

# Melittology with Amanda Shaw

## Ologies Podcast

### March 20, 2018

Heeeyyy. It's your old pal Alie Ward with another straight shootin' episode of Ologies. Bees. BEES, man. You're worried about 'em, aren't you. Admit it. You've cradled a cup of warm tea. You've gazed out a window vacantly and thought, what the fuck are we going to do about these fuckin' bees? Well, first thing, let's get to know 'em a little better. So now, I've wanted to do this episode for, literally, twelve years. When I first came across a list of ologies, back in the day, this one was, honestly, the one I was most horny for. I love insects. I've harbored a fantasy for decades that I will retire and become a very wrinkly old lady who wears cotton smocks and lovingly tends to, like, 30,000 bee pets in her desert garden, trying to name each one of them a human name.

Speaking of loving admiration, I'd like to take time to stare at you like a grateful creep and look into your eyes and say, "Thank you Ologites," for rating, and reviewing, and also for leaving reviews on iTunes. It helps so much. It lets the podcast get seen by other people. And also, I'm very needy for feedback sometimes. And I read every single one of your reviews. Sub-speeshy-dye [phonetic] says,

*Thank you, Alie. This podcast fills a need I didn't even know I had before I found it. Your edits are like the most relatable internal commentary and my Twitter feed has become so much less bleak and more full of squids.*

Get those squids in your timeline, guys! Get 'em right in your eyeballs!

Okay, back to bees. So, is it Melittology? Apiology? There is controversy. Which is it? Okay, I didn't know what to title this because I didn't know what to call it. So, App-iss [ph.] Mellifera, or Ape-iss [ph.] Mellifera, whatever, is the genus and species of the European honey bee, the ones you think of commonly when someone says, 'honey bee.' But there are so many species of bees. There are 20,000 species of bees. That's like if every seat in Madison Square were filled with one species of bee. Just one little bee, representing. Just takin' in the show. So, is it apiology or melittology? I looked this up and I got nauseated with enthusiasm. I'm not lying about that. To learn that apiology from Latin *apis*, for bee, is the study of just honey bees and beekeeping. But, melittology, Greek, *melitta*, meaning bee, is the study of all the bees. So, this episode is melittology because we talk about a bunch of species and I like my insect talk to be inclusive as hell.

So, this melittologist is the president of the Portland Urban Beekeepers Association, and I knew I was down to con with her immediately when she returned my email with the question, "How soon are you wanting to *bee* connected?" She went for it. So, a few days later we met in my hotel lobby, and at first I walked right past her because I thought she was twelve. She's tiiny, bespectacled, with a strawberry blonde bob, but is actually a full-grown badass bee president with years of beekeeping obsession under her belt, but not literally, because oww. So, we went up to my room and I realized that she had a backpack with a bee patch stitched on, she was wearing a shirt with a bee on it, and she has a bee tattoo.

She started talking and I immediately got my mic set up because everything she says is golden. So, *bee* prepared to learn about weird places for nests, what color not to wear, what happens when you vacuum up bees, how you can become a beekeeper, literally like today, why you should communicate all of your needs by shaking your rump, how wasps can get bent, and why these damn bees are dying, and what to do to save them and also the future of humanity. So, please get so pumped for melittologist, Amanda Shaw.

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**Amanda Shaw:** I've always been interested in weird things. *[laughs]*

**Alie Ward:** Wait, I have to ask you this on mic now. *[laughs]* Here, I'm going to give you this one.

**Amanda:** Okay.

**Alie:** And, you're the president of a beekeeping organization.

**Amanda:** Yes, I was actually just elected in January.

**Alie:** What does that entail? Are you drunk with power most of the time?

**Amanda:** I try to use my powers for good. *[laughs]*

**Alie:** So, it's urban beekeeping, because we're in Portland. It's a pretty big city!

**Amanda:** Yes, and there is an enormous backyard beekeeping community in Portland.

**Alie:** Do you think that Portland lends itself to backyard beekeeping because it's, like, kinda cool?

**Amanda:** Yes.

**Alie:** Okay.

**Amanda:** Yeah and the climate is mild. And I think that people in Oregon are gardeners, they are more adept to organic, natural...

**Alie:** Right, locally farmed situations...

**Amanda:** Yes!

**Alie:** They're like, "I'm gonna make my own!"

**Amanda:** "I'm gonna make my own or go to the Farmer's Market."

**Alie:** Tell me about your love affair with bees. When did it begin?

**Amanda:** So, I started keeping native bees about five years ago. Mason bees. I call it the gateway bee now because I quickly became enchanted with keeping bees, and planting my

pollinator garden, and I became more in tune with what's going on throughout the season. I was always looking out for other bees that were visiting my garden that I had never seen before.

**Alie:** What's a mason bee?

**Amanda:** Mason bees are solitary bees. They are known as the gentle pollinator. They're native. They're also called blue orchard mason bees. And they nest in these little tubes. And they're super easy.

**Alie:** Awwwww!!

**Amanda:** It's like beekeeping for *anybody*. Anybody could keep mason bees. They're just fuzzy, and shiny, and blue, and cute. When they're coming back to their nest you can see little packs of pollen on their bellies...

**Alie:** [*overcome with cuteness*] Noooooo...

**Amanda:** ... just bringing it back and just... They're really cute!

**Aside:** So, a non-yellow, non-striped bee? Yes! They exist! There are a lot of them. So, mason bees are this really beautiful kind of gun metal blue color. And in a lot of the one million photos I just scrolled through, while turning into a living, breathing heart-eyed emoji, mason bees appear to be covered in pollen a lot. Like little dusty dummies. So, I guess sloppy gathers make really good pollinators. They're just like, *rwar!* Confetti pollen everywhere.

**Alie:** And so, do you put tubes out where they can, kind of, burrow into?

**Amanda:** Yeah, so you can actually buy these little cardboard tubes on *Amazon* or probably a local garden store, and you can just put out a little house to put them in, and you can buy the cocoons. They come in little cocoons, and they hatch each spring, and they pollinate for six weeks. Then they lay eggs for the next generation that will hatch out of their cocoons the following springtime.

**Alie:** Oh that's adorable.

**Amanda:** Yeah, so it's short term, you know, you only get six weeks of mason bee watching. That wasn't enough for me. So, I started studying really, really hard and got my first beehives a few years ago. And it has just spiraled out of control! [*laughs*]

**Alie:** This is a good addiction to have.

**Amanda:** It is.

**Aside:** Side note: An addiction to bees would technically be called, ready for this? *Melissophilia!* And I only know this because I researched, 'addicted to bees' and I found this was a common self-professed ailment of beekeepers. And then I looked up, 'the fear

of bees' and found out it was Melissophobia. So, we now know that, one, bee addiction is common, and two, all of your friends named Melissa are named after bees. Melissa in Greek means bee. So, extra shout out to any Melissa out there keeping bees. Double duty on the bees.

**Amanda:** One of the most surprising things about getting into beekeeping was getting connected to this great community of hobbyists, professionals, scientists. I'm surrounded by really wonderful beekeepers and there's been a lot of support there.

**Alie:** And did you like bees or insects as a kid? When did you develop an interest?

**Amanda:** Well, I've always been kind of into nature and plants and all that stuff. But it wasn't until I saw this documentary called *More than Honey* that I really felt the need to start learning about bees.

**Alie:** What is it?

**Amanda:** It speaks to the challenges that our pollinators are facing. And like, there's real trouble. People need to get on board and help. So, that's when I got into mason bee keeping because that was something I could do immediately without a lot of pre-study. And planting my pollinator garden, you know, stuff you can kind of do on your own without a big investment.

**Alie:** And now, the concern came out of colony collapse disorder? And just in general, we got a problem with the bees, right? Like, bees need our help right now. If bees could have a telethon they'd be like, "You guys..."

**Amanda:** Dial in. Call now. [*laughing*]

**Alie:** [*crying out for help*] Help the bees!

**Amanda:** Yes! [*continued laughing*]

**Alie:** So, what is happening? It's pesticides? I know that one rumor was like cell phones are killing bees. And they're like, no. So, what's happening? The bees are dying. And then without the bees we don't have things pollinated which is important for agriculture and just in general botany. But like, what's going on with these bees?

