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EPISODE 204 TRANSCRIPT

Jamie

Welcome to Two Bees in a Podcast brought to you by the Honey Bee Research Extension Laboratory at the University of Florida's Institute of Food and Agricultural Sciences. It is our goal to advance the understanding of honey bees and beekeeping, grow the beekeeping community and improve the health of honey bees everywhere. In this podcast, you'll hear research updates, beekeeping management practices discussed and advice on beekeeping from our resident experts, beekeepers, scientists and other program guests. Join us for today's program. And thank you for listening to Two Bees in a Podcast.

Hello everyone, and welcome to another episode of Two Bees in a podcast. Today, Amy and I are joined by Eugene Makovec, who is the editor of the American Bee Journal. Eugene, thank you so much for joining us on this episode.

Eugene Makovec

You're welcome. Thanks for asking me.

Jamie

Now, Eugene, we had you some time ago. I can't remember when because we've filmed over 200 episodes now. I don't remember what episode we had you, but we had you on.

Amy

I think it was like 2020, honestly. I think it's been five years.

Jamie

Really?

Amy

Yeah. It’s been a while.

Eugene Makovec

That sounds about right because I was fairly new in the job, and I started at the beginning of ‘19.

Jamie

We should ask the same questions, Amy. Then we see if his answers change now that he's got five years under his belt.

Amy

I know, and compare.

Jamie

Well, nevertheless, Eugene, you and I work together behind the scenes because you invited me some time ago to be the classroom writer, the Q&A. I won't talk about who your favorite columnist is in the journal, and I won't ask you any of those questions, but I do have some follow up. I think you've got a unique position in the beekeeping industry because you see so much, you hear so much, you edit one of our huge national beekeeping magazines. I just want to start there. Even though folks have heard you before on this podcast, it's always good to have you reintroduce yourself.

So, could you talk a little bit just to remind our listeners how you got into beekeeping and how you ended up at the American Bee Journal?

Eugene Makovec

All right, I enjoy this story because I took a roundabout route to this. In fact, it is interesting. When I met Joe Graham, I told him, you know, I thought that he'd been around a while in the job. He was the editor for 43 years. I met him in about 2010, I guess it was. But I said, yeah, you've been here for quite a while, right? He said, yeah, I got out of journalism school and answered an ad in the paper, and I've been here ever since. So, he went to school, got this job that was in the field he studied in, and it was the perfect fit.

I took a much more circuitous route. I actually have a journalism degree, but I put that thing on the shelf and got into printing and photography on the side, and some other things. But I started beekeeping almost by accident, too. My dad had bees when I was growing up, but we were on a dairy farm in Wisconsin. There were ten of us siblings and dad was mostly concerned with just keeping food in all of our mouths. And he kept bees on the side, and it was just something he kind of did on his own and didn't really share directly with the rest of us. And I always thought the bees were kind of cool, but that was about the end of my interest.

So, when I was living down in Missouri as an adult, I would go up there whenever I'd go back home for something, I'd pack some jars and get myself a stash of honey for a while. And when dad got to the point he was having some health problems, ended up having a kidney transplant, well, with his issues, he was no longer farming. And the beekeeping kind of went by the wayside. Varroa came along and put the finishing stamp on that. But suddenly, I found myself without a honey supply, and it wasn't the same buying at the grocery store. So, I called my dad and started asking him about bees. It's one of the greatest things that I've done for two reasons. One, I got to know my dad better. I was #8 of those 10 kids. I never really had a relationship with my dad. And I started asking about bees. He was thrilled that somebody was interested, and we had some good discussions. And then for the last few years of his life, whenever I'd call about anything, he would bring up the bees. We talked bees among other things. So that was pretty cool. Of course, the other good thing was it my introduction to bees just changed my life. I still

had a real job for all these years. I started in ‘96 with bees and I was working in the printing industry. And about 10 years later, I guess it was 2006, I took over newsletter for the Missouri State beekeepers. And that was something that was struggling. They put out something in one of the occasional newsletters that came out, said we really need an editor, we've got nobody right now. So, I thought it'd be a good creative outlet for me because I like to write, I like photography. I was getting into some graphic stuff, and so I took over this newsletter and kind of turned it into something more professional and made enough of a splash that they gave me Beekeeper of the Year that year.

And as people, anybody who's done this knows, when you take over something like that, you become responsible for a lot of the content too. So, I started writing a little column. I called it The Empty Super Diary of a Hopeful Hobbyist, I think was what I called it. It was basically stories about my, let's call them learning experiences in beekeeping and, you know, somewhat humorous a lot of times. And I had this ongoing column in there. And part of the nice thing about improving this newsletter is we were able to sell advertising. And among those advertisers were Dadant/American Bee Journal and also Bee Culture. So, the editors of those two magazines got this newsletter every two months when it came out and they started picking up articles from me. They’d e-mail and say, hey, I like this article you ran last month. Would you mind us reprinting it in the journal? So, that was a pretty neat thing, but I got to know both Joe Graham and Kim Flodin a little bit. And I also went to all these meetings that the association had, their twice annual meetings where they bring in well-known speakers like Jamie Ellis and various other people that were kind of the leaders in the industry.

So, I got to know some of those people because I put them on my e-mail list, and they'd emailed me about things and that was pretty cool. And then at one time or another, eventually Joe Graham retired. And I did not know it at the time, but I'd always kind of thought, you know, when one of these guys retires, I'm going to put in for the job and just see what happens. Probably won't have a chance, but who knows?

