

# Carobology with Megan Lynch

## Ologies Podcast

### February 10, 2021

Oh, heeey! It's your Internet Dad, here with facts about things you don't know you care about yet, Alie Ward, back with an episode of *Ologies*. It is *not* about Valentine's Day, because if you are coupled, you've had a lot of quality time together this past year; and if you're not, it has been a year of, maybe, Zoom dates and googling DIY hug machine plans, so we're just not doing that this week. No episodes about Matrimoniology or Sexology. We had those in previous years, and yes, they'll be linked in the show notes, but this episode is not about that. It's not about roses or chocolate. It's about not-chocolate. It's about undersung trees. It's about something, perhaps, right over your head that you're about to be obsessed with. It's about carob. Yeah! Carob. Stop.

First, thanks. Thank you to everyone on Patreon. I gushed about you in a recent article that I'll link on my website. And heads-up: you can join Patreon for 1 tiny dollar. Thanks to everyone who's subscribing, posting on social media, texting your friends about the show, and leaving reviews. I pick a newly-left one each week, such as this one from NKShephard who says that *Ologies* is the best thing that they got from an ex. They say:

*This recommendation is from an ex's friend and it's the best thing I'm left with. Incredibly fresh, entertaining, and educational. Not an easy feat.*

Thank you NKShephard! If you're single, there is a Flirtology Singles group on Facebook. Just saying. (And then I wink at you.)

Okay. Carobology. This is indeed a word and has been used just *one* time in the literature. It was in a 1945 *LA Times* article by a columnist who wrote, "In his book, *Character Study of a Carob Tree*, Dr. Arboreal Snodgrass, a Carobologist of the nth degree, says they is a tree of the *Ceratonia siliqua*." And then it goes on to describe the carob tree. So yes, 'carobologist', was used in a 1945 newspaper. It's a word.

'Carob' itself comes from a root word in Aramaic, *kharubha*, meaning 'carob tree', or 'carob'. Shrug. It's also related to the Hebrew *harubh*, for 'carob'. Does that help you? I don't know. Once I found out that 'Carobology' had been used, it was *on* with this Davis-based California carob expert. She studied art and humanities in her undergrad but has had a second career as a musician, and then decided to go back to school to pursue STEM. She launched her own research into the carob tree, which she continues as she gets her master's at UC Davis working in almond development. She's passionate about plants and about the underdogs under our noses and above our heads.

We chatted about everything from Häagen-Dazs to pupcakes, pods, potassium, the culinary horrors of the 1970s, fiber, the drought-resistant resolve of carob, how to find one, when to pick the pods, and what to make from them. We also talk about cheesecake, rum, fungus, diamonds, and most importantly, how carob is about to make a comeback right into your mouth *and* your heart with botany nerd, outspoken advocate, and Carobologist, Megan Lynch.

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**Megan Lynch:** In terms of my body personally, phenotypically I'm very Irish. So being in a place that's not too hot... The ideal temperature for me is about 75. [Alie laughs] I love a reasonable amount of rain, a reasonable amount of fog. I love all that stuff. When I went up to Davis last fall, I was living down there again. So it gave me a basis for comparison in terms of how much had changed. As opposed to people who live

there the whole time, the change is so gradual they don't see it. But for me, there were definitely things that were really dramatically different.

**Alie Ward:** That's such a scientist thing to say: "It gave me a basis for comparison." Spoken like a true scientist. *[laughs]* Have you always wanted to be a scientist?

**Megan:** No, it's not something that I... I always took science, but I have to say... I mean, where to start with this... I'm disabled. I became physically disabled at 29.

**Aside:** And as anyone who lives with them knows, not all disabilities that are physical are visible, and not all disabilities are even physical. Megan is an amazing advocate for all kinds of folks, and I actually started following her when I got wind of #DisabilitiesinSTEM on Twitter. Like many people using that hashtag, she didn't think she belonged in STEM, despite her love of it.

**Megan:** I still don't have the money to get an official diagnosis, but I'm pretty sure I have dyscalculia, which is sort of like dyslexia for math and spatial things. So much of the way science is taught in junior high and high school, and certainly the message that we get from society at large, is "If you're not excellent in math, don't even consider going into science." And so I think for that reason I didn't really consider it as an option for me.

**Aside:** Megan was readjusting to life after becoming disabled and she says the reality for folks living with a disability – visible or invisible – is that a lot of jobs are deemed by others as inaccessible to them. She says that, sadly, the employment levels and income levels tend to be lower and it really drives those populations into a situation where finances are a struggle.

In fact, I was looking this up, and *today* found out that Section 14 of the Fair Labor Standards Act states that employers can pay employees with disabilities below the minimum wage. In order for the subminimum wage to apply, it says, "The disability of the worker must directly affect their productivity in their given position," and that the disabilities affecting productivity can include blindness, mental illness, developmental disabilities, cerebral palsy, and alcoholism, and drug addiction. Since this section was enacted in 1986, folks with disabilities of all kinds have been legally paid below minimum wage for their work.

So feel free to pause this and go break some plates, or grab your collar and rip your shirt off, or crush metal in your hands, or perhaps tweet your congressperson because that is disgusting. Anyway, Megan, who became disabled in her 20s, was trying to figure out what to do.

**Megan:** When I first went back to community college, I was thinking I just going to brush up the skills I was rusty on and then look around for what I could retrain in. Then, within a semester... I took a botany class, as well as an environmental chemistry class for non-majors, simply for my own interest. By the end of that semester, my botany teacher had pulled me aside and said, "Hey, you know..." [*"You're good."*]

And I had actually pulled *her* aside and said, "Look, I'm trying to consider what it is I can do." I don't want to do something that's completely unfulfilling for me because I've done a lot of that in my life already. All the jobs that I can see for people in horticulture, even the most advanced jobs, they want you to lift 50 pounds, you need to be certified for forklift work, blah, blah, blah. "Is this even possible for me?" And she says, "Yeah, I think you could do lab science."

**Alie:** Oh! So you kind of got discovered, almost! [*both laugh*]

**Megan:** Well, it's just that it took somebody to make it clear to me that the, sort of, pop idea of what science is, is not necessarily the way science works on a daily basis. That doesn't mean that it's easy for a scientist with disabilities – anything but. But the fact is... Even at that same institution, there was another professor that I was taking chemistry from who was like, "Why are you even going into science if you're not good at math?"

**Alie:** [*indignation and surprise.*] Hm!

**Megan:** Yeah, I know! Which is really a rather ridiculous thing because you don't have to be *the* person in the lab who's in charge of all the calculations. Even if we didn't have computer programs into which you just plug variables. [*laughs*] But for some reason there's that sort of gatekeeping.

And I think one thing that helped me a lot, besides that professor taking me aside and expressing confidence in me, was the fact that before I went back to school I was already on Twitter to promote my album. And so I switched to using my Twitter account to follow as many scientists, particularly plant scientists, as I could.

**Aside:** Megan credits some of her resolve to the working scientists she follows who were brave enough to come out and say, "Hey, math isn't my passion or my strong suit," and that they just have their work double-checked or they focus on qualitative things. We heard this very thing from the excellent Dr. Kaeli Swift of Corvid Thanatology. In that episode, she discusses her ADHD, and she has gone on to be a huge star in her field.

**Megan:** The fact that people were willing to admit, "Yeah, I'm not that stereotype." We have people in science who are complete whizzes at it, and that's great. It's really important for the type of work that demands that, but it doesn't mean the other sides of science always need that all the time. You're working in a team and everybody has their own strengths.

**Alie:** When it comes to botany and music, I'm sure that they fulfill different things for you, but is there anything that's similar about them? When you think about projects that you work on, is there anything that excites you about both in the same way?

**Megan:** I suppose for me, when I'm singing or when I'm singing in front of an audience, I'm very present in the moment. And when I'm doing fieldwork, working with plants, or when I'm gardening, that is about the most... I don't find meditation easy. My brain talks to me a lot. So something that gets me out of my own head is very much... Doing that kind of observation of nature does that.