**Amanda:** So, what we're seeing is bees are being put into nest boxes are that aren't ideal. If you look at the industrial beekeeping complex, bees are being forced to pollinate and work outside of their normal cycle. They're being pushed to these limits and it's weakening their immune systems. And when there's monoculture and pesticide use involved it causes them to collapse. There's varroa mites, there's diseases that come with that because that also weakens their immune system.

**Aside:** Okay, aside on these varroa mites. Their genus and species name is [*haunting demon voice*] 'Varroa Destructor' and they are like bed bugs to bees. They are

these tiny, flat, kind of button-shaped, rusty brown little nasties. And, when they feed on bees, they drain them of fats and lymph and they leave these open wounds that make the bees more susceptible to fungi and viruses, like one that deforms their wings. So, these kind of mites, varroa mites, were introduced into the U.S. in the '80s. I don't mean to talk shit, but everybody hates them.

**Amanda:** And so, I think that it's a complicated issue. It's not just the pesticides. It's not just the monoculture. Not just the flimsy boxes that we're keeping them in. It's all of that together. And trucking them around the country. That's not normal. That's not what they're designed to do.

**Alie:** What is their normal life cycle? Do they only work in certain months and we're like, "Yo, we got stuff to pollinate you guys!"

**Amanda:** Right. "It's February! We got almond trees to pollinate! Get up! Let's go!"

**Aside:** So, Portland is relatively temperate and Amanda says that the bees do survive over winter and then they're up and at 'em in late March, early April. And then by November, they start shutting down for winter again, living off the honey, and they have smaller colony numbers. But the summer bees are the most extra. They're out there.

**Amanda:** The summer bees only last about six weeks because they literally work themselves to death.

**Alie:** [*shocked*] Aaaaaaargh!

**Amanda:** Yeah!

**Alie:** And most of them are women anyway, right?!

**Amanda:** Yes! They need to take a break, right?!

**Alie:** It is... like, because most of the workers are all women.

**Amanda:** The workers are all women, yeah.

**Alie:** And so, they work themselves to death.

**Amanda:** To death, yes.

**Alie:** Good god. I had no idea. Someone needs to step in and be like, "Girl..."

**Amanda:** Just take a day off once in a while.

**Alie:** Don't worry about these flowers for today.

**Amanda:** Right.

**Alie:** Now what can a person do? This is one question that I got so many times I can't even attribute it to a single listener. But like, what can we do for the bees? You started becoming interested in apiculture because of their plight. But you went like, full hog and now you're the president of a beekeeping association!

**Amanda:** *[laughing]*

**Alie:** In the scale of zero to ten, what can the average person do?

**Amanda:** I always tell people you don't have to be a beekeeper to help the cause. The biggest thing that bees need right now, honey bees and native bees, is food that's safe. Plant seeds that haven't been pre-treated with pesticides. Check the labels because a lot of them *are* pre-treated.

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

**Amanda:** Yeah. And planting plants that haven't been pre-treated with systemic pesticides. That's one of the big issues.

**Aside:** I didn't know what a systemic pesticide was because I live in L.A. and my garden is a parking lot. But, they are the kind of pesticides that live in the tissues of the plant instead of just being misted over the leaves. Man, agriculture is a war field. There are poisonings, sudden vanishing of tens of thousands of family members, there's billions of dollars at stake. It's like a *Candyland* of microdramas.

**Amanda:** Another thing that native pollinators are struggling with is habitat. So, if you can have a corner of your yard where you can have that compost pile on the ground for bumble bees to nest in. Or, there's lots of other ground nesting bees. So, having that awareness, you can make your yard its own little nature site and the bees will come. They will come.

**Alie:** You don't have to worry about setting out a party and you're like, *[whiney voice]* "No one even came..."

**Amanda:** Right! You don't have to send invitations. Just plant the safe flowers, put out some habitat, they'll be fine.

**Alie:** And now you keep saying, native bees, and I think we need to educate some people that, honey bees: NON-NATIVE SPECIES!

**Amanda:** Correct! *Not* native!

**Alie:** And we brought them over from Europe to use them as honey producers, but can you tell me a little bit about the difference between honey bees and native bees? And, honey bees, should we be using honey bees in this environment?

**Amanda:** *[deep breath]* With native bees, they're actually more effective pollinators than honey bees are, but honey bees, sort of, get all the attention. They can be used in the

agricultural industry. They can be used as livestock to pollinate large crops. But, native bees are more effective pollinators. And we have over 4,000 species of native bees in America!

**Alie:** What?!

**Amanda:** So, there's a lot of them out there but they don't get the attention that they need because the honey bees are the star of the show. And the cry for help is for the honey bees but really it's the native bees that need the habitat. They need variety in their diet. So, when you have these giant fields of almonds, or cotton, or corn, or soybeans, that's not good for the native bee population because they need variety.

**Alie:** Ohhhh... So, the agriculture kind of cuts them off from the flora that would be out there.

**Amanda:** Yes.

**Alie:** Got it. So, planting things in your backyard on your property that are good plants for them helps them out.

**Amanda:** Yes, and having variety, making sure that you have plants blooming as long as possible during the growing season.

**Alie:** And now, what do you keep?

**Amanda:** I plant a lot of oregano, mint, lavender, the stuff that's really easy to grow, that going to bloom long season. Borage is a really great bee food and it's super easy to take care of.

**Alie:** And you can eat the flowers, right?

**Amanda:** Yes, yeah. And they're deer resistant, so if you have deer coming through your property...

**Alie:** Now what kind of bees do you keep?

**Amanda:** I keep mason bees and I keep honey bees.

**Alie:** Okay. So, the jump to honey bees. Were you like, "I'm going in!" Like, "I'm becoming a beekeeper. Like hardcore beekeeper.?" How did you approach that?

**Amanda:** I started studying honey bees very shortly after starting my venture with mason bees. But, the thing that really kicked it into high gear was early spring a couple of years ago, I was in my backyard and I hear a bunch of people calling my name. "Mandy! Mandy! Mandy! Come quick! Come quick!" So, I run out to the front yard and there's a swarm of bees! There's a honey bee swarm collecting in the maple tree in my front yard!

**Alie:** [*aghast*]

**Amanda:** I'd never seen a swarm before and... it just felt like a sign.

**Alie:** That is thrilling. That's like finding a puppy. That's so exciting.

**Amanda:** I've never felt that kind of exhilaration in my life!

*[crowd of people all saying, "Awwww."]*

It was really special. And so I called the swarm hotline. There's a hotline you can call and they'll let beekeepers know that there's a swarm. And, this guy came, and he was like the Sam Elliot of beekeepers. *[Alie belly laughs]* Soooo tough. And he had the mustache and everything.

The swarm was up high in this tree and he gets out this ladder and it's rickety. It's this tripod ladder thing and he just goes up there and he's got this special vacuum for vacuuming up the bees. He just gathers them up, puts them in his car, and drives off!  
*[laughs]*

**Alie:** Were you like, "Can I keep them?!"

**Amanda:** Well, I wasn't quite ready yet. I didn't have a hive to put them in. I didn't have anything.

**Alie:** That's a good point.

**Amanda:** But that was what really made me realize, this is it. I'm doing this. So, I spent the rest of that year getting my equipment, taking beekeeping classes, reading more, joining the organization and just getting myself ready.

**Aside:** Before you go Amazon Priming a whole bee set up, which you can totally do for like \$200, you may wanna check with a local beekeepers association first because they can sometimes rent or lend out equipment, which is very handy. Or, they can tell you which stuff is bunk and not to buy. One thing that Amanda always has on, under her bee suit, is her bee tattoo. And it covers the entirety of her right bicep. It's this gorgeous floral mural featuring, of course, her favorite tiny friends.

**Alie:** At what point did you get your bee tattoo?

**Amanda:** I got my bee tattoo in 2016.

**Alie:** Oh! So this is after you started keeping honey bees?

**Amanda:** Yeah, shortly after. And, it's funny because I had it done in four sessions. And, I was doing it in the springtime and after two of the sessions I caught swarms that day on two occasions.