Well, Joe retired, and they actually ran a small ad in the Journal, and I didn't see it. Kirsten Trainer took the job, and I sent Joe an e-mail one time about something, got an out of office type response saying I'm no longer editor, contact Kirsten Trainer, and I thought, dang it, how did that happen? So, as it happened, Kirsten left after about 14 months or something and the job came open again. I just happened to have a chance discussion at a conference. I ran into one of the Dadants and asked him about how the new editor was working out and just kind of said, hey, I wish I'd known that job was coming open because I would have thrown my hat in the ring.

And he looked at me and he said, I wish I'd known you were interested. Well, then it was a matter of a few weeks when the editor stepped down and he gave me a call and said, why don't you come talk to us? And just like that, I was editor of American Bee Journal, which was kind of a dream job for me. I mean, this was ABJ. It's been around since 1861. It has been a leader in the

industry, and the Dadant family who publishes the journal is of course one of the big names in the beekeeping industry, also from the 1860s. So, it's really a pretty neat thing for me.

Amy

That's such a fun story to hear. Your history, you know, just building your relationship with your dad and then how everything just kind of falls into place, right? And it just seems like you're the perfect fit. You're in your dream job, so that's really exciting. That's awesome. I love that. As the American Bee Journal editor, I'm sure it takes a lot of work to get this magazine out. I think many of our listeners on the podcast are probably pretty familiar with the American Bee Journal. So, the other question that we wanted to ask was basically, you know, what does it actually take to get this magazine out? I'm sure it's a lot of work. And then how do you work with the writers?

Eugene Makovec

Yeah, it is a lot of work. And one thing that surprised me when I was offered the job and accepted and I started telling people about it, I was surprised that the people that would ask me, there were several people that asked me, well, that's not a full-time job, is it? I was taken aback at the first time and I thought, you know, as far as I know, it is. Maybe I'll be pleasantly surprised and only have to work 20 hours a week. But trust me, it's a full-time job. I mean, it is a cyclical job and it's very much an up and down cycle. There is a pretty hard print deadline for us, which is generally about the 1st of the month. So, the April issue, for example, went to the printer about March 1st. We had to approve proofs. And when that's done, I can kind of breathe and catch up on some housekeeping folders and files and things like that and do some other things other than just editing articles. If I want to take a little vacation, now's the time. Then I do that. I'm talking to you on March 5th. This is the time when I have time to do a podcast or something like that. Now, of course, there's no real vacation for me because I'm the editor and I'm it. There's no backup. Everything comes through me. There are other people that work on the magazine. There are three other people listed on our masthead, but there's advertising and layout and some other behind the scenes things. And I mentioned the journals published by Dadant, there are several other people at Dadant that have a hand in this or that with accounting and mailing lists and things, but I'm the only full-time employee whose sole purpose is the journal.

So, that's, like I said, there's nobody to back me up if I take off and go traveling somewhere. Anytime I leave home for more than a day, I'm packing my laptop so I can at least keep up with emails and things. But when this cycle I talk about, my typical deadlines for writers are generally the 15th or the 18th with my columnists. And when somebody sends me an article, I read this article, and I make edits to it. I'll pull it up in Microsoft Word with the track changes option on, and I will make my edits, and I will send it back to the writer and give them the chance to take a look at those edits. I tell them in case there's anything you want to fight about, get back to me and let me know. And in most cases, people say, oh, yeah, it looks great. Sometimes, there'll be, oh, yeah, this, you know, I'm not sure about this. Why did you change this? And, you know, it's

funny. It's usually the better writers that will come back, some of the best writers will come back and actually argue a point. I put that comma there for a reason. Or, I really like the way I said it better than the change that you made to us. And we'll go back and forth. And you know what? Sometimes, they're right. Not very often, but sometimes they'll come back with something, and I'll say, you know what, you're right, I'm going to change that back. Or how about we try this because I think this is more understandable. But once we're happy with it, then I gather the photos and images that came with that, and I send this all to Grace, our layout artist, and say, here, go ahead and lay this out. There are times when I'll give her some guidelines, say I need this this image to run page wide because there's some detail that we need to see or some things like that. But generally speaking, I'm handing that off to her and she's doing a layout and then she sends me a PDF of that layout. I print it out and I go through it again and I catch a couple of typos that I missed the first time around. I might say move this photo here or do that or start a new paragraph in this spot.

But basically, we go back typically 3 or 4 times, and once I'm happy with it, I'll run it by the author again. And I do this for a couple of reasons. One is I've been on the other side of this, and I've sent things to a magazine or a newspaper and the next time I see it, it comes out in print, and I look at it and say, why did they change this? This paragraph doesn't even mean what it meant when I sent it to them, that sort of thing. So, I know that writers don't like those kinds of surprises. But the other reason I do it is if I'm sending you back my changes, then you can kind of get an idea of what my style preferences are, how I do just simple things, like the period goes in front of the quotation mark, you know, things like that that lot of people don't think about. And hopefully the third time around you're going to get the idea, oh, I need to do that differently. So, that makes life easier for me. Some of those things just sound silly. But there's some other more, maybe, substantial things like just word usage in the industry, like the difference between a hive and a colony. No, you're hived didn’t swarm. Your colony swarmed. Just little changes like that, I try and make things make more sense to people. This, of course, happens with every article that goes in that month's journal.