**Alie:** That's a really beautiful thing. That's gotta be such a great incentive to do fieldwork too. [*laughs*]

**Megan:** Yeah. And I think it's also something that... Doing this work that I chose for logistical reasons – working on street trees – it brings me into contact with what those trees, and what public trees, mean to people. And certainly there have been studies in terms of the mental health benefits of living someplace where there's plenty of greenery. It's clearly not just working for me, that sort of calming, meditative aspect to being around a tree that takes you out of yourself, where you can just observe the wind going through the trees or you can hear... Outside my door right now there's a walnut tree and you can hear the sound of the squirrels eating the walnuts. [*Alie laughs*]

**Alie:** And you said, 'street trees', in particular. How do you differentiate a *tree* tree and a *street* tree?

**Megan:** I call something a street tree if it is something that is planted, usually by the city, in the little hellstrip that's in front of people's yards.

**Alie:** Is that called a hellstrip? Or do you just call it that? *[laughter]*

**Megan:** It's not the official name of it, but it's something I sort of picked up. There's a blog called *Garden Rant*, I think, that first introduced me to that. And, I mean, it can be a heaven-strip too, but for a lot of people it's a hellstrip. *[Alie laughs]*

**Aside:** Megan says that, generally, the city is responsible for the hellstrip, but sometimes the homeowner will just go out and plant something in there and nobody cares or catches them. Maybe a business will prune some branches that cover their signage or chop down a tree without getting caught. Then there's nonprofits like TreePeople who sometimes care for the street trees if the government is neglecting them. Street trees are all over, which makes them both familiar and intriguing, but easy to get to.

**Megan:** I needed some aspect that I could study that was nearby and that was inexpensive for me to study. And that's when I remembered that there had been carob trees near my grammar school and that there were, in our region, a number of street trees that were carobs. That's a tree fruit that I can study 365 days a year. So that was my initial approach to it.

**Alie:** Perhaps you're biased, perhaps you're not: Is carob the best street tree?

**Megan:** Well, for any species, the cliché thing is, "right plant for the right place." Carob is very good, and I would say it's an ideal tree to plant in coastal areas and some valley parts of California. Once you start getting north where the winter temperatures get down below 20, it's not a good thing to plant.

**Alie:** What *is* a carob tree?

**Megan:** It's a member of the Fabaceae family. That's the same family that the beans we eat come from. It's a very large family. Some of the family does what's called nitrogen fixing. They used to be called the Leguminosae. They're legumes. Carob is in the genus *Ceratonia*, which only has two members. It's one of two members of that genus.

**Alie:** Oh, wow. That's tiny, right?

**Megan:** Yeah, it is. It's really an oddball in a lot of ways.

**Aside:** By the way, I heard "the genus *Ceratonia*," and I wondered if it had any kind of shared history with serotonin, the neurochemical that keeps us chipper, but *Ceratonia* is actually closer to keratin, coming from the root for 'horn'. In case you feel horned-up for etymology.

For more on serotonin, which comes from the word for 'serum', you can listen to the Molecular Neurobiology episode with Dr. Brain, aka Crystal Dilworth, PhD. But let's resume the legume chat, on this; what has become a *pod* pod.

**Megan:** It's an evergreen tree. It's native to the Mediterranean, which is one of the reasons it does well in California, which has a Mediterranean climate... for the moment. *["Climate change is real!"]*

**Alie:** *[sad laughter]*

**Megan:** It's what is called 'dioecious', which means that it has sexes. It tends to fall broadly into male or female, although there are some that are called hermaphrodites. And what

they're referring to there, really, is the flower parts that the tree makes. And the females and the hermaphrodites produce pods. And the pods are very useful. You can use the whole pod and the seeds in various ways. [*I'd like to eat the whole thing.*]

**Alie:** And are you allowed to collect carob pods if it's a street tree? Can you harvest them?

**Megan:** Yeah, people do! I mean, honestly, even though people... Homeowners tend to get very possessive of things that are in that hellstrip, but even if the homeowner planted it, the hellstrip is not their property in most places. So yeah, you're within your rights. I would just say, you know, be polite; don't leave a mess, don't... you know, climb on people's cars! [*laughs*] But yeah, no it does happen.

**Alie:** And they're obviously edible because all of us know carob as chocolate's weird, less offensive cousin, kind of, right? Carob is called in as a substitute, correct?

**Megan:** Well, that's how we've come to use it, but it's really a rather recent development, relatively speaking.

**Alie:** Oh yeah?

**Megan:** Oh yeah! Yeah, it's very recent. I mean, if you think about it, what we think of as chocolate, that didn't even develop until the late 19th century.

**Alie:** Oh, I didn't know that.

**Megan:** Yeah, in the sense that we think of it in terms of, like, this bar that is processed and conched, you know, that it's made with cocoa butter. The cocoa butter in chocolate is from cacao. It's not from coconut. It's just processed in this very smooth way where those two things are put together. That's more of a mid-to-late 19th-century development. Whereas prior to that... if you get like Mexican hot chocolate, like Ibarra or something, and you have these cakes that are together, that's much closer to what chocolate was for years.

**Aside:** PS: If you must know, (which you must); the etymology of coconut and cocoa, it's about to go from confusing and muddled to just adorable! Sort of. So cacao, and chocolate, and cocoa (which is a highly processed form of raw cacao), those all stem from Indigenous Mesoamerican word used to describe the cacao plant. Which does not have nuts, it has seeds.

And coconuts - tropical coconuts - are neither cocoa or nuts: they're actually something called a drupe, which is like an apricot, or a peach, or cherry. 'Coco' in the word 'coconut' comes from the Portuguese word for boogeyman or hobgoblin because of its three dots that look like a creepy skull. So if you ever again order a piña colada, just know you're sipping the oily blood of a hobgoblin drupe. Tada!

So chocolate is from cacao, which is not coconut, which is not a nut - none of these things are carob, and frankly, carob doesn't give a shit. It never asked to be involved with any of those theatrics.

**Alie:** Do you think that humans were yumming up on carob before chocolate, broadly speaking?

**Megan:** I don't want to say that because the Aztecs and other Indigenous peoples of the Americas were using cacao, you know, for ages. And so, even the things that we think of as being chocolate, that process didn't develop until later. But certainly it was an extremely important drink and item in their culture.

So I really just think of it as a parallel thing, which is that, in the Mediterranean where carob is native, people were using the carob in the various ways that they use it without even knowing that such a thing as cacao existed. And likewise, the people in the Americas were using cacao and it was taking the place that it takes in their society without even knowing there was such a thing as the Mediterranean, this thing called carob.

Because of my background in the humanities, you know, I immediately started not just looking for the botanical information but looking for historical information. And if it leads me down to gastronomic history, then I go down that road, but I'm not an expert in gastronomic history, you know, so I'm sort of accruing the knowledge as I can get it.

The indications I'm seeing are that certain religions that had issues with stimulants might have been the reason why carob was grasped at as a chocolate substitute, because the chocolate was forbidden to have because it has some stimulant properties.

**Aside:** I never connected until right now that growing up, my LDS friends in the Mormon church ate carob for religious reasons. I never got that! My friend Lisette always had Tiger's Milk bars as a snack in her lunch, and those are coated in carob! A big milk chocolate bar - which is about 100grams - has about as much caffeine as a coke. Carob has none.

Also, as an American, I am deficient in the metric system, but I just found a website called 100-grams.blogspot.com that shows you what 100 grams of a bunch of different foods look like. It's so helpful! However, they do not feature any carob products.

**Alie:** These pods that are on the trees, you said you can use the pod as well as the seeds?

**Megan:** Yeah. In fact, actually, when you're talking about "chocolate substitute," what's being eaten there is actually the processed bits of the pod itself. Not the seeds.

**Alie:** [*shocked gasp*] Really?!

**Megan:** Yeah.

**Alie:** No way! I never would have guessed that!

**Megan:** You can eat them straight off the tree. I mean, if they're not too old. They won't be too tasty if they're several years old. But if you get, like, that year's crop, it's kind of a little... I don't know how to describe the texture right. It's almost like the texture you would have in a macaroon. If you crack the pod open, inside is a sweet pulp.