**Alie:** NO WAY! That's freaky!

**Amanda:** That's totally freaky.

**Alie:** So, do you go help catch swarms too?



**Amanda:** Yes.

**Alie:** So, you've become the Sam Elliot of beekeeping also.

**Amanda:** Yes. The *lady* Sam Elliot.

**Alie:** What kind of vacuum do you use? Is it like a modified Black and Decker?

**Amanda:** Well, I don't have a bee vac. I use other methods. But you can make a bee vac, you just have to make sure the suction is not very strong and collects them in a bucket. But, I use other methods. The thing about going out to catch a swarm, you don't know what you're going to find when you get there. They might be really high up in a tree. They might be wrapped around a tree trunk in a shrub. I caught one that was on the ground. Just in a pile on the ground. It was really, really early spring. It was kinda cold, so they were just kind of laying there, cold. They couldn't move. So, I very carefully used sheets of cardstock to kinda scoop them up and put them in the box, because I didn't know what else to do. And it worked, but that's the excited thing about swarm catching. You don't know what you're going to find.

**Alie:** Sometimes, are they agitated?

**Amanda:** Sometimes, yeah.

**Alie:** Do you ever see killer bees?

**Amanda:** No.

**Alie:** Okay.

**Amanda:** Nooo, it's too cold here for them. They're central/northern California is as high as they go.

**Alie:** Okay, yeah. I feel like we heard a lot about those in the '90s, they're like, "Killer bees, watch out!"

**Amanda:** Yeaaaah... We don't have them here.

**Alie:** And so, when you're catching a swarm, have you been stung before?

**Amanda:** Yeah.

**Alie:** Which hurts more, the tattoo or the bee sting?

**Amanda:** [*deep breath*] The bee sting is kind of an anxiety-inducing adrenaline rush.

**Alie:** Okay. Is that because of the venom?

**Amanda:** Yes, it's your body reacting to it and keeping you from having a bad reaction. But the tattoo is a more long-lasting pain for sure. [*both laugh*] It's more like a burn.

**Alie:** Right, okay. So, I guess one is a quick poke and one is more like a systemic situation.

**Amanda:** Yes.

**Aside:** So, what's in an angry bee butt that's not in a tattoo gun? This is a good question. Let's break it down. So, bee venom contains a compound called melittin, which makes red blood cells burst. Which hurts. And there are other proteins that destroy cell membranes, cause pain, destroy nerve tissue. There's also histamine in bee venom, which makes your capillaries leak and causes itchy welts. So, when bees sting, they release a pheromone that says, "Hey bitches, I'm in trubs!" causing other worker ladies to come and kick your ass. It's a last-ditch defense. Bees don't wanna sting you! They don't wanna die! They would really rather very much not.

**Alie:** How many times have you been stung by bees?

**Amanda:** I've only been stung four times.

**Alie:** Reallyyyy???

**Amanda:** Last season I didn't get stung at all, which is kind of crazy. I try and be really super careful. And thinking about the times that I had been stung, it was totally my fault.

**Alie:** Really, what happened?

**Amanda:** Because I wasn't being careful. There were a couple times where I grabbed a piece of equipment without checking underneath. If I was doing an inspection and I pick it up and squash a bee and you know, get stung. I've had them climb up my pant leg before. I got stung on the head one time. *[laughs]*

**Alie:** So, you prevent getting stung by just being really, really kind of cautious about where they are at all times. Like just kinda watching your back?

**Amanda:** Yes.

**Alie:** Okay. And now, when they're swarming, tell me what is happening.

**Amanda:** So, a swarm is like a birth of a new colony, and it happens in the springtime when bees are coming out of winter. The queen starts laying eggs, the colony starts brooding up. They start ramping up their population production. So, they'll make new queens to prepare for the swarm. When the new queens emerge, the old queen leaves the hive with about half of the bees and they go off to find a new place to live.

**Alie:** Oh! That's actually fascinating because I always thought it was a new queen that was like, "Byyye."

**Amanda:** No...

**Alie:** But it's the old one that like...

**Amanda:** It's the old one, yeah.

**Alie:** She's like, "Pssshhhh. Fiiiine. I'm out."

**Amanda:** We're outta here. *[laughs]*

**Alie:** I never knew that. And so, they go off, she takes about half the hive. How do they decide who goes with her and who stays?

**Amanda:** I don't know. It's amazing to me that they can even coordinate a move, and find a new place to live, and have the timing be just so. I'm not sure how they decide who gets to go with Mom and who gets to stay with the new Mom.

**Aside:** I had to find out how these allegiances and betrayals were made and I read a whole article about it. And at the very end, it just summarized it with, "It's rather random."

**Alie:** Yeah, I wonder if it's like Stepmom situation, she's younger...

**Amanda:** Right! *[laughs]*

**Alie:** Like, *[quietly]* "Fuck you, Mom." So, they swarm, they all leave, and they're in this cloud, and they will kind of gather at a pit stop on a tree and be like, "Okay, where we goin'? Where we goin'?"

**Amanda:** Yes. Exactly.

**Alie:** Where's the weirdest place that you've seen a hive?

**Amanda:** I haven't seen hives, myself, in very crazy places. But, I follow some professional bee removal beekeepers on Instagram and they've shown pictures of... One beekeeper showed bees living in an elephant statue.

**Alie:** Whaaaaat?

**Amanda:** Like this statue is hollowed out and the bees were living in it.

**Alie:** Like a Trojan Horse!

**Amanda:** Right! *[laughs]*

**Alie:** *[more laughing]* The weirdest Trojan Horse.

**Amanda:** Compost bins, water meter boxes in the sidewalk... Yeah.

**Alie:** We once had a swarm inhabit a wall of ours, when I was a kid. It was the weirdest day. It was a Friday 13th, it was Good Friday, our dog died that day, there was an earthquake, and there was a bee swarm in the wall.

**Amanda:** *[laughing]* Oh my god!

**Alie:** It was the weirdest day. I just remember our whole family was like, "This is very all-at-once." It felt very biblical.

**Amanda:** Yes.

**Alie:** But they can also find an in and hang out in your walls, right?

**Amanda:** Yes. Yeah, it's common for them. If they find a little hole in the siding, "Hey this is a nice-sized space, it's warm, it's high off the ground, let's do it!" They'll move into chimneys.

**Alie:** Oh yeah?

**Amanda:** Just like... gosh. How do take them out of a chimney?

**Alie:** Yeah, how *do* you take them out of a chimney!?

**Amanda:** So, I have a beekeeper friend that has done this several times and he says it's like a slow strangle. He said, you just sort of lure them out in a way that they can't get back in, but often you have to give them a new queen. Because the old queen doesn't know to come out. It's complicated and it takes a long time.

**Alie:** Once you have a bucket of bees...

**Aside:** *[disturbingly distressed man yelling amidst buzzing sounds, "No not the bees! Not the bees!! Aaarrgh!!!! Oh no my eyes!!!! My eyes!!! Aaaaarrghhhh!!!! Aaargh!!!]*

Do you then distribute them to people who are looking to populate hives?

**Amanda:** I keep them when I catch them. It's always a race for resources, like, "oh my gosh, I just caught a swarm, I need to make sure I have equipment ready for them." In my first season, that was the biggest surprise. It's like a constant race to keep up with the demand for equipment. And it's not cheap. Beekeeping is not a cheap hobby.

**Alie:** I imagine.

**Amanda:** It costs a lot to get started. But once you do get started then it's not so bad.

**Alie:** And, do you ever have people who are like, "Yeah, I thought beekeeping would be for me. But it turns out, no. Here, do you want my stuff?"

**Amanda:** I've never had that. *[laughing]*

**Alie:** So, there's not a big attrition rate. Okay.

**Amanda:** Right.

**Alie:** And so how many hives do you have? How many bees do you have?

**Amanda:** I have three traditional hives. Traditional Langstroth hives, you know, like you would see in the beekeeping operations.