And then about 3 or 4 days before we go to print, Grace will send me an estimated page count. Once she's got all the ads, the one thing that I don't see way ahead of time are the ads. I don't see those until we're putting that puzzle together. But once she has all the ads, she'll send me an estimated page count, say, OK, we've got 144 pages here this month. And I say, uh-oh, I'm shooting for 116 this month. So, then I go back and I say, OK, let's push this one. Let's push that one. This one's time sensitive. It's got to go in this month. This one, I've already pushed three months in a row. This article, this author deserves to have this printed some time, so I'm going to make sure I get it in this month. So, there's a lot of that kind of thing that goes on.

We sit down then, and I give her which articles I want to pull forward and she'll come back and say, well, that won't work because these ads have got to move and now we've got a quarter page that we don't know where to put it, so I got to change something else around. It gets complicated,

but once we get it all together, then she puts the whole thing together in one PDF. She prints it out for me and then I go through it again, and we make a bunch of changes back and forth again, you know, and then once we get it all together, it gets uploaded to the printer and they pop it out on their proofing website. And then we've got a day to go back and make more changes, upload new pages and get that done. And then it's all over but the stress and wondering if we've messed something up before the thing comes out. So, it's fun.

Jamie

Eugene, this all sounds absolutely terrifying and like a lot of work. Like I was listening to you talk about author preference since I'm a columnist, I'm like, man, I need to take notes about everything he's saying here.

Eugene Makovec

It's funny, I've mentioned sending these to these authors and every author is different. With you, I don't usually send that first edit back to you because there's not a lot that I need to change. You're like Mary Poppins, practically perfect in every way. So, I get your articles. I usually only send it to you if there's something significant that I feel needs to be changed, I'll run it by you. But I do always send that layout back to the proof.

Jamie

Well, I appreciate that. I don't believe that I'm a good writer, but I do appreciate that. I do have an interesting question that came to my mind when we were thinking about questions to ask you. And I feel like I've got to set the stage a little bit. So, you know, we live in the US, and we've got an international audience. People from over 70 countries listen to us all around the world, maybe more. We are a free speech nation, and obviously the last 8 or 10 years people have been talking about fake news and free speech this and free speech that and fact checking. All of these are terms that might have existed 10 years before, but it's just things that people talk about non-stop now. So, you're the editor of a magazine and people would think out there, well, gosh, there aren't any hot button issues in the beekeeping world. Of course, you and I, Amy, know that's not true.

There's a lot of very controversial things. So, what do you see as your role as the editor in fact checking papers? Or do you feel like you need to? Like, let me just say, for example, I write the Q&A series, right? So, I actually want to tell the truth to people who are asking me questions. So, if you say, Jamie, I think your answers are off, or have you considered this paper, I want that. But I can imagine there's a lot of authors who just want to say what they want to say, and you might see an issue that you need to address. So, the short version of everything I just said is what role do you play in fact checking papers?

Eugene Makovec

Yeah, that's a very good question. And it's a hard question because there are disagreements on things. There are disagreements among researchers on different things. Part of it is, maybe disagreement is not the right word, but things change as the research finds new things, some things that we thought were the right way to do things, now we wonder if maybe that wasn't the right way to do things. If there's something that comes through in an article that I think is questionable, and I've been a beekeeper, this will be my 30th year, and I've been reading the magazines and various other things. And I feel like I've got a pretty good base of knowledge, but I'm not the be all and end all of honey bee knowledge by any stretch.

So, when something comes in that I question, my first action is to go back to the author and say, hey, what you're saying here, are you sure about this? And what do you base it on? And they might come back and cite a study, say, hey, I found this somewhere and that's where it comes from, or they might not, but I have plenty of contacts that I can go to and say, can you check this out?

Dewey Caron comes to mind. I bounce things off him every now and then say, hey, this came to me, and please take a look at this paragraph and see if it makes sense to you. Sometimes, it surprises me. He'll come back and you'll say, yes, that is correct, and here's what it's based on, and I actually put it in my new book. Those sorts of people are very handy to me. I know there's been one or two things that I've bounced off of you as well. I have go-to people I can ask those hard questions. As far as just opinions about things, I try and keep politics, for example, out of it. When people come by and say, well, the government needs to do this or the government did that, I kind of dial things back sometimes. Let's argue about policy, but let's not mention this or that politician or things like that because I don't need a slew of letters coming through on both sides of the issue for the next 6 months. So, let's just kind of tread lightly on this. I hope that answers your question.

Amy

Yes. So, Eugene, you've read a lot of articles, you're the editor, you've seen this, you've been working for Bee Culture for about 5 years now. Given your experience across the industry, what do you think are the greatest short- and long-term threats to beekeeping?

Eugene Makovec

Yeah. The biggest threat as always for the last few decades has been Varroa. That's unfortunately not going to change apparently anytime soon. I would have thought we'd be about done talking about that by now, right, 20 years ago, somebody at one of the club leaders in the area. So just once, I'd like to go to a meeting that we're not talking about Varroa. Let's move on to something else. And here we are, every meeting we're still, half of our talks mentioned Varroa in one way or another. I think in the short term, the biggest problem that we have is just the whole import and

adulteration issue that really has made things difficult for commercial beekeepers coming out of winter here.

We're hearing a lot of stories about higher-than-normal losses among commercial beekeepers, and they talk about the possible threats to pollination crops and things, but what's driven the industry in the last few years has been that pollination money, and the honey money is not there for the most part.