**Alie:** [*quietly shocked*] I had no idea.

**Megan:** [*laughs*]

**Alie:** I had no idea that you could even do that! Okay, how do you know? What if you have a carob tree on your street - on your hellstrip - and you have no idea. How can you tell? What do you look for?

**Megan:** What defines a carob, to look at it?

**Alie:** Yeah, if you were to... Because I'm sure that when you are running around Davis, you're like, "Carob, carob, carob, carob." People probably go past them all the time and have no idea.

**Megan:** Yeah, no, that's true. Well, they have what are called compound leaves, which is that, instead of just that one sort of bow-shaped leaf, that's like what most people draw if they're drawing a leaf, it's a leaf that's composed of leaflets. And that can vary anywhere

from four leaflets per leaf to twelve leaflets per leaf. The leaflets are elliptical, and they tend to come at... they're mostly opposite each other on the leaf itself. It's a sort of leathery, dark green color.

When they're mature – and a lot of the trees that were planted around Southern California as street trees are 80-100 years old – they get to about 25-30 feet tall. They tend to be more gnarled. There are ones that are straighter, of course, but... I mean, they're really beautiful to look at for that reason. Then the dead giveaway would be if you're seeing pods coming from it. *[laughs]*

**Alie:** *[laughs]* But the difference between a shrub, and a tree, and a bush... Are carob trees big shrubs?

**Megan:** Yeah. Kind of, yeah. The ones that were made into street trees, they're literally made into that in the sense that, all throughout its life somebody has been pruning its lower branches off and, like, selecting one of the trunks for a trunk. But if you left them alone, you'd probably get more than one trunk and it would still grow to like about 25-30 feet, however many feet it is. It would just be this bushier thing rather than a lollipop.

**Aside:** Okay, fun history *[sarcastic chuff]*: During the Depression, Seventh-day Adventists planted a bunch of carob trees in an LA suburb called Pasadena, hoping people would eat them and never have to go hungry. But people were like, "What are these turd trees and why aren't they chocolate?" Looking a gift legume straight in the pod mouth!

And if you're dying to know where your closest carob tree is, you can go to [iNaturalist.org](http://iNaturalist.org). And I did; I found some within two blocks of me! And now I want to go say hi and hug them, and see if I can nibble on their offerings. Sure, they're in season during the late summer and early fall but Megan says if they're one the tree still and no one is fighting you for them, just pocket what you can.

**Alie:** The seeds. What do you make with the seeds?

**Megan:** Well, have you ever picked up and looked at the ingredients of yogurt, or cottage cheese, or ice cream, and seen an ingredient that says 'locust bean gum'?

**Alie:** No! I have a feeling I know where this is going, though!

**Megan:** *[laughs]* Yeah, locust bean gum or carob bean gum; that's made from the seeds.

**Alie:** Oh my god! Is there a lot of, like, fiber in them? What makes it gluey, or sticky, or gummy?

**Megan:** There's a substance in it called galactomannan and it's a long chain sugar. And when you have these sort of long chain, kinky sugars, and I mean in terms of the shape of the molecule, then it means that they kind of lay on each other in a way that is not... it doesn't collapse very much, right? So it thickens whatever it's in. It doesn't have a strong taste on its own. So it makes it a perfect thing to put into something that you like perfectly well, you want to taste the taste of that item, but you also want that item to be thicker and easier to handle. I remember when yogurt really started becoming more popular in a mainstream way when I was young in the '70s...

**Aside:** This taught me that I don't read labels enough. *["Yoplait yogurt; get a little taste of French culture"]*

**Megan:** And for some reason, they just decided that we needed something thicker, so they thicken it up. And carob bean gum or locust bean gum, as it's more commonly called LBG, locust bean gum... that's vegetarian. And I believe it's also, you know, as long as it goes through

the right authority and gets approved, it's kosher. So it makes it something you can use in a lot of different products. And it is!

**Alie:** Oh! Why locust bean gum? Does locusts... do they just love carob trees?

**Aside:** Locust flimflam about to be busted.

**Megan:** Another common name in English, and also in German, and other things for carob is St. John's bread. So in the Bible, there's a thing where... I think it's John the Baptist rather than John the gospel writer. He was out in the desert and he was living on locusts and honey. And the locusts that they're referring to there are carob pods.

**Alie:** Oh! He wasn't eating grasshoppers?

**Megan:** No, he wasn't. [*laughs*]

**Alie:** Lotta protein though!

**Megan:** Yeah, exactly! Right! Like from the locust problems they're having in East Africa and other places right now, you know, you'd definitely go well. It would be nice if we were all cooler about eating that because it is protein.

**Alie:** Yeah!

**Megan:** It would sort of knock two birds out with one stone.

**Alie:** Without having to kill a bird; just the locusts.

**Aside:** For more on eating bugs, feel free to listen to the wonderful Entomophagy Anthropology episode back in January 2019. But getting back into Megan's research; she started to gravitate to this scrappy, hardy, underloved tree.

**Megan:** So I just thought, "Okay, I know where these carob street trees are, I can start looking around to see where other locations are in the LA area that are close enough that I can visit on a reasonably frequent basis." And I just went out there literally with a clipboard and a pencil and just started writing down everything I noticed about the plant. And I think I may even have done that before I looked up anything more about it so that I could, you know, initially keep very fresh in terms of, "What am I seeing here?" [*Lookin' good!*"]

But I did of course soon go to the web. And this was in 2013 and there was a great deal less about carob on the web than there is now, but both then, and now I was sort of astounded that a species that I knew had been around for so long and had been known for so long, had been semi-domesticated for so long; that there was very little good authoritative information either in horticultural gardening kind of side of things, or the horticultural science side of things. And that just was really odd to me. I mean, how could you be around something all the time and, like, nobody's choosing to actually study it?

**Alie:** Yeah!

**Megan:** I still can't really answer you why that is. And that's why when I do a presentation on it, I say it's like the Rodney Dangerfield of the fruit world.

**Alie:** [*bursts with laughter*]

**Megan:** Because it don't get no respect. [*Rodney Dangerfield: "I don't get no respect from anyone."*]

**Alie:** I love Rodney Dangerfield and I love you for that!



**Megan:** Yeah. Somebody was using a GIF of him the other day and I'm like, "Oh, I gotta take that for my presentation!" That tie-tugging motion! *[laughs]*

**Alie:** Yeah, amazing!

**Megan:** So by looking online, what I could find were a lot of, sort of, myths that would get promulgated about it. And what I mean by that is that if you're saying that... if carob takes 40 years to become mature, to be able to even bear its first fruit, well, then I want to see your citation for that. I happened to know that was extremely unlikely to be true. *[laughs]*

But people repeat that because there's a sort of... I don't think it's literally from the Christian Bible, but it's from, I think, a Judaic text that's, sort of like... largely that Old Testament stuff was taken from, or the tales of some Rabbi or something. And in that tale it says it took 40 years, but 40 is also a number that we see crop up over and over again, because it has, you know.... 40 days and 40 nights. 40 years out in the desert or whatever, you know? So it's more of a symbolic number.

It really doesn't have to do with what the carob tree does itself. It's just that people repeat it so much that they don't even link to, like, where there's an authoritative source. But you know, let's say, "Oh well, carob seeds all weigh the same!" And so therefore the word that we use for karat, it was used for measurement, and therefore '24 karat'. Karat comes from the word "carob."

**Alie:** Oh my gosh!

**Megan:** That's what they say. Actually, they are very similar, but they're not like, you know... You wouldn't want to use that in any kind of modern context. *[laughs]*

**Alie:** It's not a metrological standard. *[laughs]*

**Megan:** You know, if you're on *Gilligan's Island* or something and there's a carob tree there, then maybe, yeah.

**Alie:** *[laughs]* Oh my god.

**Megan:** So, there were a lot of things like that. Then the other thing that happened was that I kept coming across the name of this guy named Dr. J. Eliot Coit and I noticed that some of the few things I could find on carob that were informative were from this guy. I was lucky that, even in 2013, the California Avocado Society or whatever the successor organization was to that, had put out PDFs of some of these old newsletters and things that they had. Coit had written quite a few articles. Coit is super important in the development of avocados as a commercial product, which was really centered in southern California in the early 20th century.

