging nettle, for example, plantain is a really great plant to make a quick poultice with. So, even just rinsing it off, chewing it up, and putting it on topically, that plant seems to be really great for topical use so I would suggest that.

Aside: So, this green shrubby plant, it's thought to originate from Scandinavia, and it was brought over by Europeans, and it spread so widely in North America that it's referred to as the "white man's footprint" but it's not closely related to the banana-like plantain. It has these wide cup-like leaves with this fingery stalk in the middle, kind of like a lily or a tiny dong.

And you may have heard our Bryology episode on moss with Dr. Robin Wall Kimmerer and in her book, *Braiding Sweetgrass*, which I know a ton of you have read, she writes:

> *Garlic mustard poisons the soil so that native species will die. Tamarisk uses up all the water. Foreign invaders like loosestrife, kudzu, and cheatgrass have the colonizing habit of taking over others' homes and growing without regard to limits. But plantain is not like that. Its strategy was to be useful, to fit into small places, to coexist with others around the dooryard, to heal wounds. Plantain is so prevalent, so well-integrated, that we think of it as native.*

Why is it so helpful? Well, plantain or *Plantago major*, the broadleaf plantain contains:

> *Biologically active compounds such as polysaccharides, lipids, caffeic acid derivatives, flavonoids, iridoids, glycosides, and terpenoids useful for wound healing, anti-inflammatory agents, analgesics, antioxidants, weak antibiotics, immune modulating, and anti-ulcerogenic activity.*

And if you need more info on this, just get yourself over to the paper titled, "The traditional uses, chemical constituents and biological activities of Plantago major. A review," from the *Journal of Ethnopharmacology*.

Alie: Rosalee de la Foret said: Too often people dismiss plants unless there's a scientific study (or 20 them) showing positive results. Can you share the limitations of science in regard to medicinal plants? In terms of not having enough focus, maybe for some of these really expensive studies. Any thoughts on that?

Leigh: Yeah, that's a great point. I would say one of the first things that comes to mind is within my research, it's kind of bridged plants and health. In my doctoral research, part of one of the areas that my research originally was grounded in was looking at culturally based and botanically based approaches to the reduction in management of type 2 diabetes. And so, within that research project, there were five different Indigenous communities that were given the leeway to really look at how the community wanted to address this topic. And in Squamish, we ended up setting up a one-year land-based seasonal program. We were going out learning about plants, bringing them back, creating something with them, either a topical or internal pause creation or recipe.

One thing that in the process to, kind of, landing on that approach, we did look at doing more medicalized interventions. That wasn't something that is in my background, but I was collaborating with a committee of people including public health nurses and physicians. And while we were going down that path, the question that really came up time and time again was, for people who are on prescription medicines, how do you incorporate Native plant medicines when there isn't the literature understanding about contraindications? And that's a really important question and one, for sure, that doesn't have, you know, it's not supported in the literature for a variety of reasons.

But in that particular case, I remember working with some medicine knowledge holders in a Northern Cree community who were working alongside the nurses and physicians in their community. And they were adopting this process of going low and slow. So, taking extremely low concentrations and at slow increments of these traditional medicines in combination with sort of the Western medicine approaches.

Aside: For example, those blueberry leaf extracts. In the 2019 *BioScience* journal article called, "To Combat Diabetes, Native Peoples Rediscover Traditional Plants: Ethnobotanists partner with Indigenous communities" the author quotes Leigh herself saying that "Type 2 diabetes is such a crisis in so many Indigenous communities, we need to build the understanding that this disease did not exist in this way pre-[European] contact." The piece goes on to name bitter gourd tea used to

increase insulin secretion, American larch and Labrador tea to enhance insulin sensitivity, extracts of balsam fir, reducing the release of glucose from the liver, and the purple pitcher plant that can stimulate glucose uptake in muscle cells and can prevent against that peripheral nerve damage, neuropathy. We have a whole episode by the way on pitcher plants and Venus flytraps and other carnivorous swamp babies, just in case you want it, we'll link it in the show notes. But yes, plants have many chemical compounds that can help us out and we owe a lot of that knowledge to Indigenous wisdom.

Leigh: So, that's one thing that comes up is that I think that it's quite specialized knowledge and application, but you also kind of need to find that balance where you're not waiting on the scientific studies to verify knowledge that has been in practice for a very long time. But you also have to take care when reintroducing that in a different time than when those would've been the only and the primary medicines, for example, that are drawn on.