Now, there's still people that make money on honey, but given all the cheap imports that come in, it's very difficult to make a buck just being a honey producer. And the problem is not so much that there's competition, it's just the competition of adulterated honey is the biggest deal. We had tariffs slapped on the Chinese about 20 years ago over what they call dumping. And dumping, by definition, is something like selling honey for less than the cost of production. And a lot of products and things are produced in China much cheaper than what we can produce them in the US, but that's not really the issue. The issue is what is that honey that they're producing? In so many cases, it's adulterated with corn syrup and rice syrup and other cheaper sweeteners and sold as honey. When those tariffs went on, suddenly we weren't importing the honey from China, but we were importing it from a lot of neighboring countries over there that weren't exporting honey before that. So, everyone knew and still knows that there's a lot of honey just being transshipped from China to other countries and then shipping over here with a bogus country of origin. We don't do a good job of testing that. It's kind of an arms race, too, between the adulterators and the purchasers and the testers. As the technology changes, we'll find a new testing method here and they'll find another way around it. It's just like everything else. It's the police versus the criminals. We just need to do a better job, in some way or another, of keeping this fake honey out of the country because it's just not good for the industry and it's not good for consumers either.

Other longer-term things, Tropilaelaps, of course, has been discussed quite a bit in the last several years. This is another mite that's in various parts of Asia, and apparently in parts of Russia now too. We worry about that finding its way through shipping ports into our country.

World Trade is a great thing. It's great to be able to buy fruit in the middle of winter. It's great to be able to get products for lower prices than we can afford to make them here. But part of the problem with importing things is their unwanted guests that come along too – pests and invasive species and various things. And Tropilaelaps, one way or another, is going to become a problem. I think it's just a matter of time, and that's something a lot of people are talking about and hopefully, we'll have ways to deal with it better than we did with Varroa when that first came along.

Jamie

Well, Eugene, I think you hit everything that people would say, right? Varroa, the way you described the honey issue is it's basically honey laundering, right? Instead of money laundering,

right? It's what's happening. And then these emergent threats like Tropilaelaps. I want to pivot to a better topic that maybe will bring some happiness into the conversation. You're probably like me, Eugene. Like every time I get invited to speak somewhere, they want me to talk about the problems and how to solve them. So, I basically travel in the world talking about things that kill bees, which can get kind of depressing. So, we just asked you about the greatest short- and long-term threats to beekeeping. We're going to pivot to something a little bit more flowery, maybe something that would be good for our beekeepers to get them excited. So, all that said, you've been doing this. You read articles from all over the world from all sorts of authors. What topics do you enjoy?

When you get an article and it's topic A, you're excited to read it. What is that topic? What are some things you like to learn about and read about in the bee world?

Eugene Makovec

I'm like a lot of readers. I'm in this to be a better beekeeper. I know Joe Graham told me when I started, he said, “Most people are reading this magazine to find ways to become a better beekeeper.” So, as I'm reading things that come through to me, that's one of the things that excites me. If somebody sends me an article about how to build a better mousetrap, per se, you know, how I can better control these pests. I can prevent wax moths from destroying my drawn comb. I can get more colonies through winter, and I can produce more honey to supply my markets. Those are the things that I like to read about. I assume that those are the things that our readers like to read about.

I also like some other interesting things like, well, let's see, Julia Mahood wrote a couple months ago about prison beekeeping, which at first glance, you think, “What's that all about?” Well, they've got a program in Georgia that she drives for the most part, where they've got prison beekeeping groups where they're actually keeping bees within prison grounds. And that, as you can imagine, is a very challenging thing. She had some pretty good stories about the things that they deal with. One is just having to go through 7 or 8 locked gates to get from entering that prison back to where they're keeping the bees. And then of course, all the stuff that they're using. As you can imagine, you can't have hive tools and smokers and things like that lying around for easy access. So, there's a lot of hurdles you have to clear to do all those things. But it's a really neat thing in terms of improving the lives of some of the bees behind bars, giving them interesting things to do to keep them out of trouble, so to speak.

But it also has changed the lives of the people who are involved in instructing these beekeepers. So, I thought that was a really neat story. Another one that comes to mind just recently was Wyatt Mangum, one of our regular columnists. He wrote a three-part story about how bees see each other and how bees see things in the hive. Because, as you know, they have a different color spectrum than we do. We go from violet to red, whereas they see ultraviolet on the one end, but they don't see red on the other. So, he set up some ultraviolet lighting and looked at various

things in the hive to the best of his knowledge, how bees would see things and how fluorescent lights show up.

Imagine taking a black light and turning off the lights and turning on a black light and just see how different everything looks. It's a long nose line. But one of the things that I thought was really cool, and I just brought this up last night, I was giving a talk to a club about swarming, was the Nasonov gland. When bees are sending out that homing signal, they bend that last segment of the abdomen and expose that gland, and then they fan their wings to send this pheromone out. Well, under a black light, under that fluorescent light, that gland fluoresces a bright blue color. So, even if, by his thinking, even if those straggler bees trying to find their way home, even if they're on the wrong side of that prevailing breeze and they can't smell the scent, they could actually see the signal from that exposed gland fluorescing the way it does. So, I think things like that are pretty cool to read.

Amy

Eugene, that point you just made about the pheromone, I just read that article and I saw the picture. It was so cool. So as soon as you mentioned, it was like, I just read that. I just saw that article. Our lab meets every day for lunch. We all eat lunch together. And that's what we do is we sit around, and we open the American Bee Journal, we open other journals, and we just talk about all the articles that are in there. So, it's a good time for all of us to have conversations around the articles that are coming out as well.

Eugene Makovec

That's great to hear.