**Alie:** Oh!

**Aside:** So yes, Dr. J. Eliot Coit was the granddaddy of California avocados. There you go. But, he had a sweet spot for our friend carob, also.

**Megan:** He had put together a carob demonstration orchard in San Diego County, starting in about 1949, I think, and going for a decade or two before his money ran out and that sort of thing, where he was trialing the best carob. So, they had gone around the state, where there were already lots of carob trees planted because it doesn't need a lot of water. In the days before we had huge irrigation projects here in California, that was a perfect tree to be planting because it provides a lot of shade, it provides pods if you want them, if it

happens to be a female or a hermaphrodite, and they're really tough even through prolonged drought. Once they're established they're very tough.

So, they went all over the state trying to find superior specimens of carob and they took cuttings of that to propagate. Then they also imported the best ones that existed in the Mediterranean and they trialed those carob over about a decade and a half or something in San Diego County. It led into just really interesting stories about world history and California history. In the '20s, there was a short-lived [laughs] sort of real estate... I won't call it a boom, but at the same time there was a real estate boom around citrus. They were trying to get people to come out here from back East and make a million dollars as citrus moguls. [laughs] Well, there was a smaller version of that then for carob. Coit was convinced that had ruined carob's relationship because a lot of people who weren't able to make a go of it the same way, at least that was being advertised, for citrus.

There was a period in the '20s where carob was highly popular. So, not only was it being planted more as a street tree and a public tree, but it was also being tried as an orchard tree, as a crop. One of the interesting things was in these archives was seeing pamphlets of them going, "Make your fortune in carob!" [both laugh] "We've got this turnkey operation for you! We'll provide the trees! You do this, you can see our agent and blah blah blah. Here's this photo of this bakery, and all they're doing is turning out carob bread!" [laughs] There are definitely novels and films that people enjoy a lot that really focus on that period of early 20th-century Southern California where it was just wild with all sorts of weird stuff going on, and that was one of them.

**Alie:** Oh my gosh, like [old timey voice] "Get rich quick! Plant carob!"

**Megan:** Yeah, exactly.

**Alie:** "The pods of the future." Oh my god. That's amazing. And then, did it take off in the way they expected? Not so much?

**Megan:** No, no, no. I do know that Coit was of the opinion that the experiences people had had with the way that that advertising was overblown had soured people on carob. I think part of the problem that was existing in Southern California... I, just like Coit, think that you *could* have made a go of it. It's really all about how you do it.

A good example of... California could have been doing this decades ago. Even now, it would be a good thing for California to get into because carob can be grown on ground that other plants can't handle. Even some of the ones that don't use as much water are still not tough enough to handle some of the stuff that carob can handle in terms of how poor the soil can be, and carob can still give you a crop. So, it makes a lot of sense in the day and age where we have more intense weather going on, we have more intense droughts. What Coit knew was a problem, and what probably was a problem for people establishing anything here in the '20s, is that we didn't have the machinery that there needed to be to do what's called kibbling.

**Alie:** What is kibbling? What?!

**Megan:** [laughs] Yeah, it's called kibbling. It's basically a machine that breaks the pod into pieces and then extracts the seeds from those pieces and separates out those pod pieces from the seed. So, the seed can be processed for locust bean gum, which has been used even before they were putting it in yogurt, they were using it to like... Have you ever bought fabric and the fabric is stiff?

**Alie:** Yeah, yeah.

**Megan:** That stiffener is called sizing. I don't know if that's currently what's used, but certainly in the past, carob bean gum could be used as sizing for fabric.

**Alie:** Oh my gosh! Okay. So, we've figured out a way to have all of these different uses for different parts of the plant.

**Megan:** Oh yeah, and the wood is gorgeous. I don't know if you've ever seen anything, but if you went online and you put in carob wood, you would see amazing artwork and sculptural-type things that have been made for it. It's very twisty, is my understanding from woodworkers, so it's not a good loadbearing wood, but in terms of smaller pieces of furniture, like using it for live edge tabletops... I think the most unusual thing I've ever seen out of a salvaged carob is a Les Paul copy guitar where the veneer was carob.

**Alie:** Amazing!

**Megan:** It's this gorgeous reddish wood, the heartwood is really gorgeous. So yeah, that's why I think it's so disrespected, it's like *The Giving Tree*. Like, "You took this from me, you took that from me, you never appreciated anything I gave you. I gave you pods, I gave you seed that you could make this really useful stuff out of, and when I'm done with my life I give you my wood, and still you don't respect me."

**Alie:** Aww, I'm gonna cry! What about the leaves? Don't tell me the leaves can cure, like, dermatitis or something. [*Megan laughs*] I'm willing to believe anything.

**Megan:** If it were better funded, it would be interesting to see what you could do. Certainly, when I started looking for scientific papers, there wasn't a lot out there on it. I did find a fair amount of papers looking at the chemical composition of various components that the carob tree makes because the carob is full of phenols. Those are plant defense compounds. Those sorts of compounds often have medicinal uses. So, certainly people have been doing research on that sort of thing although I don't know of anything conclusive yet. Partly because it's not super sexy.

**Aside:** Okay, so I started digging around and I found a 2017 study titled, "Chemical constituents and pharmacological actions of carob pods and leaves in the gastrointestinal tract." Not super sexy? How dare, how dare? But the abstract raved of carob, that this plant possesses anti-inflammatory, antimicrobial, anti-diarrheique, antioxidant, anti-ulcer, anti-constipation, *and* anti-absorptive of glucose activities in the gastrointestinal tract. This was just in 2017! People are still finding out cool stuff about it.

Other sources say it offers a plant-based amino acid linked to collagen production that's only typically sourced from animal products. It's also high in fiber, and calcium, and iron, antioxidants, protein.

Another study that came out in 2018 said that it could be studied as therapy for neurodegenerative disorders. Our friend carob! And yet, people just let the pods fall on their lawns, like leaving money on the table.

**Megan:** It doesn't get funded anywhere near as much as other things do. And then as far as the leaves themselves, I know goats can eat them. If you go on Twitter and you do a search on carob, the very first thing you're going to find is the plant equivalent of airline food jokes, [*Seinfeld: "What's the deal with airplane peanuts?" followed by laugh track*] which is carob jokes. [*both laugh*]

It is the most formulaic, repeated joke, you'll see it weekly. When you get below that layer, probably the second most numerous thing you'll find about carob on Twitter would be people, both businesses and actual pet owners, showing photographs of pupcakes, as they call them, or various baked goods that are made for dogs that are made out of carob.

**Aside:** If you're not having the best day, you can change that by Google Image searching the words: eating a pupcake. Corgis in party hats, lapping at frosting. You got a mutt in a tiara seizing a treat like a shark attack. Ohh! Welcome to Heaven. Population: carob.

**Megan:** When I try to get at why it was that carob doesn't get respect, there's not only the sense of betrayal that people feel because... It's sort of a misplaced anger. If you've got a parent or somebody you trust, and you're a little kid, and that parent or somebody you trust is saying, "Here try this, it's chocolate." [*Alie laughs*] And then you have carob, right, and it's not the same thing, but you can't appreciate that, you just feel betrayed. So, people go all the way through their whole life thinking that carob sucks. No! It sucks that you're relative did that to you. [*both laugh*]

I was telling somebody during this presentation, it's like, if I am making spaghetti sauce from scratch and one of the ingredients is anchovy paste, which comes in a tube, and somebody decides to play a prank on me and switches out the tube of anchovy paste with a tube of toothpaste, and I put that in my spaghetti sauce, I'm not gonna be very happy about it. I like toothpaste just fine when it's doing what it's supposed to be doing and when it's what I expect. [*laughs*] I have to go on the record here. I love chocolate and I love carob. And they're different things.

**Alie:** How do you eat them differently, like for you?

**Megan:** Well, you can sort of makeover chocolate recipes. Especially for people who have religious reasons, or they're allergic, and there are people who actually do have chocolate allergies. You can achieve a flavor profile with carob that has enough similarities to maybe be somewhat satisfying. The difference there is that you know what you're doing and you know what you're getting into, it's nobody telling you, "This is just like chocolate."