Aside: So, make sure that remedies play nice. So, do a little research on that. Now, this next one was on the minds of many including Sarah Carter, Sophia Jones, Rachel, Anna Easton, Ashlee Dent, Lorie B, Amy Johnson, Nicole D-G, Mushroom Screams, Delaney, Sleepy Frog Lauren, Will Clark, Matt Ceccato, Magnapinna, Olivia, Coda Kirshbaum, Dave Brewer, Nicole, Heather Wills, and Emily Staw-fur.

Alie: So many people obviously wanted to know, last listener question here, in Sarah Carter's words: In this time of bunk AI-created guides, what resources (preferably written by women and/or Indigenous peoples) would you recommend for learning more about and identifying native plants?

Aside: Her book! Of course. Which is linked in the show notes.

Alie: Any other guides that you feel like are a great place to start?

Leigh: Yeah! So, I bring up this guide because I'm working with the authors right now on a re-release of a coastal plant guide that will be published next year, but *Plants of the Pacific Northwest* by Andy MacKinnon and Jim Pojar. So, this is not written by women, but again, like I say, I'm working with this with them and another author Jamie Fenneman, right now on an updated coastal plant guide. And I'm working on all the ethnobotanical components of this guide. So, I would say that that has been the original one. So, *Plants of the Pacific Northwest* through Lone Pine has been a real go-to for me, just from a plant identification perspective. And it also, you know, although it is outdated now, it has ethnobotanical components in that original publication. But keep your eyes out for the new one being released next year too.

Aside: So, that's *Plants of the Pacific Northwest* via the publisher Lone Pine. But I just looked at their site and they have a bunch of North American guides from *Northeast Mushrooms* to *Trees of Illinois,* to *Flowers of Sierra Nevadas.* So, sorry other countries! We love you too. We love all of the countries, and your local librarian would probably be so thrilled if you paid them a visit for some plant guide recommendations. So, what else?

Leigh: I would say that the *Boreal Herbal* is a really great resource by a non-Indigenous female herbalist out of the Yukon, so in Whitehorse, Beverley Gray. This book is one that I really love because it's just so jam-packed with information from everything from plant identification through to recipes. But I feel like it's done in a really informative and informed way.

Aside: And yes, of course, we're going to link them on our website, and you can find a link to that in the show notes. We've got books and books and books and books! So, take a hike, sniff a plant, tell it I say hi. But before you have too much fun...

Alie: The last questions I always usually ask, really, what's the hardest part about this work? Has there ever been a plant that's evaded you for years or one that's still on your "To Find" list? Any challenges that come up repeatedly from something that's just irritating to giant structural things you'd like a soapbox for?

John: [*chuckles*] Yeah, that's a great question... One that's evaded me... Okay, so I was teaching an ethnobotany course in Haida Gwaii, and I was co-teaching with a Haida instructor. The day before the course started, I went out to harvest a handful of plants to bring into the classroom. because lots of elders have said, you know, even if you're in the classroom, make sure to bring the plants in, have them there. And so, one of the plants on my intended list was ch'átyay or Devil's club. And so, Devil's club is a really culturally and spiritually important plant across its range and I had seen this plant growing in previous trips to Haida Gwaii.

Aside: And this location, a swath of about 400 small islands is located off the coast of British Columbia. In 2010 it was renamed from the Queen Charlotte Islands to recognize the 13,000-year history of its Native inhabitants. The Devil's club that grows there is native to the Pacific Northwest coast from Alaska down to northern California. It grows as a shrub and has huge spiny green leaves that look like a maple and clusters in a cone of bright red berries. In her book, Leigh explains that the plant offers anti-inflammatory properties but warns that it is potent and it's highly respected among the community and it should not be toyed with unless you know what you're doing. For many reasons.

Leigh: And so, I went out on a trail and found the other plant species quite quickly and didn't harvest from the first stand, made sure they were thriving in the area, spread out my harvest, and took just a small amount from those other plants. And then as I was walking up the trail, just noticed that I was passing these wet depressions in the forest where ch'átyay or Devil's Club, you know, I would expect it to be growing. And as I went up the trail and kind of puzzled at this moor a feeling came over me of just a realization. And I stopped and I thought about it, and I just felt that the message I was getting was that I wasn't invited to harvest this plant here.