Amy

Yeah. So, I'm going to pivot a little bit, and I wanted to talk about AI. We're talking a lot about AI these days, other advanced technologies. How do you think this is going to affect the future of publishing? Do you look at AI as far as people submitting articles to you, or do you worry about any of this at all?

Eugene Makovec

A little bit. For the most part, I don't think about it that much until somebody brings it up, and I get a lot of just random articles that get sent to me. And when I think about this now, I'm betting some of those are done by AI. Some things that come in, they're just very, very broad based. How to be a beekeeper or how the wonderful things that bees do, and they're just so – there's not a lot of detail to them. Or if it is, it's kind of sketchy, or they'll throw in that obligatory statement about bees being endangered. And I typically just kind of reject those things out of hand. I always will send a rejection of a nice letter of some sort. I don't like to just send a form letter, and frankly this is one of the hardest things about my job is turning down articles, rejecting articles. I

guess it's because I don't take rejection well myself but just going back and having to come up with a good reason because like I said, I don't like to just send a form letter. This doesn't meet our needs at the time or whatever. I like to tell people why, but a lot of these things, I have to wonder whether they just put something into chat bot and said, generate me an article about this, and I'll go see if I can sell it somewhere.

As far as the AI goes, quality wise, we've actually published a couple of things about that. Rusty Burley was one that wrote a story about her adventures with AI, just trying to see what kind of information comes back and how wrong it is from a chat bot. And it was pretty far off. There's a lot of things that are dead on, but then there's things that are not even close. It's because the AI is basically going out and finding everything on the Internet and putting it together. As you know, there's a lot of good and a lot of bad information out there. So, I don't really feel like it's a threat in the foreseeable future, but it's certainly something that we editors need to keep in mind as people send us things.

Jamie

So, Eugene, I want to build on something you mentioned. Obviously, the American Bee Journal, you're the editor, you must receive so many articles, probably from around the world. What's your process for accepting and moving those forward to print?

Eugene Makovec

It kind of varies. There are times when things are lighter and there are times when I just have gobs and gobs of stuff, and I have enough good stuff where I usually have a backlog of articles. You know, I mentioned that page count thing earlier and I wasn't exaggerating. I have, right now, I think I've got about 8 or 10 articles that are in the queue waiting for me to find room. Some of them have been there for a while. I feel bad for the writers, and I keep going back to say, hey, I'm going to squeeze this in at some point. And it always depends, I mentioned putting that puzzle together, on article length. And sometimes we got room for, I really want to get a three-page article in, but I only got two pages to spare, and it makes it hard. But when things come in, my biggest thing is, is this going to be of interest to my readers? I might think it's a good story, but maybe it's not right for us. I might go back and say maybe this this is a little bit too broad based. Try submitting it to one of the homesteading magazines or something like that. But a lot of times things come in and the ideas are good, but it's just very poorly written.

Kim Flottum told me one time, I was talking to him after he picked up a couple of my articles, and he said, yeah, it's hard to find people who are both good at, say, beekeeping, and also good at writing, or they're good researchers but can't put it into English. Those are special people and not everybody is like that. I get something submitted to me that I just think, wow, how did this guy get a PhD and not learn English along the way? Obviously, present company excluded. There are challenges. And there were two reasons why I would accept an article that is very poorly written

and it's going to require a lot of work on my end. One is that the subject matter is something that I really want in or the idea being expressed is really important. So, I will sit down, and I will do a lot of work and work with that person to make it acceptable to print. The other reason is the person writing it is a person that I really think would be a plus to have in that magazine. So, I will work with him or her to make this acceptable. Frankly, I do have a couple of writers, I'm not going to mention their names, that are very good writers in the sense of ideas and the way they put them into words. But they're not good at stringing a sentence together, or punctuation. So, I spend a lot of time going through to make those things and, frankly, a couple of those people are very popular writers with us, and I'm glad I take the time to do it, but everyone's different.

So, when I do get something in that's just not worth it to me to write, I have to go back and say something to that person. Usually, people understand, and they say, OK, thank you. Every now and then you run into somebody who will argue the point. They'll come back and say, I don't get it. I worked so hard on this article, and I've got all my facts right, and everything else. And I've got to go back and forth. And frankly, if I get too much of that pushback, I end up having to come back and just say, look, this just doesn't meet our standards. I'm sorry, but we can't publish it.

Jamie

Eugene, that was such a fantastic interview. I really enjoyed hearing about it. You know, I'm fortunate because I'm involved in the process and I get to see how you work, but I always think, gosh, it must be so much work. I know I spent a lot of time editing theses and dissertations and stuff like that. When I think about editing a journal that has to go out every month, you have to love it, and you have to want to do it. And also, I feel like you know the service that you provide, and I know there are other folks listening all around the world who may or may not subscribe to ABJ, but they may have their own national magazines, the service that you provide the beekeepers is profound. I think back to my young days as a young beekeeper, and even now, but I just remember reading pages and pages and pages from the journals and learning so much about beekeeping and it's so exciting the work that you do and the service that you provide.

I mean, have you ever thought about that? How impactful you and your journal really are around the beekeeping world?

Eugene Makovec

I have people tell me that, sometimes, and it always is very flattering to me, and it kind of takes me by surprise because I just feel like I'm plugging along, doing my job. I tend to see the mistakes more than I do the good things, I think. I don't know if that's just my personality or what. I see Joe Graham every so often. We go to lunch about every six months probably, and I bounce ideas off him and things. But I told him one time after we'd had what I considered to be a major screw up or the page numbers were wrong on the table of contents because something got

pulled at the last minute and things got juggled around and the cover call out page numbers were off by a page.