**Aside:** Uhhhh... what is a Langstroth hive? Okay, those are the square beekeeping boxes, usually white, that you see near orchards, and in backyard beekeeping with the leaves that you can remove. So, they were named in the 1850s for their inventor, L.L. Langstroth. When I first saw the Wikipedia photo I thought, "Oh cool! A lady!" But it turns out, he was just an older dude with luxurious tresses. He was also a clergyman and he passed away at the age of 85 by dropping dead at the pulpit as he was beginning a sermon. Anyway, that's one kind of hive.

**Amanda:** And then I also have a tree hive.

**Alie:** [*inquisitively*] Whaaat?

**Amanda:** So, the tree is the bees ultimate nest site. That's what they're really designed to live in, is the hollow of a tree. It's insulated, it's alive, it has its own microbiome that is happening inside. So, this tree was in somebody's yard and they had to have it removed. And I have a friend here in Portland, his name is Brian Lacy, this is his area of expertise. He works with arborists to preserve that section of the tree and keep it intact so that he can find a new home for it.

**Alie:** Whoa...

**Amanda:** With the bees still inside!

**Alie:** WHOA!

**Amanda:** It's wild. And so, I have this bee tree and it's really, I think, a humbling experience as a beekeeper because you have to trust them. You can't get in there and meddle with their affairs. You can only watch and trust that they know what they're doing. And out of all of the colonies I've ever had, the bee tree is the most robust.

**Alie:** Really!?

**Amanda:** Yeah.

**Alie:** And do you go in there and harvest any honey at all or do you just let them do their thing?

**Amanda:** It's totally hands off. I just sit and admire them.

**Alie:** Like an ant farm, kind of?

**Amanda:** Right. [*laughing*]

**Alie:** And, now with your other hives, do you do any honey harvesting as well?

**Amanda:** I don't, and the reason is they work sooo hard for it, and I have not seen them have a surplus enough where I felt like I could take from them.

**Aside:** How sweet is that? No pun intended. For reals.

**Alie:** What exactly is the roll of honey? Walk me through a little bit, how it goes from, essentially, flower jizz to honey. It goes from flower jizz, to barf, to honey. Like, what's happening in nature??

**Amanda:** [*laughing*] Okay... So, the bee goes out and gathers some nectar, they use their tongue, their proboscis. It's like a straw. They suck that up and the nectar goes into their honey stomach. So, it's a secondary stomach that they have.

**Alie:** Oh! Okay!

**Amanda:** And they carry it in that. When they bring it back to the hive, they do this thing called trophallaxis. They're regurgitating the nectar into another bee's mouth.

**Aside:** [*trailing off as echoes...*] What? What? What? What? What?

**Alie:** Oh!!!!

**Amanda:** And they pass it back and forth and each time they do this they're adding enzymes to it. It reduces the moisture content of the nectar a little bit, because the nectar is very high in moisture. So, before it can become true honey, they have to bring that moisture content down quite a bit. After they pass it back and forth, they'll put it into a little honeycomb cell. And they fill that up and they use their wings to flap and get the air moving and reduce the moisture content. Ideally, for harvested honey, 17% is the most moisture that you'd wanna have for it.

**Alie:** Oh.

**Amanda:** And then they cover it with wax. It stays fresh forever, really.

**Alie:** Now what are they using the honey for? How do they use that honey to feed a brood?

**Amanda:** They feed their brood pollen actually.

**Alie:** Okay!

**Amanda:** So, when they're collecting pollen, they're bringing that back to the hive and they're adding enzymes to it to sort of ferment it. And it's called 'bee bread.'

**Alie:** Ohhhhhh. I didn't know that!

**Amanda:** [*laughing*] Yes, bee bread.

**Alie:** [*high pitched*] That's cuuuute!

**Amanda:** So, they'll feed that to their babies. It's a protein source.

**Alie:** Got it. So, then what's the honey used for? For the adults?

**Amanda:** They eat it, yeah. It gives them energy. It's a carbohydrate. It sustains them through the winter.

**Alie:** Oh, so are they collecting it more in the spring and summer and then living off of it in the winter?

**Amanda:** Yes. yeah. And, before a swarming event, they fill up on it. Everybody fills up before they leave the hive because they need that energy for when they get to their new home location to build a comb, because they won't have any comb where they're going unless their moving into an old bee hive. So, they have to start from scratch.

**Alie:** So, they're carbo loading.

**Amanda:** They're carbo loading. Yes. *[laughs]*

**Alie:** Like cake before a marathon. *[laughs]* Now, where is the distinction between those who harvest honey and those who don't? And with the Portland Urban Beekeepers, do you guys have both?

**Amanda:** We do, yeah. We have a wide range of beekeeping philosophies and practices within our organization. At our teaching apiary, we have harvested honey from those hives and we have a honey extraction party. And, some people do practice beekeeping commercially on a larger scale than, say, your average backyard beekeeper.

**Alie:** What was one of the first things they teach you in beekeeping classes? You mentioned that you signed up for some classes. Is it like, how to suit up? Is it like, how to be one with the bee and get in its zone?

**Amanda:** *[laughs]* Umm, it was a lot of just real practical information. There's honey bee biology, understanding their different working parts. The social structure of the hive is important to understand. Equipment. How to choose what kind of hive you're going to keep your bees in. Stuff like that.

**Alie:** This is a dumb question but why do some hives look like igloo domes and others are, like, white boxes?

**Amanda:** I think you're thinking of a skep. The little igloo dome?

**Alie:** Yes!

**Amanda:** So, traditionally that is what bees were kept in for a long time, these woven baskets, and they're caked with mud or cow dung on the outside. They're this breathing atmosphere for the bees to live in. But it's also really insulated and it's the right size for them. It's not too big and not too small. they can maintain the heat, they can maintain the

moisture inside of something like that. But the bee boxes, like the square boxes, that's kind of what people have been keeping bees in in America for a long time. That's what the industry standard is, and it's widely available, and a lot of people start with that because it's the easiest for the beekeeper. It's more beekeeper centric.

**Alie:** Got it. And because they're like volumes, almost like file folders you can take it out?

**Amanda:** Yes.

**Alie:** I have a little bit of an idea but can you explain like, what's in the box?? What's happening in that box??

**Amanda:** So, in the box you'll have your frames of drawn out wax and they'll use it for storing honey, pollen, and also raising their babies. And generally you'll have two boxes. The one below which is called the brood chamber, it's where the queen is hanging out and laying eggs. And that's where the brood is coming from. And then the box above generally would be for food stores. But sometimes, the queen will go between the two and you'll see brood in both boxes during the peak of the season.

**Alie:** And there is a queen, there are the female workers, and then there are the drones, right?

**Amanda:** Yes.

**Alie:** And so how do they determine who is the queen?

**Amanda:** The queen is made a queen when she's still an egg. A 3-days-old egg. The change happens when they start feeding her. She's only fed royal jelly. She doesn't get any bee bread.

**Alie:** [*gasp!*]

**Amanda:** She's deprived of protein during her development, and that is what makes her a queen.

**Alie:** Because she's deprived of protein?

**Amanda:** She's given a totally different diet, so that somehow changes her. She grows differently than the worker bee.

**Alie:** And what's royal jelly, exactly?

**Amanda:** Royal jelly is this enzyme that the bees... they have these glands that excrete it.

**Alie:** So that comes from a bee face and not from...

**Amanda:** It's from a bee face. [*laughing*]

**Alie:** And so do a lot of different workers contribute to that? Or is it, like, one nurse?



**Amanda:** Yeah, so what happens is if a bee lives out its full life cycle, it will achieve all the different jobs within a colony.

**Alie:** Oh!!!!

**Amanda:** They start out as nurse bees. So, when they first are born they come out and start tending the young and the larvae. And then there's food processor bees, there's cleaning bees because they like to keep their hive really clean. And the last stage is the foraging bees. Those are the most experienced bees and they go out and are the ones we see in the gardens.

**Alie:** I understand that when they make a queen, they'll make a couple of them.

**Amanda:** Yes, yeah.

**Alie:** And it's just, like, a fight to the death?

**Amanda:** It is. Let's say they make five queens and they all emerge around the same time. They will call each other out. They do this thing called piping. It sounds like a kazoo. They'll call to each other and then they'll fight.