**Alie:** Right, right.

**Megan:** It's like you're trying to quit sugar or whatever and so you go to stevia. You know that it's not sugar, right?

**Aside:** Someone's gotta make a cookbook. Megan, I'm talking to you.

**Megan:** I'm hoping to come out with a carob cookbook at some point when I, you know... in my copious spare time. [*laughs*]

**Alie:** Yeah.

**Megan:** I really think carob ought to be an ingredient on *Iron Chef* because people don't think creatively enough about it. It would be really interesting to see if you gave it to some really top chefs and say, "Here's your ingredient, what are you gonna do with it?" You know, they would have to think more creatively about it.

So, I try to return to it, what its flavor profile is like and go, "What pairs well with this?" It tends to pair well with spices like cinnamon, ginger, cayenne, and cardamom. You know, things like that. Probably Chinese Five Spice, though I haven't tried that yet. Basically, I made a cheesecake that has a crust that's made out of super sharp and textural... like

those Nabisco ginger snaps. Then I fill it with cheesecake that's carob with all of those spices in it, except I'll go a little light on the cardamom if I'm putting the pepper in. [*"That sounds splendid."*]

**Alie:** That's so good.

**Megan:** Yeah I get good feedback on it. I usually can convert people with that. I can't tell you how many times I've had people who like to diss carob or whatever. I make a carob-infused rum.

**Alie:** Oooh!

**Megan:** No matter how people talk about how much they think carob sucks, I've converted every single one of them with that.

**Alie:** [*laughs*] I love that you're out there being, like, a champion for carob. It does need to be looked at differently. It needs to be appreciated for who it is, not what it's not. 100%.

**Aside:** Can I tell you something bananas? Carob-covered bananas. So in 2019, a *Food Business News* article was forecasting culinary trends for 2021, which is now. And among them? Your buddy carob. Food trend reporter Elizabeth Moskow, wrote back in 2019 that 2021 will be carob's year because, "They didn't position carob right in the '70s. It's not a chocolate replacer... When you're comparing anything to chocolate, it's going to fail." Moskow continued to heap on pod praise saying, "I wouldn't be surprised if Starbucks came out with a carob syrup in 2021," saying, "It gives an earthy, yummy, naturally sweet flavor." Carob: Get it!

**Megan:** And if you live in California or one of these Mediterranean climates... It can actually go even a little further than that. I mean, Arizona is not a Mediterranean climate and there are carob trees that have been there since the early 20th century as well, and they're still growing there. And there's a little bit of carob in Florida, although that's really not an ideal environment. I'm given to understand some people try it in Hawaii too. Florida and Hawaii are a little too humid for it. In terms of that, sort of, tough tree where you're now moving into this drought-prone, superhot climate and... Have you heard the term 'urban heat islands'?

**Alie:** Yes. Yes, I have.

**Megan:** I certainly saw it in my research with carob because, you know, I think in a two or three-block stretch of one street that I started my study on, within just a couple of years of doing my study, 11 of these matured carob trees had been cut down.

**Alie:** Oh my god! Why?

**Megan:** There's a variety of reasons. Like you were saying, how do you select the right street tree and that sort of thing? And there are definitely, like you were mentioning, disability issues in terms of sidewalks when they start to get pushed up. When carob first started getting planted in California we didn't have this, you know, profligate irrigation. We didn't have this culture of everybody gets a lawn. And so carob was a wonderful tree to plant then. And you know, there were other species that we also had that were very tough to drought and didn't need a lot of irrigation. But then when people moved into those areas and either they put in sidewalks that weren't there before, or they definitely were putting in lawns that weren't there before.

And the tendency in California is that you're going to be watering your lawn maybe three or more times a week for 15 minutes, right? That's a shallow kind of watering. If you put all your water on the surface, well, they're like, "Where's the water? Well, it's up top. I'm going to put my roots up top because that's where you put the water."

**Alie:** Ooooh!

**Aside:** Trees know what's up, and what's up, literally, is the water at the surface. Also, what is profligate irrigation, you ask? I only knew one of those words and it wasn't profligate. So, profligate means 'recklessly extravagant or wasteful in the use of resources'. So, what Megan is saying is that lawns in a desert are a great way to piss away good water.

**Alie:** So that's why you see sidewalks that might be uneven or they're getting pushed up by, really, surface roots?

**Megan:** It's not always the reason, but in California that's often the reason. I mean, there are some species that will tend to do that. For instance, there are certain fig species that would be more likely to have those big sort of roots pushing everything up. Fig, the kind of eating fig that we have, can take a fair... It's also a Mediterranean native but probably more to riparian areas or something.

**Aside:** Maybe I know what riparian means, maybe I don't. But if I were to look it up I would find out riparian means 'near a river'.

**Megan:** And so it craves water. It can deal without it for a while but it likes it better so it'll seek it out. But for other species like carob, if you plant carob from a seed where it's at, it'll grow a big taproot because it goes looking down for water.

**Alie:** Oh, that's called the taproot! I didn't know that. It's *tapping* the soil, sort of, tapping groundwater?

**Megan:** Yeah. Well, a carrot is a taproot.

**Alie:** Oh, I've never even thought about that! And it's just digging deep, being like, "Hey, where's the water down here!"

**Megan:** Yeah. The part we eat is the taproot. With carrot, if you were able to preserve the whole root system, there'd be a whole bunch of other root hairs and things sticking out. But we eat the taproot.

**Alie:** Oh, I never even thought about that.

**Aside:** So when you see photos of a carrot but it looks like two legs and a tiny dong, that's less weird than we think. And if the "eating a pupcake" search wasn't enough to send shimmers down your spine, Google 'carrots that look like dicks'. But not if you're somewhere you can't cackle, because it's really good. [*warped*] Poor carrots.

**Alie:** I always am like, "Oh, sorry, you did such a good job growing. And here I am just coming and being like, 'thanks'." It's too many emotions in botany! Who knew? [*quietly*] You probably did.

**Megan:** [*laughs*] We can look at it as a sort of botany of desire thing, which is a symbiotic thing. We help propagate them. We help keep them alive, too.

**Alie:** That's true. That's true. "We will plant your children if we can eat you." They're like, "Okay, I guess... I guess just plant my kids. Plant my kids. That's all I ask."

Can I ask you some listener questions?

**Megan:** Yes, yes.

**Alie:** Is that cool? Oh my gosh! We've got some great ones.

**Aside:** Okay, but before your Patreon questions, just a quick word about sponsors who make it possible for us to donate to a cause of the Ologist's choosing. This week, Megan selected Foundation for Science & Disability (FSD). They are a nonprofit organization affiliated with the American Association for the Advancement of Science. FSD promotes the integration of scientists with disabilities into all activities of the scientific community and of society as a whole. A donation went to them in Megan's name and you can find out more at STEMd.org, which is linked on my website as well as in the show notes. That was made possible by these Ward-approved companies:

[Ad Break]

Okay, your carob questions.

**Alie:** This goes to your cultivation discussion. Meghan McLean wants to know: When buying carob, how does one pick out the quality carob from the crap carob? Are there different types as found in chocolate? How do you go carob buying?

**Megan:** I'm really glad they said that because a lot of people, when they're kind of crapping on carob because they think it's so far short of chocolate, they sort of conveniently forget that there's a big difference between cheap Easter 50% off chocolate and Jacques Torres. There's a whole spectrum of chocolate quality.

And just as that's true, there is a spectrum of carob quality as well. I would say, for me, what's important is that... Carob is naturally sweet. The pods of the best selected varieties are about 50% sugars. Just naturally off the tree, you could eat the pod pulp and it would be sugary.

**Alie:** Ah!

**Megan:** So adding extra, you know, cane sugar or whatever to that just makes it more sickly sweet. And especially if you're doing this sort of bargain bin and bulk bin thing where you've got a lot of hydrogenated vegetable fats that are added to make it more chocolate. You just get this kind of chalky gross thing. That's not good carob and that's what most people have an experience with. There are companies like SunSpire that make both kinds available, a sugar-added and a no-sugar-added version. And I would absolutely encourage people to try what carob tastes like with no added sugar.