These kinds of things just stress me out. When I go back and read something and find a typo that I missed. And Joe said, you know what, I did this for 43 years. I never produced a perfect magazine. You won't either. That's just something you have to live with it. So, basically, told me to relax, it's not the end of the world. But these things bother me. I guess I should appreciate the fact that we are providing value to readers and be more proud of it. And I'm certainly very proud of the product that we produce. I'm proud to be a part of this organization. So, I appreciate that other people recognize some of the good things that come out of this.

Jamie

Well, Eugene, I know you're super busy. I just want to thank you for spending some time with us today and sharing the process with our listeners and how they can get a greater appreciation for all the work that it goes into putting such a quality magazine together. So, thanks, Eugene, appreciate your time.

Eugene Makovec

OK, thank you so much for having me.

Amy

Jamie, I think that was the first time anyone has ever compared you to Mary Poppins, and I really appreciated that he brought it up.

Jamie

Well, he was being kind. I do write the Q&A series, and I submit it to him, and he does make edits, which is what he's supposed to do. And often it's punctuation, things like that, which I completely want him to do. I'm scared to admit this on air, but you know, we're all busy and I'm really busy, and I always try to set it in my calendar when to get those articles to him. But sometimes I'm pushing right to the end. So, I'll do a first draft, I might read through it once just to make sure it's not overly dumb because I say, you know what? Eugene is going to fix all my mistakes, and I'll kick it to him knowing that. And of course he does. So, he really helps out and it's really fun to do it. But, man, Amy, listen to him talk about all the work that goes into it. I know what goes into it with my one article every month. I can't imagine that he does this across all articles, all months. It's mind boggling.

Amy

It is really impressive. I mean, they are consistent about putting really great content out. I love it. I mean, again, like I said, we sit in lunch every day and we'll talk to each other. We'll read articles and we'll just kind of discuss the different articles that are there.

Jamie

Yeah, and I want to make a point, too, Amy, just how important this is. Of course, in the US, we have these two big national magazines. We've got American Bee Journal, we've got Bee Culture. But a lot of countries have their own versions of those things that come out either with their national group or just as a national magazine. Anyway, these things have, for decades, historically, around the world, been trusted resources that beekeepers go to improve their management, to keep up to date with the latest beekeeping trends, to advertise. You heard Eugene mentioned advertisements, like in my own personal beekeeping development, it's been very important to have access to these types of things. Now, I'm flattered to be able to be a part of it sort of on the other end where I can provide that service to the Q&A. And then I think about Eugene or Jerry Hayes with Bee Culture, how they amplify that many times over. So, we need these things. These things are important for beekeepers, and I think play a key role in beekeeping husbandry, sustainable beekeeping.

Stump the Chump

It's everybody's favorite game show, Stump the Chump.

Amy

Welcome back to the question-and-answer segment. Jamie, the first question that we have is about propolis and whether there are different types of propolis.

I think the questioner was asking, or maybe they went into their colony and saw like a sticky taffy like propolis, versus what they saw is kind of like more of a hard candy propolis. So, I guess let's talk about whether there are different types of propolis, or what is he seeing?

Jamie

Yeah, these are good questions. Good thoughts. So, we know that bees don't, for lack of a better term, produce propolis. It's not like they're collecting nectar and converting it to honey. They're collecting tree saps and resins and using it as tree saps and resins. It's just when they move it into the nest, we call it propolis. The reason I point that out, it's not like they're collecting it and converting it to make a sticky propolis and collecting it and converting it to make a hard candy propolis. The consistency of the propolis is really driven by the plant source of the saps or resins, probably as well as the age of the plant saps and resins, you know, how long they've been in the hive and, you know, sun exposure and things like that. So, what do I mean?

Well, the questioner essentially was making the point that when he goes into his hive, he sees this kind of sticky stringy propolis but then sees this kind of hard propolis. Maybe it was under the assumption, well, bees process it to produce these two. What I did, just to check myself is, you and I both know that Dr. Marla Spivak, who's a recently retired faculty member from the University of Minnesota, is one of the world's experts on propolis use in honey bee colonies. She

just really changed the science when she started making comments and research discoveries associated with bees' use of propolis as an antimicrobial. So, I emailed those questions to her as well, and that's essentially what she said to me. Like, listen, Jamie, you know, they're not collecting it and processing it into these two different types of propolis. They're just collecting what's available. Essentially, it would lead to these two different consistencies. But also, propolis ages over time, becomes kind of hard and brittle. When it's warm outside, it can be that sticky, stringy stuff. So, it has a lot more to do with source and age than a bee's purposeful decision to make a sticky variety and a hard variety. So, good, good questions.

Amy

Got it. So, do you think that the bees kind of pick and choose where they get their propolis from? Or is it just whatever is readily available?

Jamie

It's a good question. I think we don't know as much about propolis foraging as we do something like nectar forging. Let me explain this in reverse. So, we know that bees have an affinity for sugar, and they will always choose the greater volumes of high quality, high sugar content nectar.

If there's multiple nectars available in the environment, we can predict which ones they'll go to based on volume and sugar in the nectar content. But we can't really do that as well with saps and resins. We don't know necessarily what they're looking for beyond simply wanting it. So, it is very possible, it's very conceivable that bees say, hey, we have these deficiencies and so we're going to go for this resin or this sap. But it's also possible that they're just going for the sticky stuff that's available in the environment. Whatever they get, they get, right? I think we need to mature that science a bit. And I think, honestly, one of the great opportunities in bee research is continuing this string of projects on how bees use propolis, what decisions they make when they're forging for it. And I think what Marla did and others have done really open the stage to look at this further.