**Aside:** Sidenote: So the first queen out starts roaming around making this noise in G-sharp. It's called Piping or Tooting. It's like *meeeeeee meeeep meeeep*. Now, a few of her sisters who have also been raised to be queens, but are still sleeping in their little cells - they just snoozed a little longer - they respond with a noise called, Quacking. It sounds like a duck honk. [*faint kazoo-like buzz/beep repeating at irregular intervals*] It's kinda like Marco Polo but with newborns. Now, here's the thing. When the sleepy queens quack back at the first one, the first one is like, "Oh, there you are!" And then goes and kills them. So, she's essentially like, "Hey... hey... who's up?? Anyone up??" And then her sisters and like, "Heeyyy... hey... wassup, I'm just about to get up. What's going on? [*Getting out of bed in the morning stretching sounds*] Ahhhh, Wassup?" And she's like, "Oh hey, [*suddenly very serious*] I kill you." I'm telling you, this is a Candy Land of microdrama.

**Alie:** And then, will the one who loses, die?

**Amanda:** Yeah.

**Alie:** And then whoever the strongest is, is like, "I'm the queen now, bitch."

**Amanda:** Yes. Then she has to go out on her mating flight and hopefully, you know, doesn't get eaten by a bird.

**Alie:** Oh god, could you imagine all of that...

**Amanda:** So, there are a lot of things that can happen. It's a very delicate....

**Alie:** And does she have a stinger? Cause I know a stinger is an ovipositor, right?

**Amanda:** She does have a stinger but it's not barbed like a worker stinger. So she can use it in battle, but it's not like the worker's stinger with the venom sack.

**Alie:** Cause the barb also rips it straight out of your body.

**Amanda:** Yes.

**Alie:** [*sad*] Awwwww...

**Amanda:** Yeah, but I have seen videos where the beekeeper kept their cool and let the bee work the stinger out themselves so the bee was able to sting without losing its life.

**Alie:** [*gasps*] Oh god. That is generous! So generous!

**Amanda:** Yeah! [*laughs*] Nerves of steel!

**Alie:** Seriously! So, the mating flight. Tell me a little bit about that.

**Amanda:** It's also called the nuptial flight.

**Alie:** [*softly*] Heeey!

**Amanda:** So the queen goes up to the drone congregation zone.

**Alie:** [*slow-mo "heeeeeeey!"*]

**Amanda:** So, all these drones are hanging out high up at the tree level, waiting. It's like the singles bar. The queen goes to the drone congregation zone and flies as fast as she can because she wants the fastest male, you know, fast genetics. She'll mate with maybe a dozen or so.

**Alie:** Hello girl!

**Amanda:** Yeah! [*laughs*]

**Alie:** I love that she's like, [*pretend sexy voice*] "going to the drone zone, let's see what happens..."

**Amanda:** Yup! [*laughs*] She goes to the drone zone.

**Alie:** Get it girl! So, the fastest 12 or so will end up giving her sperm. And then she flies back. Does she fertilize the eggs herself based on what she's gathered?

**Amanda:** It's amazing. So, she holds all of this sperm and it has to be enough for her lifetime, which can be up to five years. Queens can live a very long time. She holds fertilized and unfertilized. The unfertilized eggs are drones. She makes drones from unfertilized eggs which, when I first learned that it blew my mind because I'm thinking, "How?? How does that work?" The drone doesn't have a Dad, but he has a Grandfather.

**Alie:** Whaaaaaaaaaaaaaooooo??? Whaaaaat?? That's crazy!!

**Amanda:** Yes.

**Aside:** So. Much. Family. Drama. There are a lot of skeletons in their closets. Especially considering bees don't have skeletons. Well, they have exoskeletons. You know what I mean.

**Alie:** And so she makes a smaller proportion that are drones, because most of what she needs are female worker bees. And, does she have one nuptial flight her whole life?

**Amanda:** Yeah.

**Alie:** Ugh! So she gets it on one time...

**Amanda:** And if she doesn't mate well, the colony likely won't survive. So, it's really important that she, you know...

**Alie:** That's a lot of pressure!

**Amanda:** Yeah, it is.

**Alie:** Can you imagine? They're like, "Here's the deal: You get one gangbang your whole life and then you're celibate 'til you die. But you'll never stop raising babies!"

**Amanda:** *[laughs]* Exactly. Yeah.

**Alie:** It's a different lifestyle.

**Amanda:** It's a lot of pressure.

**Alie:** Oh my god. And so she can live for maybe up to five years? Oh wow. I didn't realize that they live so long.

**Amanda:** Yeah.

**Alie:** And queens have a little bit longer abdomen?

**Amanda:** Yes, so once you can recognize a queen when you're doing your inspections, they're easy to find. They have the really long abdomen, so their wings are only coming down about halfway and they're not as fuzzy as the workers or the drones. Their backs tend to be more shiny.

**Alie:** Why are workers and drones fuzzy?

**Amanda:** It's my understanding that the workers have fuzz because it helps them to gather the pollen. It will stick to them. They get a little bit staticky and sticky, and it will stick to their fuzz and then they can clean it off and sort of push it into their little pollen packets.

**Alie:** Oh, it's like glitter in a fur coat.

**Amanda:** Yeah! *[laughs]*

**Alie:** Fancy. When you first see a queen in a hive, do you get really excited?

**Amanda:** Oh yeah! It's like, "This is my lucky day!" *[laughs]*

**Alie:** Now, what about your family? Are they into beekeeping as well? You mentioned before we started recording, you have two kids. And a partner?

**Amanda:** Mm-hmm. *[affirmative]*

**Alie:** Do your sons like bees as well?

**Amanda:** They liked bees when I first got them their beekeeping suits because it was a new costume for them to put on.

**Alie:** *[laughs]* Do you wear your beekeeping suit whenever you tend to hives?

**Amanda:** Yeah, I do.

**Alie:** And that involves kind of like a hazmat suit with a mesh hood?

**Amanda:** I wear a ventilated suit and it's three mesh layers that are breathable, but it still gets really hot in the summertime. I wear that, I wear my rubber boots, my leather gloves, and then I made my veil that I wear.

**Alie:** Ooooh!

**Amanda:** Yeah, custom.

**Alie:** And now, the smoke. You're essentially the smoke monster. So, they fall asleep? They get drowsy?

**Amanda:** So, it confuses them. It masks their pheromones. So, if they're really feisty, you can put a little smoke on them and it, it subdues their sense of smell, but it also tricks them into thinking the hives on fire, we've got to load up on honey and get out of Dodge.

**Alie:** Oh wow!

**Aside:** So, beekeepers are like veiled Ashton Kutchers, gently punking the shit out of these bees.

**Alie:** So, do they, kind of, peace out for a little bit?

**Amanda:** They do. It's really interesting. I mean, I don't always use smoke. It's not always required, but you can tell if they're cranky or just not feeling it. You can use a little bit of smoke and there's this immediate shift in the overall sound of the hive and the overall movement. It's really strange.

**Alie:** And what exactly is it? Is it wood smoke? Is it vape juice? Is it a fog machine? What's happening?

**Amanda:** So we're using newspaper and woodchips. You can get little smoker pellets to put in there. And really, you don't have to put a lot of smoke on them. Just a couple puffs will do ya.

**Alie:** Oh, okay! I always wondered what that was. I was like, "what's burning in there?" Okay, waggle dances. Let's talk about it.

**Amanda:** Okay. I love the waggle dance.

**Alie:** I mean, how do they know how to do it? What is it? Tell me everything.

**Amanda:** So with the waggle dance, they're communicating locations of food, water, or even a new place to live. And the orientation of the direction that they're doing the dance in correlates with where the sun is at.

**Alie:** Whoa...

**Amanda:** So they're following the sun and they're using their waggle dance to tell you which direction. Like if the sun is, you know, due east, they'll do their dance due east and the intensity of the waggle tells you how good of a source it is.

**Alie:** Whaaaaat??

**Amanda:** So, if you think about when they're swarming and they're looking for a new place to live, and one bee finds an ideal spot and they go back and they waggle to a group of bees, "Follow this direction." They go, they like it, they go back to the hive, waggle to a few more. So think about how long it would take them to waggle to everybody to get that message across.