**Alie:** Oooh, okay.

**Megan:** I'm not trying to plug specific brands. It's just that, you know, unlike chocolate where you really do have this complete galaxy of brands to be choosing from, there's just not that many people in the US who are making products available. Even in a bulk bin they will, you know, if you went to someplace like Berkeley Bowl in Berkeley or whatever, you would see it labeled as SunSpire.

The importer for Australian Carob Co. products in the US, the sole importer and distributor, is a company called Azure Standard. They have quite a variety of carob products available including Australian Carob Co.

**Aside:** I snooped on reviews online and one said, “I’m not that familiar with carob but wanted to give these a try and I’m glad I did. Lovely, interesting flavor. Not chocolate but I wasn’t trying to fool anyone.” That’s the spirit!

So you have yourself a bunch of carob: either in powder form or syrup:

**Megan:** And you were asking me how I use it. The two major ways you’re going to get ahold of it are going to be what’s called carob powder – sometimes called carob flour – and carob syrup or molasses. If you went to a Middle Eastern grocery, you would likely find carob molasses there.

**Alie:** Oh!

**Megan:** So, if you live in a city that has a Middle Eastern population large enough to support one or more Middle Eastern groceries, you will probably find carob molasses or carob syrup on the shelf. And I would use that... when I make my cheesecake, for instance, I’m using that.

**Alie:** Can you add that to coffee at all? Is it used in that way?

**Megan:** Yeah, it’s good. I love it added with coffee. Yeah. I mean, I don’t know how it is when you like your coffee black. But for me, I sort of like my coffee to be as close to coffee ice cream as possible. *[laughs]*

**Alie:** Yeah, me too! Me too! *[laughs]*

**Megan:** And it gives it a really gives it a nice richness. It sort of enriches the flavor profile, I find. As far as the carob powder, that’s a lot easier to come across. Bob’s Red Mill sells that but there are also other bulk places that sell it. That you can really use one for one the same way you would use cocoa. If you have a chocolate crinkle cookie recipe you could make it out of that.

And again, I would probably add those extra spices in there, not that carob absolutely needs it. I think adding the other spices helps get people out of the mindset. I didn’t have hippie parents who forced it on me so I don’t have those associations with it. But for people who do, I find that the added spices kind of gets them out of the frame of mind that this is some cheap, you know, “I wish I were having chocolate instead,” or whatever.

**Alie:** Right. Ethan Bottone wants to know: I’ve only ever heard of carob from an episode of *Hey Arnold!*. Do you know about this pop culture reference or are there others?

**Megan:** *[laughs]* Well, I have to say, I’m older gen X, so I don’t... I’m not sure that I... is this Arnold the PBS cartoon or something?

**Aside:** *Hey Arnold!* was a cartoon that featured one character, a child named Chocolate Boy, who was just a jittering mouth-smearing fiend who tries to quit his vice by titrating via carob. I don’t think it works out for him. *[Chocolate Boy, obsessing in withdrawal: “Chocolate. Chocolate. Choocoolaaatte...”]*

**Alie:** Do you ever catch in TV shows or movies carob getting hated on, or have they ever used it on, like, Food Network in a respectful way?

**Megan:** I haven’t seen it on places like Food Network or whatever. I wouldn’t be surprised if it starts coming into that because, as I told you, when I first started looking for this stuff in 2013 there was a great deal less out there. In fact, even the Wikipedia entry was really, really sparse. And the Wikipedia entry is a good, reasonably beefy, entry now. But, just as there’s a sort of locavore movement other places, and just as a lot of other places are



trying to rediscover their, you know, Indigenous regional cuisines, the Mediterranean has been doing that as well. And so, Cyprus, and Greece, and Italy, and other places where carob has been...

An aspect, I think that is really important of this is, like, in the US, and the UK, and places where that they had these sort of health food movements, did this sort of disingenuous stuff with carob. The reason it wasn't respected in its home area quite so much seems to be linked to the fact that, you know, again, like *The Giving Tree*, it gave and it gave during some of the worst times they had. They had World War I, The Great Depression, and then there was The Spanish Civil War, and World War II. And all through that period, middle-class and poor people were surviving on carob because shipping lanes and things were closed down during the war. Carob is a source of sugar, and from sugar you can also make alcohol, by the way.

**Alie:** Aha!

**Megan:** It's like anything, you know. You can like something but if you're eating it 24/7 for weeks at a time, you might get so that you don't want to see so much of it anymore.

**Aside:** Hence, a lot of people just stabbing carob in the back, slandering it, comparing it to something else entirely. Jonathan Kauffman wrote a 2018 *New Yorker* piece titled: "How Carob Traumatized a Generation."

Now, unlike the nutty pleasant flavor of carob, opinions on carob are not mild.

**Megan:** What I'll see is a quote that says, like, "Carob is the devil's raisin," or something like that. [*clip from Brooklyn Nine-Nine: "Carob is Satan's raisin."*]

**Alie:** Oh no!

Nicklas Zemp, first-time question-asker, wants to know: I've read that the processing involves using an acid or roasting to remove the skin of the seed. Has the same effect been achieved through fermentation? Essentially, like, how is it processed?

**Megan:** The factories that do this have only recently started coming online. When I first started looking I knew that this kind of processing happened but I couldn't go... you know, it wasn't like these factories had websites even that late in the game. They're starting to now, though. And I've seen progress photos of it being processed. You have to ask not just what's possible, but given that we're talking capitalism here, whatever's the cheapest is what's probably going to get done.

**Aside:** Okay, so after you harvest a bunch of neglected, overlooked carob pods, you can kitchen process them by washing them and boiling it in just enough water to cover or steaming until tender, and then you can cut open the pods. You remove the seeds and you cut the pods into small pieces and dry them out. Then you put the pieces in a blender, and grind into a powder, and just process only small amounts at a time, according to some directions I found on Permaculture.org. The seeds, however, get turned into locust bean gum but they are really hard so don't chomp on them with your teeth, please.

And I did read a few studies that commercially processed carob powder has fewer beneficial compounds than home processed. Another good reason to ask your neighbors if you can eat their lawn trash.

Now, what if you want to grow your own lawn trash? Some Patreon folks: Austin-based Sutton Taggart, Maria Jouravleva's partner, Laura Springer, and Kathryn Jordan asked about this.

**Alie:** We have a few people that want to know, I'll put their names in an aside, if they can grow carob in their backyard? One person, Kathryn Jordan from Saint Paul, Minnesota. Can you do that or do you have to be in Italy, Australia, or California?

**Megan:** Well, in Minnesota, if you have a greenhouse that you can keep to non-humid Mediterranean conditions, then yes, you would be able to grow carob. *[laughs]* I don't own any land so mine are grown in pots. That's not at all the ideal for what you're supposed to do but that's what I do. And so it is certainly possible to grow them in a pot. Once you get a carob into a pot you're still going to have to water it more often than you would normally have to water it. But if you live in a Mediterranean climate or very adjacent to it the way that Arizona is, then yeah, you can grow it.

And I would highly recommend that people do so because part of the way it's drought resistant is it has lower water needs. It has lower water needs partly because it's got very leathery leaves that make sure that the water doesn't come out of it as easily, but also partly because it's not growing as fast. And so it is a bit of an investment. I mean, it's not going to grow like a weed. It will take a little while before you see something that grows taller than you are.

**Aside:** Patreon Rayden Marcum wrote in and said that there's a Jewish folk tale about an old man being scorned for planting a carob tree because they supposedly take 70 years to fruit and he won't be around to enjoy it by then because he's already so old. Which, I think, sounds very mean. But Rayden wanted to know: Is there any truth to that, or does it just make a good cautionary story?

**Alie:** Is it true that it takes 70 years to give you pods? Or is it that flimflam?

**Megan:** No. As I said, I think that came out of some sort of religious text or story rather than the reality. I should emphasize, because there's so little funding and because carob does so much and is so good even as it is, there actually has been no breeding effort whatsoever that I know of. What I came to grad school to do is to learn how to be a plant breeder. It's kind of remarkable that it does so many things so well and this is just with very little improvement other than just going around the countryside and picking the best one you see and then clonally propagating that.