Amy

Definitely. All right. The second question is how far away from a hive do bees defecate?

Jamie

Yeah, I got this question. I love getting questions from podcast listeners. This one actually happened to come in from a beekeeper in the UK. The previous one came from someone who attended our Bee College over the last weekend and emailed me after Bee College. But this beekeeper in the UK, and I'll be very vague in case his neighbor's listening to this podcast, mentioned that he had a neighbor about 125 yards away whose car was getting bee feces on it the last couple years. He mentioned bee feces showing up in the backyard on various things. And that neighbor, again, 125 yards or so away, reached out to the beekeeper and said, hey, I think

your bees are pooping on my car. I giggle because when I first got hired at the University of Florida, the bee lab was about 2 miles or so away from where we are currently. So, about two or so miles away from the Department of Entomology and Nematology where you and I call home. So, I would have my office here, and then I'd go out there to the bees. Well, the Florida State Beekeepers Association and others lobbied and raised money to build a new bee lab that opened in 2018. So, we now have a lab on campus, our offices are on campus, etc.

But it also means that we brought the bees on campus so that we'd have them available. And where there are bees, there are bee feces. And colleagues here at the department shortly after that mentioned to me with some regularity at the time, you know, Jamie, there's all of these feces showing up on my car. I kind of giggled and said, well, you can't prove it's my bees that are pooping on your car. In reality, it probably is my bees pooping on your car.

Amy

Oh my gosh.

Jamie

But the question, then, is how far away will they do this? Well, I was able to find some research to show because, of course, there are people who study bee poop.

Amy

Yep, of course.

Jamie

I was able to find research on the distance that bees will defecate when they leave the hive. But really, the project that I was able to find most readily was one associated with winter cleansing flights where there's snow on the ground and it's cold outside. What they were showing is that the maximum fecal depositions were showing up about 23 meters away from the hive. And you could, you'd be tempted to say, well, that's the maximum way they'll poop. They'll just come out of the hive and poop. They don't go far out and poop. But, keep in mind, this was winter. There was snow on the ground. It was cold. The bees probably didn't want to be out long. But here we are getting, here in our lab kind of as a case study, we are getting feces on people's cars, you know, 100 yards or 100 meters or more from it. So, I do think, going back to this UK beekeeper, I do think that car, though far away, is within the range of fecal deposition.

But, I also want to point out a couple of other things that can contribute to this. First of all, there could be a feral or wild colony nesting very near this individual. 125 meters or yards, that's pretty far away. Usually, by that point, even though it's possible, usually by that point, the bee would have defecated upon leaving the nest. So, you know, it's equally possible that there's a bee nest in a tree nearby or in a house nearby or in a stone wall or something where bees from that are

defecating on this individual's car. Especially if it's in the volume that this person is talking about, because I can expect to see some fecal deposits that far away, but not necessarily the volume that the neighbors alluding to. Another thing, too, is when bees are out foraging, you know, they can build up the need to defecate, and maybe they're not running straight out of the hive and defecating straight on the cars on the way. But maybe they are. So, I can't rule it out, but I recommended this individual maybe canvass the area to see if there's any other bee colonies nesting much closer to that individual's house, and if there aren't, to try to figure out other ways to ensure good neighbor relations. I said you could always buy a cover for that person's car, but then if the other neighbors hear about it, you'll be buying covers for everybody's cars.

Amy

Oh, my goodness.

Jamie

You've got to be careful.

Amy

I'm just sitting here thinking like, do you realize that we've made a career in our lives, and we're sitting here? It's funny to listen to you scientifically explain how far a bee can poop.

Jamie

Yeah, the funny thing about it too is how much I have to look up to find these answers. It's not like these pooping manuscripts –

Amy

We just don't know.

Jamie

Are waiting to be discovered.

Amy

That's funny. Yep. I'm sure the neighbor is going – we're going to get a question in our next podcast episode of like, how do I clean bee poop off my car? Right? Oh my gosh, that's funny. Okay, well to our third question that we have today, this person is asking about a species, Apis dorsata, so the giant honeybee in Asia. And this person heard that these honey bees forage at night. First of all, is that true? And then second of all, you know, how do they communicate? Is it still the waggle dance? I mean, we talked about Apis mellifera looking at the angle and direction of the sun. But if Apis dorsata is foraging at night, how are they communicating? Are they using the moon? Are they using the sun or what's going on here?

Jamie

This is a really good, insightful question. This person knows quite a bit about their bees in order to know this. There are multiple species of Apis, and four of those species, again, depending on if you're a lumper or a splitter, are giant honey bees. That includes Apis dorsata, laboriosa, breviligula, and binghami. So, all four of these giant honey bees are pretty interesting. There are two dwarf honey bees, florea and andreniformis, and then all the cavity nesters, which includes mellifera, the bee wee keep. So, I'm going to start answering this question by talking briefly about andreniformis and florea, the dwarf honey bees. These bees, when they do their waggle dance, their straight run of the waggle dance, their waggle dance occurs on the top of the comb, not the face of the comb, so that when they are dancing for the food source, their straight run points in the direction of that food source. So, it would be tempting to say, well, maybe dorsata can get around this issue of waggle dancing and the sun by dancing on top of the comb rather than the face of the comb at night time. So, they can just point in the direction of the food source when they're doing their straight run and their figure 8. But that's not what they do.