So, I sort of thought, okay. I thought back on my teachings around that, on the fact that I had asked permission. And so, I turned around and I went to start hiking back down. And almost immediately I started seeing ch'átyay plants scattered throughout the forest. [*Alie gasps softly*] And in the book, I kind of talk about how my logical brain kind of kicked in and I was like, "Oh yeah, the trail can look different on the way down. Perhaps I was just so focused on certain areas that I missed the scarce plants growing in the forest here." But I reflect that I knew that wasn't the case, and I felt that that was not the case. And that, in fact, what seemed to have happened is that knowing that my intention was to harvest, the plant had hidden itself from me. [*"You can't see me."*]

When I got back and told my co-instructor about this, she said, yeah, it's a really good thing you didn't harvest because the invasive deer population, or introduced deer population, has been browsing Devil's club and really reducing the numbers of this important plant on Haida Gwaii. People were feeling really, really sad about seeing this plant decline. And so, it was just such a learning moment and just such an illustration of, yeah, just an example kind of beyond my explanation, where I was told no when I asked permission to harvest a plant.

Alie: Okay, so maybe you came up against a little bit of gentle opposition, which was good. Have you ever had a time when you've been out doing your work that's been a moment that's really stuck with you?

Leigh: Yeah, a moment comes to mind when I was volunteering in a community off the north end of Vancouver Island in Musgamagw Dzawada'enuxw, which is in Kwakwa̱ka̱'wakw territory in a

village known as Kingcome Inlet. And I had the opportunity to go and spend some time learning in an estuary root garden there that had been cultivated up until about 75 years before we were doing this work. So, it was really quite defined and really quite amazing to see the delineation of these particular root vegetables that were still really thriving in this managed site.

So, I was doing fieldwork with a graduate student, and we were going down to the estuary each day. At the end of that work, we got a chance to take youth and elders from the community with us on one of our field days and do a harvest of the roots. And then we brought them back to the longhouse and did a pit cook where we cooked the roots underground and we sat in the longhouse together after we opened up the pit cook. And I just remember listening to people in the longhouse just talking about which root was their favorite, you know? Oh, "I really like the flavor of the rice root, but oh! The silverweed's so bitter and it's better if you dip it in the butter."

It was just this illustration to me of what I hope and want to contribute to is creating opportunities, contributing to opportunities where people are learning from the land, rebuilding their relationships, and really integrating that knowledge and experience back into their own lives and finding joy and strength and grounding and identity in that process for themselves. And that was one example where I just felt so happy because I was trying these root vegetables that I'd learned so much about from an academic standpoint and then I was literally listening to the responses as the community was inviting them back in a feast setting. So, that was really special.

Alie: Aww! That's so beautiful. That's just, I'm sure everything you love in one place, in one experience.

Leigh: Definitely.

Alie: Oh, that's amazing. Any other parting words or advice you'd want to give to any aspiring Indigenous ethnobotanists out there?

Leigh: Yeah, so I would say sit with people in your community because they will help guide you and really come back and lean on your community and the teachings there for how to carry yourself in a good way and also to give you that strength and direction to continue pursuing your dreams and contributing your voice in your chosen field.

Alie: This has been such a joy. This has been so fun to talk to you.

Leigh: Thank you so much.

So, ask really brilliant people botanical questions. Check out all of Leigh's work at the links in the show notes, including her book and her social media. We are @Ologies on Instagram and Twitter, I'm @AlieWard on both. *Ologies* Merch is available at OlogiesMerch.com. If you have little ones or need clean versions, *Smologies* episodes are classroom-safe and are all available for free at Alieward.com/Smologies. Thank you, Mercedes Maitland for editing those.

Erin Talbert admins the *Ologies* Podcast Facebook group, long time ologite and professional transcriber, Aveline Malek makes our transcripts, after the amazing Emily white of The Wordary's years of service. Congrats Emily on your plate overflowing! We love you so much! Noel Dilworth does our scheduling and posts your #OlogiesArt on Fridays and your #MerchMonday pictures on Instagram each week. Our managing director Susan Hale handles everything under the *Ologies* roof, from making sure we all get paid to making social posts too. And I totally forgot to mention them in that Alieology episode, that I get by with a ton of help from Noel and Susan in that department. Although, all three of us are a bit TikTok confused. Kelly R Dwyer does our website. Susan Hale also did a ton of research for this episode and fact-checking and Mercedes contributed as well. And lead

editor, a balm to our souls is Mercedes Maitland of Maitland Audio, herself in the snowy expanse of Canada. Get your thick socks on, it's chilly! Nick Thorburn made the theme music.