**Alie:** I mean, what a crazy, complicated and advanced form of communication.

**Amanda:** It is! I'm just amazed at how intelligent they are. They're insects. I mean, they're sooo smart!

**Alie:** I suck at charades...

**Amanda:** *[belly laughs]*

**Alie:** I don't understand how something that has a brain the size of a pinhead can be like, "Let me tell you..." I don't know where I parked my car most of the time. Like how do they do it?

**Amanda:** I call it BPS.

**Alie:** *[laughs]* GPS, but with more butt wagging.

**Amanda:** Yeah.

**Alie:** Oh my god. I have so many questions from listeners. Can I barrage you?

**Amanda:** Yes.

**Alie:** So, this is a rapid-fire round. You can answer as quickly as you can or as quickly as you want. I've never had so many questions before in any episode I've done. I'm not kidding. Zoe Teplick says: My mom used to find dead bumblebees and keep them in a box under her bed when she was a kid. Not a question, just a creepy fact I thought I'd share.

**Amanda:** Confession: I keep dead bees too.

**Alie:** Yay!!! Where do you keep them?

**Amanda:** I have a little compartmental Tupperware thing that I keep them in. And when I go and, you know, do a presentation at a preschool or something, I can show them some different bees to look at.

**Alie:** Awwww. Do you have different species in there? So, mason bees, bumble bees...

**Amanda:** Mason bees, leafcutter bees, drones, queen. I have a queen. And worker bees.

**Aside:** If you too have a similar collection, feel free to tell me on social media. Just use the hashtag #mydeadbees.

**Alie:** Was it weird finding a dead queen?

**Amanda:** It was. Because it was a swarm that I had just caught like a month before and I went out to just, sort of, check on things and she was dead on their doorstep.

**Alie:** Whooooa!

**Amanda:** So in the time that they moved into their new home, they made a new queen, and killed the old one. I'm not sure what her defect was because the hive just... They won't just make a new queen for the hell of it.

**Alie:** Yeah.

**Amanda:** There's gotta be something going on there that the current queen is not fulfilling for them to do it like that.

**Alie:** That sounds like some mafia shit, though. You know?

**Amanda:** It was weird. And, she was still soft. It had just happened.

**Alie:** Oh my God. The draaaaama!

**Amanda:** Yeah!

**Alie:** That must've been a weird day.

**Amanda:** It was really strange.

**Alie:** Oh, did you sage the hive? Like, woah you guys....

**Amanda:** *[laughing]* I started chanting and dancing around it.

**Alie:** *[laughs]* Crystal healing! You're like, "This is bad juju!"

Julie Rose wants to know: Is there ever a situation where you need to kill off the queen? And if so, why?

**Amanda:** Sometimes beekeepers will kill the queen if they feel that she is not vital enough. If she's not laying enough eggs, if she's getting too old, they will kill her off and replace her with a new queen. Or, if they feel like the genetics of the hive aren't good enough, they'll buy a queen that's been bred for certain traits and install her in the hive.

**Alie:** How much does it cost to buy a new queen bee?

**Amanda:** It depends on where you're getting her from. You can get locally raised queens for \$40 or \$50, but I've heard that you can order very specifically bred hygienic queens for several hundred dollars.

**Alie:** Like a purebred dog, kind of?

**Amanda:** Yeah.

**Alie:** That's nuts. I didn't even realize that was a thing. Emily Barnett wants to know: Do bees know they're going to die when they sting you or do they just sting people and then go, "Aw, nuts!"?

**Amanda:** You know, I'm not sure if they realize that that's the end for them. I think that they're more driven by that instinct to simply protect. But it also makes me wonder if drones know that they're going to die after they mate with the queen.

**Alie:** They die after they mate?

**Amanda:** Yeah.

**Alie:** They just drop dead?

**Amanda:** So, similar to the way the stinger and the venom sac get ripped out of a worker bee, the penis and his innards fall out.

**Alie:** *[as if in pain]* Ohhhhhhhhhhhh...

**Amanda:** And I've found a drone on the ground, dead and spent, and you could see that he had made it because his little man parts were hanging out.

**Alie:** Oh my God. So, he made the cut but it ripped his dick off!

**Amanda:** Yes.

**Alie:** Wow. That is severe.

**Amanda:** It's brutal.

**Alie:** Man, and I thought dating just on apps was bad. That's rough.

**Aside:** [Alie's voice in deep tone with typing sounds in background] "Girl, you are so fly, I would rip my dick off to father 60,000 of your children."

**Alie:** Eric Blanc wants to know: I want to help bees in my area. What's a good resource to find out the proper wildflowers to plant for them?

**Amanda:** I would go to the local extension department at the university. Xerces Society has a lot of resources. Pollinator Partnership also has a lot of resources so you can find what's growing in your area.

**Alie:** Pengwenpenguin and Carrie Stuard both want to know: Have you seen *Bee Movie* and what are your opinions on it?

**Amanda:** \*SIGH\*

**Alie:** Heavy sigh.

**Amanda:** I *have* seen it.

**Alie:** [laughs] Feelings?

**Amanda:** I think that its fulfillment of raising awareness on the plight of the pollinators and raising awareness of bees in general, yes, thank you for that. But, there's some serious misinformation.

**Alie:** What's the worst flimflam you'd like to debunk?

**Amanda:** The workers are not boys!!!

**Alie:** [huge belly laughs] I didn't realize that! I have never seen it! I didn't realize that it's this off base!

**Amanda:** Yeah. So, Jerry's bee character... It's been a few years since I've seen it, but I was seething with rage because of this. He wasn't born for the part of foraging, but he had to prove himself to be able to join the ranks of the foragers. Every bee, every worker bee gets to be a forger.

**Alie:** [still laughing] And they're not dudes!

**Amanda:** They're not dudes!

**Alie:** [both still laughing] Oh my god! So, he eventually winds up as one, right?



**Amanda:** He does get to do it, but you know, they make him look different from the other foragers and he doesn't fit in and it's...

**Alie:** Come on, guys...

**Amanda:** Get it together! If you're going to put out a movie that's a big movie like that, that's going to reach millions of people, get some of that basic information right! Is it just me?

**Alie:** No!!! That's infuriating. They should have shown him tending babies, doing some cleanup, doing some food prep...

**Amanda:** Yep.

**Alie:** And then go out and be a soldier.

**Amanda:** Yes!

**Alie:** That's a fine lesson in and of itself! I understand why that would be annoying.

**Amanda:** Yeah.

**Alie:** Victoria Patterson wants to know: Is it actually good to keep bees and is there a type of bee that is best for keeping?

So, I think she's wondering like with honey bees, are we doing a disservice to keeping them? But it sounds like you're giving them a place to live and some care.

**Amanda:** If you can provide them a safe nest site and you help maintain that for them. Because if you're going to put bees in a man-made hive, they're going to need maintenance. You can't just throw them in there and walk away.

**Aside:** Fun fact: if a bee's colony is naturally occurring, it's called a nest. If it's human made, it's a hive.

**Amanda:** But if you provide nesting for native pollinators, that's also a really easy thing to do and it's helping our native population.

**Alie:** That's good to know. I didn't realize that it was that simple to keep like mason bees.

**Amanda:** It's really easy.

**Alie:** Are carpenter bees kind of easy?

**Amanda:** I don't keep them, but I see them. I know they're around.

**Alie:** They're so huge. I love them.

**Aside:** Now, if you've ever seen those huge black bees buzzing around in the summer, they're probably carpenter bees, which drill out these perfect little tunnels in wood to raise their young. The females are black and glossy and they rarely sting. The

males are this golden blond color and they don't even have stingers, of course, 'cause they're dudes. Now, these facts are helpful conversational distractions if you ever see one and everyone around you is shrieking, "Kill the beast!" Because they are big.

**Alie:** Greg wants to know: What's the current situation for bee populations in America and the world? Last summer there was a break in colony collapses and I was wondering how we're doing, what we we've learned since then, where we're headed in the near future?

Was there a break in colony collapses or was that just good PR?