So, the answer to your first question, do they forage at night time, is yes. On moonlit nights, Apis dorsata can use the light of the moon and other light sources to forage at night time. They do forage at night. It's pretty remarkable. Now, they don't dance on the top of the comb. I've already ruled that out. So, somehow the workers, when they find a forage resource, are coming back and through a dance, communicating to their sisters where the food resource is. So how do they do that? Well, one hypothesis is that they use the moon. They just simply dance to the angle of the the moon rather than the sun. But that was ruled out by Fred Dyer in a 1985 publication in the journal Animal Behavior. And when I was looking for information to answer this question, this is still the paper that everybody cites with regard to Apis dorsata dancing to communicate food resources at night time. He said, there's great reason to believe that they are not using the moon.

So, then what are they using? His hypothesis is that they continue to use the sun's azimuth. That is a complex term. Bees don't actually orient. It's a bit of a tricky explanation here, but bees, when they dance, don't actually orient with the sun. They Orient with the azimuth of the sun. And what does that mean? Imagine it's 8:00 in the morning and you go and stand outside, and you find the sun, right? The sun's not straight overhead. It's not midday, so it's 8:00 in the morning. The sun is at an angle. So, if you're looking at the sun, it's at an angle between you, the horizon and straight up. If you drew a line from the sun straight down to the horizon, that's the azimuth of the sun. So, essentially what bees are doing when they dance, they're not dancing towards the sun, they're dancing as if the sun had a straight line from it down to the horizon. And we know, and Fred Dyer proposed this in his 1985 paper, we know on cloudy days, bees still use the sun because they're able, with three eyes, the ocelli on the top of their head to see the polarized light that comes from the sun. So, Fred hypothesized that even when the sun quote goes down, its polarized light still goes up from where it went down. What does that mean? Imagine that you are sitting and watching the sunset, and even though the sun has gone just below the horizon,

you're able to see the sun's rays coming up. Well, the further that the sun goes down below the horizon, the lessening of those rays until it disappears altogether. But it's still emitting that polarized light that the bees can see even if we can't. So, even though the sun is down, there's polarized light coming up from where the sun went down. Fred suggested that until midnight, or until the sun would be exactly on the opposite side of the world, whatever time that is, bees would be using that angle. And then when the sun crosses that angle, they would start using the polarized light that is coming up on the other side of the world.

So, what does that mean? Imagine sitting and watching a sunrise where you start to get sunlight before the sun even cracks the horizon. Where the sun comes up would be the equivalent to its azimuth in this context, and bees would be using that. So, he argues that bees still use the sun even though it's not up, and I was not able to find any other papers that refuted that. I did read a few papers on dorsata orientation, and they all cited this paper.

If you're listening out there and you know of other papers that have shed light on this or given a more plausible or more recent hypothesis, please let me know. But, Amy, as far as I know, that's the current answer, that they are able to see polarized light from the sun even when it goes down, and they use that as if the sun were actually up.

Amy

That is absolutely insane to think about.

Jamie

If it's true, it's crazy, right?

Amy

That is, yes, if it's true, that is so crazy to think about. Oh my gosh.

Jamie

There are 12 species of Apis. They all do ridiculous stuff.

Amy

Yeah. I know.

Even florea and andreniformis that are dancing toward the sun or the sun's azimuth, that's pretty crazy. And then when the dance moved to the face of the comb, like it did for the giant bees and the cavity nesters and it became symbolic rather than pointing in the direction, it's mind blowing. It truly is mind blowing and it's crazy. The dorsata, like the other Apis species, has its own fantastic mysteries waiting to be unraveled.

Amy

So cool. Well, the other thing too, what I learned when we went to Thailand with Apis dorsata is the fruit durian, right? That's what they're pollinating at night. And I didn't realize that durian flowered at night and that was primarily pollinated by Apis dorsata. That was pretty cool.

Jamie

It's remarkable that dorsata can do this at night time because you don't see evidence of this as much, especially in cavity nesters like mellifera. And when you think of nighttime flowers, you know, I'm an entomologist, so I've had to think about this and talk about it before, you think nighttime blooming flowers, the things that you think that pollinate them are almost always moths. Moths love night flowers. Bats love night flowers, things like that. And here you've got, in this area where dorsata is distributed, you've got a bee with the ability to pollinate stuff at night time. It's pretty crazy.

Amy

So crazy. All right, well, if you all have questions, you know where to find us. Send us an e-mail, send us a message on social media. We love the variety of questions that you all ask us. You haven't gotten stumped in a while, Jamie, so maybe we need to stump you.

Jamie

Well, I cheat, right?

Amy

Yeah, that's true.

Jamie

I only answer the questions that I know I can answer. I'm just kidding. I do look up the answers. But that's what I do anyway, right? No one can know everything. So, I do spend a lot of time looking up answers to these questions. Keep those questions coming. We do love it.

Amy

Hey everyone, thanks for listening today. We would like to give an extra special thank you to our podcast coordinator, Jeffrey Carmichael. Without his hard work, Two Bees in a Podcast would not be possible.

Jamie

Visit the UF/IFAS Honey Bee Research and Extension Laboratory's website, UFhoneybee.com, for additional information and resources for today's episode. Email any questions that you want answered on air to honeybee@ifas.ufl.edu. You can also submit questions to us on X, Instagram,

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