And if you stick around until the end of the episode, I tell you a secret and y'all may know I was really hella sick last week; I didn't get out of bed for four or five days, I had fevers every day, sweating, things coming out of my body like an exorcism. But earlier this spring, something else weird was happening. I would bruise after barely touching something. I was going to the gym, I'd come back looking like my legs were tie-dyed. My dentist asked if I was on heart attack medication because my gums bled at the tiniest poke. So, of course, I did a little googling and determined that I had terminal cancer of the blood variety, like my father had. So, I went to urgent care just in case. I was like, "Can you run a little bit of a blood panel?" They did. Came back completely normal.

A month or so later I realized that when I was getting headaches, I'd treat myself to a few chewable baby aspirin because they are much more delicious than a pill, you don't need water. I was like, "I love these." I kept them in my purse and sometimes I'd be like, "Mmm, let's eat one or two, so tangy! And they're good for your heart, or something." Reader: I was thinning my blood because children's aspirin was so nostalgically delicious and impulse control is difficult, I'd just slip one too many here or there. They're not candy. Medicine is not candy. And *please* talk to your doctor before doing *anything* that we talk about in this episode. [*whispers*] Talk to your doctors. Anyway, that's all folks. Berbye.

Transcribed by Aveline Malek at TheWordary.com

Links to things we discussed:

Squamish Nation

Indigenous Heritage - Vancouver Heritage Foundation

Dr. Nancy Turner info

Vancouver Island First Nations Communities

Finding our roots: ethnoecological restoration of lhasem (Fritillaria camschatcensis (L.) Ker-Gawl), an iconic plant food in the Squamish River Estuary, British Columbia.

Seek by iNaturalist

How the Rage for Sage Threatens Native American Traditions and Recipes

Plant of the Month: White Sage

Protect White Sage | Gabrieleno (Tongva)

"From the beginning of time": The colonial reconfiguration of native habitats and Indigenous resource practices on the British Columbia Coast

To Combat Diabetes, Native Peoples Rediscover Traditional Plants

Comparison of the antiglycation activity of leaves of eight traditionally used wild blueberry species (Vaccinium L.) from northern Canada and Europe with their phytochemistry

The traditional uses, chemical constituents and biological activities of Plantago major. A review

Traditional Use of Devil's Club by Native Peoples in Western North America

Plants of Haida Gwaii: Devils Club

Restoring Balance, Haida Gwaii, British Columbia, Canada

Longhouses of the Indigenous peoples of North America

Longhouse History

Pit Cook on Vancouver Island - Canadian Roadstories

The makings of a traditional Coast Salish pit cook

Cultural Values of Native Plants

Plants, People, and Places: The Roles of Ethnobotany and Ethnoecology in Indigenous Peoples' Land Rights in Canada and Beyond

Estuarine root gardens of the northwest coast

Squamish Estuary | Tourism Squamish

Wild Harvesting: Responsibility and Reciprocity | First We Eat

What Are Transects, and Why Are They Important for Monitoring Natural Resources?

The first 3500 years of aspirin history from its roots - A concise summary

Chemist Creates Aspirin and Heroin

The discovery of aspirin: a reappraisal

Supplemental reading:

Held by the Land: A Guide to Indigenous Plants for Wellness

Plants of the Pacific Northwest Coast: Washington, Oregon, British Columbia and Alaska (Revised)

Lone Pine Publishing Plant Guides

The Boreal Herbal: Wild Food and Medicine Plants of the North

Fresh Banana Leaves: Healing Indigenous Landscapes Through Indigenous Science

Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants

U.S. Forest Service: Books Our Botanists Use

Other episodes you may enjoy:

Foraging Ecology (EATING WILD PLANTS) with @BlackForager, Alexis Nikole Nelson

Indigenous Cuisinology (NATIVE COOKING)

Smologies #31: INDIGENOUS COOKING

Indigenous Pedology (SOIL SCIENCE)

Bryology (MOSS) with Dr. Robin Wall Kimmerer

Dendrology (TREES)

Wildlife Ecology (FIELDWORK)

Urology (CROTCH PARTS)

Nephrology (KIDNEYS)

Carnivorous Phytobiology (MEAT-EATING PLANTS)

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Smologies (short, classroom-safe) episodes

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Theme song by Nick Thorburn