**Aside:** Clonally propagating means that instead of just rolling the dice and planting some seeds, agriculture relies on things like grafting from a parent tree to ensure that they get really good genetics for good fruit. Apples, bananas, tons of crops are clonally propagated. Megan explains:

**Megan:** In the Mediterranean and in Australia, what they do is they often will either plant a seed out in the field, and then when the seed is large enough to graft, they graft or bud it. If you are grafting or budding, you can get carob in anywhere from three to eight years. It kind of depends. If you're growing it from seed, it's definitely going to be longer, and I'm getting the sense that it's like eight to twelve. Honestly, if you were to plant a peach from seed, you would also be waiting a while before you got a fruit off of it.

**Alie:** Yeah, yeah! I have two more listener questions, if that's okay?

**Megan:** Yeah, sure!

**Alie:** Michelle Dempsey, Ava Schaefer, and Heather Nannette all want to know... their questions are similar but different. I'll read Michelle Dempsey's. Michelle Dempsey says: I've seen articles suggesting chocolate has nifty qualities like containing antioxidants, has blood pressure-lowering abilities. What sort of nifty qualities does carob have? And Heather wants to know is if it produces endorphins.

**Megan:** Because it doesn't have that stimulant property, no, it doesn't produce endorphins like that. It does have its strong points just as chocolate also has some strong points. What it doesn't have that chocolate has is lots of funding to study what those are. *[laughs]* Because any group that sells something will usually fund scientists to find out: What can we say about our product? There's a lot of funding like that.

It's one of the things that... Going back to school has been super interesting to me because it's given me the ability to be a lot more critical about these sort of things. I had a broad education before, but it's just made me realize how much more critical we have to be when we read certain things, especially if they're not linking directly to the study.

Yes, I'm sure that there are things that chocolate does. Carob has a slightly different profile. It's somewhat high in protein for a fruit. It is high, I think, in potassium. It's a relative thing. I don't know if I'd put it up next to a banana. It's a slightly different nutrient profile, as well. But as far as, like, them being a miracle cure for whatever, that all remains to be seen. I am not going to say it doesn't exist. You have to have the funding to go looking for that sort of thing.

**Alie:** We have some first-time question-askers; three of them had the same question. TeraTigerStudio, Jolene N. Louter, and Samantha Ryan. Samantha said: People tend to go all-in to the latest food trends without considering the environmental impacts of our increased demand.

And Samantha had seen a lot more carob products in grocery stores in the last few years – hey carob, bring it on – but Samantha is curious as to how sustainable it is as a food source? And Nicklas Zemp also thinks that's a solid question.

**Megan:** I think it's really rather sustainable, because as I said, it can be grown on lands that are marginal for other sorts of crops. It can take a range of pH but it tends to grow in more alkaline, rocky. It can grow even anywhere from... Adobe soil like we have in Southern California is not ideal for it, but there's these 80 to 100-year-old trees there.

Like anything, it's how you decide to go about it. One thing that you can say will keep it from being too destructive is the fact that it actually doesn't like a lot of water. If you plant it some place that shouldn't be getting irrigated the whole heck of a lot, carob won't do well if you irrigate it a whole heck of a lot. So, that actually keeps it in its lane, so to speak.

**Alie:** Nice! Good to know! Last Patron question that I thought you would appreciate. Wells Howe had a question: What the heck even is a carob? Why have I never learned that those dried brown snake bananas hanging in the trees are edible? So, Wells Howe's life is now changed because of you.

**Megan:** *[laughs]* I like snake bananas. It's a very good band name. *[laughs]* When I break off from my band and do a solo project, right?

**Alie:** Snake Bananas!

Last questions I always ask. Last two. What's the shittiest thing about carob? What sucks the most about the trees, or the process, or anything? Whatever gets your goat?

**Megan:** There's a lot of things that I could come up with but I think I'll come up with that item which is that they're so underappreciated, is what sucks for me. And that they're maltreated. A lot of the stuff that people like to complain about about them.

Cities will say, "Oh, this is unsuitable for planting here." And it's like, "Well, if you don't hire people whose expertise is trees, if you hire people whose expertise is being in a cherry picker and using a chainsaw and they don't know about the species they're dealing with and then you maltreat the species, why are you blaming the species?"

**Alie:** Right!

**Megan:** That's the worst thing, I think. It's just knowing what an amazing, cool plant this is for Mediterranean climates and how, really selflessly, it gives and how much crud it takes. I think that's the worst thing. Certainly, in the process of doing the fieldwork where I was going from street tree to street tree, it really hurts when you come back and you see a stump.

**Alie:** Aww. Ugh, I know. I cry every time I read *The Giving Tree*. Every dang time.

**Megan:** I tweeted out from my account today a 2016 story from the *Eastsider LA* which was a photo of a carob tree that was cut down and somebody had made a memorial to it. It had gold ink on a black background... it had this whole essay but in big, big letters, was like: WHYYYYY?

**Alie:** Noooooo! [*exasperated and sad*] No one listening to this will walk by a dried brown snake banana the same way. They'll say, "Thank you. And maybe, if you don't mind, I'll chew on one of you for a moment as I walk down the street."

**Aside:** As a person who walks down the street, I am privileged in that sidewalk cracks don't derail my day or typically threaten my life like they would some folks, especially those who use any mobility devices. One thing I love about Megan is how great of an advocate she is for all kinds of people. She founded UC Access Now this past July on the 30th Anniversary of the Americans with Disabilities Act's passing. She released something called a demandifesto calling for better design, and inclusion, and accessibility, not just of herself, but for other University of California students with disabilities at every campus, because she's a badass with a big heart.

**Megan:** If you have a really obvious disability, you don't have a choice, everybody knows you're disabled. In my case, nobody would know unless I told them. It doesn't matter that on the books that it's illegal to discriminate on that basis; the fact is that people do. Just like people still discriminate about race, sex, and other things that are illegal to discriminate about. I made a decision very early on that I had to be very out about it because I figured, nothing really changes... It's kind of like, Coming Out Day is for the Queer Community, which is that it's a risky thing but if we all do it together, then people will realize that this is a not weird, rare thing they can easily 'other'.

We are their friends; we are their family. And I think with invisible disabilities at least, the more out people feel they can afford to be or willing to take the risk to be, the more we'll realize, "No, look. This is not this weird, rare 'other' thing that you're trying to make it. This is part of the spectrum of humanity."

It was not my goal to be an activist. In fact, one thing I found other disabled scientists have said, and it was certainly my experience as well, which is that if you have the

temerity to bring this up, they say, “Why don’t you go be a disabled advocate? You’re clearly not interested in science.”

**Alie:** As if you can separate those parts of yourself. As if you aren’t interested in more than one thing. That’s very frustrating. What do you say to that?

**Megan:** It’s hard to know what to say to that. By this point, I should start rehearsing an answer to it, really. Because in the moment, you just get so furious about it. If anything, I am showing how deep my interest is that I’m willing to forward through all the crap you’re throwing in my way.

**Alie:** Have you gotten to see the way that your efforts have impacted other people in your sphere and other people in STEM?

**Megan:** Yeah, it’s a lot of work and you take the victories where you can get them. *[laughs]* I’ve had people who’ve told me, either publicly or privately, that I really helped them realize that the way they were communicating was inaccessible and that it wasn’t that hard to make it accessible, so they’ve changed the way...

There are a lot of accounts on Twitter; this even includes government accounts. Here’s something you could do: watch Twitter. If you see your state, or county, or a politician on their official account, this is how you can check if whether it has what’s called ‘alt text and image description’ and you can certainly watch for it. If it’s a video, for instance, you can watch whether it has captions. If it’s a press conference, did the conference have an ASL interpreter there? Are there video descriptions going on for the blind? These sorts of things that they can just check for. It’s not too hard to then talk back to those public Twitter accounts and hold them publicly accountable for that.

What people who are blind or have visual impairments use to access the internet and Twitter is something called screen reading software. The screen reader, if you don’t put anything in the alt text thing, the screen reader will just say, “Image.” All the people who are blind or visually impaired, whether they’re in STEM or not, they’re just hearing. “image.” *[“That sucks.”]*

And of course, this exists for web pages as well. There’s alt text on web pages and stuff. In Twitter, the alt text character field is a thousand characters, so it should give you a little space to do that. If it’s too big for that, then you can always do a Google Doc and then link to the Google Doc in the tweet so that you can give blind the vision. And don’t censor it for people. If it was important enough for you to tell people who are sighted, then tell people who are blind or have visual impairments exactly the same thing that you’re giving to sighted people.