**Amanda:** I don't know about that. I think that generally the wild honey bee population is doing okay. It's the managed hives, it's the ones that are used in agricultural practices that we're seeing the big issues with the colony collapse.

**Alie:** Um, dumb question, maybe... Do native bees make honey and bee bread and all of that? Or is it only social colonies that do it?

**Amanda:** So, bumble bees, they're sort of social, sort of solitary. They work in really small colonies, maybe 20 bees or so.

**Alie:** Ohhh! It's like a co-op.

**Amanda:** Yeah. And they will make a little bit of honey, but generally native bees are solitary and they don't make honey. They do gather pollen to feed their young. So, a mason bee for example, when they lay their egg they'll put a little pollen packet right next to it and then they mud off its chamber. So, it's in its own little crib with its pollen packet...

**Alie:** That's so cute! It wakes up and lunch is made!

**Amanda:** Yeah.

**Alie:** Ohh, that's so adorable!

**Amanda:** So, you see the mason bees flying into the tube, with the big pack of pollen on their belly, you know they're providing for their babies.

**Alie:** That's so cute. Like a little Lunchable.

**Amanda:** Yeah! *[laughs]*

**Alie:** Heather McCain wants to know if you've ever seen a beehive, like, in an abandoned vehicle or something cool like that.

**Amanda:** No, I have not...

**Alie:** Can you imagine? Like, "That's a sweet old Datsun!" and then, "it's covered in bees!!"

**Amanda:** No, I did get a swarm call, but this kinda has a very sad ending.

**Alie:** Oh no...

**Amanda:** The guy was at Costco and a swarm landed on his car. And, he didn't know what to do, so he went through the car wash.

**Alie:** Oh!! No!!!

**Amanda:** And then went through again and the bees were still, you know, obviously a lot of them had come off, but there was still some hanging on. So he drove home and he's, like, going on the freeway, and the bees are still hanging on, and he gets home, and there's just sad clump of bees, and *then* he calls the swarm hotline.

**Alie:** Awwww....

**Amanda:** And I got the call, and I knew when I saw the description of it that it wasn't going to be good, but I thought, Okay... I always look at it as a teaching opportunity. So I went and he told me what happened and I'm just like... my jaw is on the floor. Really, guy??? This is really sad. And he felt really awful when he realized, had he called *then*, from the Costco parking lot, somebody would have shown up and gotten them and they would've been fine.

**Alie:** What kind of car was it?

**Amanda:** Oh... some sedan.

**Aside:** "Some sedan." Her level of raw disdain is, honestly, deeply endearing.

**Alie:** Did the queen bee somehow get caught in his sedan and everyone followed?

**Amanda:** I don't know why they choose their muster point. I don't know what the criteria is, but they happened to land there and maybe she had gotten stuck.

**Alie:** She's like, death by Camry.

**Amanda:** Yeah.

**Alie:** Hooooah... Kimberly Brown wants to know: How do I start up my own hive and are there better climate to have a hive?

I have no idea where Kimberly Brown lives.

**Amanda:** I have beekeeper friends all over the place. I have a beekeeper friend in Rhode Island and their winters are *really* harsh. It can be done. I would just try and find bees that were raised locally, if you're gonna buy bees. And do your research ahead of time, take some bee classes, join the local bee club, makes some bee friends. You'll be fine.

**Alie:** Are bee friends pretty cool friends?

**Amanda:** Yeah, totally. Bee friends are the best friends.

**Alie:** Awww!!! Have you made a lot of friends through the Portland Urban Beekeepers?

**Amanda:** Yes. Absolutely.

**Alie:** How many members do you have?

**Amanda:** We have between two and three hundred members.

**Alie:** Whoa!!!! That's a lot of people.

**Amanda:** It's a lot of people!

**Alie:** And you're La Presidente! *[laughs]* Jill Kerswill wants to know: Is the human consumption of honey good or bad for bad for bee populations? On the one hand, we're farming them and creating safe spaces for them to live. But on the other hand, we're stealing all their magical juices!

So, we kind of covered this. If you're going to keep bees in your backyard, is there a medium where, let's say, you want to use the honey but you only take a little bit of it?

**Amanda:** Yeah, certainly you could do that. I would wait until you have experience reading the hive because one year might be very prolific in honey and nectar gathering. The next year might be a total bust. It just depends. It depends so much on the weather and the health of the colony. So, once you learn how to read those things then you can make your own decision of, can I take a little bit without hurting them too bad?

**Alie:** Just do a waggle dance and be like, yes or no? Are you vegetarian or vegan at all?

**Amanda:** I'm not vegan, but my tattoo artist is a vegan and we had this discussion about 'what about honey?' The same thing applies to beeswax as well because it's a byproduct and her feeling was 'I might eat honey from your bees because I know that they've been treated well, but buying honey from the grocery store, definitely no.'

**Alie:** Okay. So, know your sources.

**Amanda:** Yeah.

**Alie:** And John Worster and Jesse Peel both had the same question: Will eating honey that's been harvested locally help if you have seasonal allergies?

**Amanda:** Word on the street is that it does.

**Alie:** So it gets your body used to, maybe, those pollens?

**Amanda:** Exactly. I'm not an allergist, but yes, it's like you're inoculating yourself with the irritant and your immune system adjusts to that rather than taking an antihistamine to just suppress any kind of response.

**Alie:** Right. That's good to know.

**Aside:** I looked up some studies on the National Institute of Health and yes, apparently this *does* have merit. The control subjects were given honey-flavored corn syrup and they had more allergic rhinitis symptoms than those given local honey. Which, in terms of being in a test subject in a medical lab, I have to say, eating honey seems like you lucked out. There's a lot worse things someone could do to you in a medical lab, you know?

**Alie:** Katie Grant wants to know: Are bees actually more attracted to bright yellow clothing? I wear a safety vest for work and was told that an orange vest won't attract bees like a yellow one does. Is this true??

**Amanda:** In my own personal experience when I wear my bright yellow coat, I do have bees land on me.

**Alie:** Wow!

**Amanda:** Maybe it's because you look like pollen, I don't know.

**Alie:** Well, okay, so there's some experience with that!

**Amanda:** I think there is something to that.

**Aside:** Apparently, yes, it's just because you look like a flower, folks. So, a yellow shirt around a bee is kind of like wearing a salmon outfit and being like, "What are all these bears staring at?"

**Alie:** Jared wants to know: I've read that bee species will gather in a ball and increase the local temperature in order to cook wasps and other invaders like Japanese hornets. So what is that mechanism and how do they not cook themselves in the process?

**Amanda:** It's called balling.

**Alie:** Boom!

**Amanda:** Yeah! *[laughs]*

**Alie:** Appropriate!

**Amanda:** So, they will use their body heat to cook the predator. They will also use this technique if they are trying to kill a new queen that's been introduced. If they don't like her, they will ball her. And, I don't know how they don't cook each other. I imagine it's because they're moving around and they're not in the center of that heat sphere.

**Alie:** Oh my god. Ball so hard. That is extreme. They cook 'em!

**Amanda:** They cook 'em.

**Alie:** And then they put them on the doorstep. They're like, "You out."

**Amanda:** You're out.

**Alie:** Wow. I've heard that Japanese hornets, that's one way that bees can kill them.

**Amanda:** Yeah, I've seen them do it to yellow jackets in my own yard.

**Alie:** How do you feel about wasps in general?

**Amanda:** There are wasps that I like, like paper wasps. I have a few nests around my yard and under the eaves of my house. They generally stay very small, and they pollinate, and they also eat aphids. So I find them to be very beneficial. But when it comes to yellow jackets, I draw the line.

**Alie:** Are they mean?

**Amanda:** They're mean, they're not pollinating. They go after the beehive, and they will go in in numbers, and they can wipe out a hive that's weak.