**Alie:** Yeah. I don’t even know that there was an alt text field.

**Megan:** Why would you want to make accessibility something that you have to dig for and opt into? Why isn’t that the default?

**Alie:** Yeah. Yeah. God, that’s such a good point. That’s something that, unless you hear someone speak out about it or unless you know someone in your life who that affects, you might be just completely naïve to it. I think the work of advocates... I imagine that must feel very heavy at times, how much education needs to happen.

**Megan:** In terms of my physical disability, I’m running at over 25 years of having it right now. Because I wasn’t born disabled, I was raised in this ableist society and very much with an ableist view of things, it’s taken me that long to throw off all the, you know... I’m still not

entirely 100%. But you have what's like an internalized ableism. Even though I was very out about it from the beginning, I also still had that sort of idea that had been inculcated into me that, "Oh, I don't want to be a problem for anybody." Rather than saying, "No, wait a minute. I'm just as worthy of these things as you are."

**Alie:** Any other advice you would want to give on anyone who is disabled in STEM or is looking for a career or to start their journey that you wish you knew? Any kind of words of wisdom? Or pep talk?

**Megan:** There are probably other social media networks but I know I probably wouldn't have made it to grad school if it not been for being on Twitter. Science Twitter helped me find out about things that I didn't know existed. And what it's done, especially lately... When I'd first gone on, there were not a lot of visibly disabled scientists. What I mean by visibly is that they're out about it. A lot of social movements and the radicalization of various ways have gone on, in terms of opening people's eyes to forms of discrimination that had been going on for a very long time, are starting to open the doors as far as disability and the awareness of ableism as well.

What that means is that you're more likely to find disabled scientists to speak with. Even if they weren't mentoring you, just knowing that there are other disabled scientists out there really, really, helps.

**Alie:** I love the different hashtags and I love that you can pop on them, and then follow a bunch of new people, and then just make a bunch of new friends online who tell you what their lives are like. And you're like, "That's great! You just made my world better!"

**Aside:** And speaking of the best stuff:

**Alie:** But your favorite thing about carob or carob trees? What just lights your whole heart up?

**Megan:** Again, there's so many things to choose from but I think, certainly as far as the work I've done, what's most gratifying is what you just said which is you don't see it the same way. People, when they see you standing in front of their street tree taking notes, they kind of come out of their houses like, "What are you doing?" I've had that experience a couple of times where people have had a talk with me and once I assure them that, "No, I'm not from the city. No, I'm not here to case your house for burglary." I've had people come back to me and say, "I totally took this tree for granted before and it is so much more interesting than I thought it was, and I really want to make sure I'm active saving these trees now."

**Alie:** [*excited*] Oh, my gosh! That's so beautiful! That must feel so gratifying!

**Megan:** It really is! It's hard as a student. I'm sure I'm not the only one who struggles with this but for somebody who comes with my Bachelor's in Art especially, you know, there's sort of an inferiority complex you have around whether you're really a scientist or not. At least I can say that I'm effective enough at communicating the sorts of facts that I've learned and what I've observed from my fieldwork that I'm able to persuade people. And really, what more do you want? Because most people are not going to be looking up scientific journal articles.

**Alie:** Exactly. To have the passion and the will to communicate it is such a service to the data that you're collecting and the appreciation and preservation. Oh my god! This has been so fun! Thank you for letting me pepper you with so many spicy questions. I've learned so much!

**Megan:** Oh, sure! No, my pleasure!

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Ask giving trees selfish questions, but make sure to appreciate them for who they are and let them live. And ask smart people basic questions because you never know what is right under the surface in the treasure trove of their knowledge.

Follow Megan Lynch, find her on Twitter at [@May Gun](#), and [@AccessUC](#). There's going to be links to those socials in the show notes and at my website [AlieWard.com/Ologies/Carobology](#) as well as a link to [Megan's first album](#) and so many links about carob's history, where to find it, and more. Again, check iNaturalist to look for the nearest one. Tell me if you eat them. Please. I would like to know.

I am [@AlieWard](#) on [Twitter](#) and on [Instagram](#). *Ologies* is [@Ologies](#). Merch is available at [OlogiesMerch.com](#). Thank you to Boni Dutch and Shannon Feltus for managing all the merch. They host a comedy podcast called *You Are That*. If you're interested in hearing how *Ologies* is made, you can check out Renee Colvert's recent episode on her brand-new podcast called *My Pandemic Makeover Spectacular!* She had me on as a guest and she asked me all about life-work balance, and quitting your day job, and Renee is just a human delight. I love her. I'll link to that on my website, too.

Thank you Erin Talbert for adminning the [Ologies Podcast Facebook group](#). Again, if you're looking for a hot date and are single, I don't know, join the Facebook group Flirtology Singles. None of my business! Thank you, Emily White and all the transcribers for making transcripts available and accessible. They are at the link in the show notes – for free – alongside bleeped episodes for school use. Thank you Caleb Patton for bleeping. Thank you to sweet, sweet, Noel Dilworth for all of the interview scheduling and calendar wrangling.

And thank you to assistant editor and fiancé and midnight cheerleader, Jarrett Sleeper, who hosts quarantine calisthenics every weekday at 9am on Twitch [@Jarrett\\_Sleeper](#). And of course, the locust bean gum that holds this pod together, lead editor Steven Ray Morris, who hosts the podcast *See Jurassic Right*, *The Purrrecast*, and now a brand new one, a new *Star Wars* podcast called *Everything But the Movie: A Star Wars Book Club Podcast*. I will link that on my website as well.

And if you listen through the credits I tell you a secret and the secret at the end of this is that I got some carob chips that I've been saving to eat. And I'm not going to make any gross smacking noises because I know nobody wants that, but I am going to try one right now.

*[eating carob chips delightedly]* Mmm! Dude, this is good!

If someone gave it to you and said, "Try this chocolate." You'd be like, "Hmm, that's kinda whack chocolate." But if you just try it being like, "Try this." It tastes like a really nice smokey caramel.

Okay, go get yourselves some carob. Berbye!

*Transcribed by:*

*Madison Campbell*

*Ruby-Leigh Tonks*

*Aveline, a proud carob fan since the '92*

*Natasha Shipman, Candler, NC*

*Kriselle Niña Pantig from the Philippines*

## More links you may find of interest!

Megan's website: [MeganLynch.net/](http://MeganLynch.net/)

A donation was made to [STEMd.org](http://STEMd.org)

Megan Lynch's [Demandifesto](#) on the Internet Archive

Buy Megan's album! "[Songs the Brothers Warner Taught Me](#)"

Other Ologies episodes mentioned: [Matrimoniology \(MARRIAGE\)](#), [Sexology \(SEX\)](#), [Entomophagy Anthropology \(EATING BUGS\)](#), [Corvid Thanatology \(CROW FUNERALS\)](#), [Molecular Neurobiology \(NEUROTRANSMITTERS\)](#), [Experimental Archeology \(ATLATLS\)](#)

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[1945 LA Times article citing a "carobologist"](#)

[Section 14\(c\)](#): SUB-minimum wage legally paid to people with disabilities

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[Cocoa vs cacao](#)

[Harvesting LA carob](#)

[History of carob in California](#)

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[Guts and Carob](#)

[Neurodegenerative disorders and carob](#)

[Carob in Cali history](#)

[Locust bean gum: locusts?](#)

What 100 grams of stuff looks like: <https://100-grams.blogspot.com/>

Uhhh, [carrots that look like dicks](#)

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[Commercially processed carob: less nutritious, as it turns out it](#)

[More on carob nutrition](#)

[Processing carob](#)

[Clonal propagation](#)

["How Carob Traumatized a Generation"](#) in the New Yorker

Steven Ray Morris's new Star Wars podcast, "[Everything But the Movie](#)"

Alie on Renee Colvert's new podcast "[My Pandemic Makeover Spectacular](#)"

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