**Alie:** Dicks.

**Amanda:** And that's a hard thing because as a beekeeper you hear all these stories from people, "Oh I hate bees, you know? They were at my picnic and they were stinging everybody." Those were yellow jackets. I could just say hands down, I don't even need to see it. I know just from that account it's not a bee. It's a yellow jacket. I think they get confused a lot,

**Alie:** Right! Stripes. Yellow. Stingers.

**Amanda:** Yes. They're about the same size, they sting, but the reality is that they are enemies.

**Alie:** Wow!

**Amanda:** They are enemies to each other.

**Alie:** It's like two women on *The Bachelor* who look alike, but they hate each other, and one of them is more of a bitch.

**Amanda:** Yeah...

**Alie:** Now, yellow jackets tend to go for like proteins and sugars and stuff.

**Amanda:** Yes.

**Alie:** But bees are out there for the flowers.

**Amanda:** They're out there for the flowers. They don't eat meat. They're just plant-loving insects.

**Aside:** I was a caterer for TV when I first moved to LA and I learned this picnic trick: if yellow jackets, who are mostly carnivores, are trying to eat your food, it can help to lob a slice of lunch meat off to the side so that they all swarm that and then they leave your lunch alone. But you do have to look over from time to time and just check on this piece of bologna writhing with them. It's like a miniature asshole convention.

Oh, speaking of miniatures, Amanda became interested in bees and other insects later in her life partly because as a kid, she loved miniatures and bees are pretty small. She works at a winery during the day, when she's not busy being the president of the beekeepers club, and she also loves making art and ceramics.

**Amanda:** I am an artist, so when I *have* spare time I disappear in my art studio and make things.

**Alie:** Awwww... Do you make a lot of bee art?

**Amanda:** I do. Yeah, and my tree hive is right outside of my art studio so I can sit there and stare at it.

**Aside:** She sent me a photo and it's amazing. It's just like a tree with this hollow, the edges of which are softly carpeted in bees. Her Portland life sounds idyllic. Is there a downside to all of this?

**Alie:** And now, what do you find is the most annoying thing about bees, or about beekeeping, or about your role as president of the beekeepers?

**Amanda:** If there was something super annoying about beekeeping, it would be that it just gets so hot in those bee suits. There is no other time that I sweat except for when I'm keeping bees in the summertime and I've got all my gear on. I have yet to be bold enough or comfortable enough to just, you know, go out and be topless with my bees. *[laughs]*

**Alie:** Semi-nude beekeeping!! *[more laughs]* Maybe in years and years, but it takes a while, I'm sure, to navigate psychologically what puts you in a little bit of danger, right?

**Amanda:** Yeah, absolutely.

**Alie:** Do people ever put ice packs in their bee outfits?

**Amanda:** I've heard of this. I haven't tried it.

**Alie:** I don't know.

**Amanda:** Maybe I should.

**Alie:** Just like, strap yourself with an ice vest underneath. What is your favorite thing about bees?

**Amanda:** I love this thing that they do called festooning.

**Alie:** *[deep Alie voice]* Whut???

**Amanda:** Yeah.

**Aside:** I'm sorry I don't know why I made that noise. I was surprised.

**Amanda:** Festooning is when they're building new comb. So they have to work together to do this, and what they do is they join hands and they make this lovely little chain, and then bees gather together in the chain and they excrete the wax from their abdomen, and they pass it up to the bees up top. So, they are working together while in contact with each other to make this comb, and they make the chain so that it's plumb to the earth, so it's straight. And the comb, when it's brand new, is beautiful. It's very translucent. It's so delicate and perfect.

**Alie:** Oh wow....

**Amanda:** They make it perfect.

**Alie:** In the wild, the honeycombs are architectural, really oddly shaped, it looks like draped fabric almost. What is that called?

**Amanda:** It's because of their chain, their little festoon that they make. They use that to guide the shape. Now in the bee boxes that we keep bees in, when they're building their comb, it does start out that way, but then they end up filling in the extra spaces so it doesn't keep that nice draped shape.

**Alie:** I always wondered about that. And, inside of say a tree hive though, it might be...

**Amanda:** They can make it however they want.

**Alie:** Wow....

**Amanda:** Yeah, there are no rules. *[laughs]* No rules in the tree hive!

**Alie:** I did not know festooning was even a word!

**Amanda:** Yeah.

**Aside:** Just looked this up and a festoon is a chain or a garland of flowers or ribbons hung in a curve like a decoration. So if you Google Image Search it, a bunch of *Pinterest-y* photos of cute twinkly lights hung on patios comes up, and I'm not kidding, twinkly lights and bees are my favorite things. This episode couldn't be more my jam. Okay, speaking of favorite words, Amanda's beekeeping consultation company that she runs on the side is called, you ready for this? *Waggle Works*.

**Alie:** How did you pick that name?

**Amanda:** *[excited]* I love the waggle dance! I think of myself... I'm not a queen bee, I think of myself as a worker bee.



**Alie:** Really? Do you think of people in your life in terms of kind of like different, um, social structures of bees?

**Amanda:** Sure! Or other insects. That guy's a *total* caterpillar. *[laughs]*

**Alie:** Does that mean they get better with age?

**Amanda:** Yeah! *[laughing]*

**Alie:** Awwwww... That's so cute! I hope you don't encounter too many wasps.

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To find out more about Amanda and her bees, go to [WaggleworksPDX.com](http://WaggleworksPDX.com) or you can find Waggle Works on [Facebook](https://www.facebook.com/waggleworks). And to learn more about beekeeping, both native and honey beekeeping, definitely look around for a local club or try to connect to some other beekeepers online.

As always, links from this episode are up at [alieward.com/ologies](http://alieward.com/ologies) and you can follow the podcast *Ologies* on [Instagram](https://www.instagram.com/ologies) and [Twitter](https://twitter.com/ologies). It's just @Ologies. I'm on there too, [@alieward](https://www.instagram.com/alieward). There's also plenty of amazing t-shirts, and Ologies phone cases, and baby onesies, and pins at [OlogiesMerch.com](http://OlogiesMerch.com). Thank you Shannon Feltus and Boni Dutch for helping *so* much with that. And to support even 25 cents an episode go to [Patreon.com/Ologies](https://www.patreon.com/Ologies). This is an entirely independently-made podcast and it's funded just by listeners like you to help pay folks to make it happen each week. I could not do this without the incredible Steven Ray Morris who works *so* hard to cut it all up. He edits it all together based on a 25-page annotated transcript I send him at, like, 2am on a Thursday night.

The theme song was written and performed by Nick Thorburn of the band *Islands*. Thank you Erin Talbert and new Boston resident Hannah Lipow for adminning the [Ologies Podcast Facebook group](https://www.facebook.com/ologiespodcast), where all the chill folks post all kinds of cool links and chat about episodes.

Now, if this is not your first Ologies rodeo, you know that I tell a secret at the end of each episode, if you made it through the credits, as a thank you. And this week I'm here to tell you that I went on trip *three* weeks ago. Just a weekend trip to Palm Springs, celebrated a friend's birthday. I have not unpacked that bag. I'm staring at it. It has been packed for almost a month. I don't know what's in there. Apparently I can live without it. And every single day I look at that duffle bag like goddammit, Alie, just unpack that duffle bag. And, I'm like no... not today. Maybe tomorrow. Okay, berbye!

*[Outro music]*

*[deep Alie voice]* "I'm the queen now, bitch."

*Transcribed by Mike Melchior.*

***Some links that you might enjoy:***

[\*Why Mason Bees Fucking Rule\*](#)

[\*Where all all these damn bees going, tho\*](#)

[\*Melissaphobia\*](#)

[\*"More Than Honey" trailer will scare your pants off\*](#)

[\*Wasps need to GTFO\*](#)

[\*Verroa destructor\*](#)

[\*Basic beekeeping set at Amazon\*](#)

[\*Bee venom is complicated, okay?\*](#)

[\*Mellittin is savage\*](#)

[\*Who goes with which queen?\*](#)

[\*What do queens eat?\*](#)

[\*LL Langstroth -- I said 1950s but I meant 1850s! Plz don't @ me\*](#)

[\*Worker bee jobs\*](#)

[\*Quaking tooting piping, oh my!\*](#)

[\*Hives vs nests\*](#)

[\*How cute are carpenter bees?\*](#)

[\*Honey allergies\*](#)

[\*Waggle Works, Amanda's bee consulting company\*](#)

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