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SPEAKERS

Jamie, Guest, Guest 2, Stump The Chump, Cameron, Honey Bee, Unknown, Guest 3, Amy

Jamie 00:05

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, and welcome to another great episode of Two Bees in a Podcast. I am your host Jamie Ellis, accompanied by co-host Amy Vu. Hey, Amy.

Amy 00:52

Hi. Hi. Hi, everyone.

Jamie 00:53

Amy, you been having a good year so far?

Amy 00:55

I'm having a great year, yes, thank you.

Jamie 00:57

What's made it great?

Amy 01:00

2020, my vision is getting better.

Jamie 01:01

I've heard that joke quite a few times. I'm sorry that our listeners had to hear that. All right, today's podcast is a fantastic lineup. We are going to be interviewing key members of the International Bee Research Association. The International Bee Research Association has a long history of helping beekeepers and bee scientists around the world. I am privileged, myself, to be on the council of the International Bee Research Association. So I feel that it has a lot to offer to beekeepers. And as a scientist, I've benefited tremendously, personally, from being involved with IBRA, both being on the council and publishing in their journals, etc. So today's lineup of segments. In the first segment, we're going to be interviewing Professor William Kirk, who has a long knowledge of the history of the International Bee Research Association. We will follow that by two segments where we will interview editors of journals published by the International Bee Research Association. One of those editors is Dr. Robert Brodschneider, and the second of those editors is Dr. Maria Bouga. We're going to be talking with them about publications, about what IBRA has to offer to beekeepers, etc. But before we do all of that, it is my distinct pleasure to welcome, from the UK, Professor William Kirk, who is a professor of Applied Entomology in the School of Life Sciences at Keele University in the UK, which is somewhere in the center of England. Professor Kirk is an IBRA council member, similar to what we would call a trustee, and he has been that since 1992. Amy, help me welcome Professor William Kirk.

Amy 02:42

Welcome.

Guest 02:44

Hello, pleasure to be here.

Jamie 02:45

Thanks, William, I really appreciate you joining us. You're one of the first interviewees that we've had overseas. So thank you for joining us on Two Bees in a Podcast. So what we want to do is we really want to get to the heart of the International Bee Research Association. We want to be able to tell beekeepers what it is, how it started, where it came from, etc, and what it offers the beekeeper. So, Professor Kirk, I'm going to start off with that question. What is the International Bee Research Association?

Guest 03:16

Okay, well, it's an organization with members. What it does now is its mission is to promote the value of bees by providing information on bees, science, and beekeeping worldwide. So if you're a beekeeper or a bee scientist, we try to help you. It goes back quite a long way. When it started back in the 1940s, in fact, it was formally set off as the Bee Research Association in 1949. And its mission then was a little bit different because it set out that its mission was to advance the science of apidology, which is a rather general mission. But really, if you think back then, there was no Internet, there was very little communication between scientists. So Dr. Eva Crane, who was then the Chair of the organization and founder of it, travelled around the world, visiting beekeepers and bee scientists, and discovered that they had little idea of, sometimes, what was going on in other countries. So she wanted to facilitate that. Of course, nowadays, that's more or less been covered by the Internet. People can very quickly find out

what's going on, and there are sort of services which provide abstracts of journals and so on, so people can keep up much more easily. So what IBRA has done has changed over the years. Instead of initially being an information service for the scientists, it's become an organization that publishes journals, publishes books, and one particular thing that it does, it has tried to provide the link between bees, science, and beekeeping. So often, when beekeepers talk to each other, they pick up bits of information or read about something on the Internet that's not very reliable. IBRA has tried to provide the scientific basis behind the information that beekeepers need. So for example, if they subscribe to become a member and join Bee World, they know that the information has been rigorously checked. So as you see, the mission has changed over time, but we're still about providing information to bee scientists and beekeepers.

Amy 05:32

And William, did you say apidology?

Jamie 05:34

Yeah, it's funny. That's a word that we don't use much here, but I often hear it. I love that word. Could you explain what apidology is?

Guest 05:41

I think strictly, when the founding document was prepared, they invented the word, and they called it apiology without even having the D in it. Apiology from the Latin Apis for a bee, so it was the study of bees. There wasn't a word for it in those days so they invented apiology. And since then, I think people have preferred the term apidology. So in France, there's a journal, apidologie, which we pronounce apidology, which is the study of bees. And I think you can take it either literally as a study of honey bees, or perhaps more broadly, as the study of all bees. And perhaps I should say that IBRA is not about just honey bees, but about all bees.

Jamie 06:25

So I want to get back a little bit to the history, William, because what you're talking about, it's really profound. We could have another podcast just about Dr. Eva Crane, right? She tremendously helped the bee world. I love this idea. She was kind of a for her time, right? Recognizing a need for scientists to be able to communicate with one another, but as well as beekeepers, because essentially, that's what one of your two big products, and again, we're going to be interviewing Dr. Robert Brodschneider, and Dr. Maria Bouga later, but two of your big products from IBRA are, respectively, the Journal of Agricultural Research, and Bee World. JAR exists for scientists to communicate with one another and Bee World exists for scientists to communicate with beekeepers. So in many ways, Eva Crane had this vision for the International Bee Research Association that was fulfilled. I mean, IBRA is doing that. It's bringing scientists together, and it's communicating information to beekeepers.

Guest 07:17

She was certainly ahead of her time. In fact, she did a PhD in nuclear physics back at a time when--

Jamie 07:24

Well, who hasn't, William?

Guest 07:25

Not many people do that now. But back then, there weren't many women that did PhDs in nuclear physics. But then, she spent, actually, most of her life actually studying bees and reviewing and writing books and, and helping be science and Beekeepers, traveling around the world visiting people and sort of transmitting information. She saw the need at the time. And of course, what IBRA has tried to do over time, is not just do whatever she started doing 70 years ago, but to actually see where the need has moved to. So I think now, most beekeepers can find information, they might need some guidance on what's scientifically accurate, but there's a surplus of information. I think possibly where there's perhaps more of a need now is in developing countries where people are perhaps struggling. They have the internet, but relevant information to help develop beekeeping organizations there is much needed.

Jamie 08:25

Sure. I'm going to bring up something that's not done necessarily anymore. But one of my biggest initial introductions to the International Bee Research Association is years ago, I was writing a manuscript right at the cusp of the time when the Internet wasn't really super available and super searchable. And I remember needing to look up historic records for disease and pest pressures around the world. I used one of, IBRA's, at the time, flagship efforts, which was Apicultural Abstracts, where were you guys had editors at IBRA who searched all the refereed manuscripts related to honey bees and beekeeping and published their abstracts in one place so that the information was very accessible. And as you shared, that's largely been replaced by the Internet today. But I think, initially, it was such a valuable resource. That's an example of how, throughout the ages, you've kind of filled the gap and addressed the needs that were there at the time.

Guest 09:18

Yeah, and it started off, really, as the Bee World Journal with selected abstracts that beekeepers or bee scientists might find useful. Then it became its own specialized journal, Apicultural Abstracts. But over time, as information became more available, those sort of things became subsumed into larger sets of abstracts, Web of Science, and so on. And I think we're almost coming around full circle to a time when scientifically interested beekeepers who now don't have access to such services, it's only the professional bee scientists who do, we'd actually like some of those abstracts again selected of things that are developing in the field that might be relevant to beekeepers.

Jamie 09:58

So, one of the things that I'm curious about is could you tell our listeners roughly how the International Bee Research Association is structured managerially? So who makes up the organization? Who moves it forward? Who runs it?

Guest 10:15

Okay, well, it's changed over the years. We used to have a premises with a headquarters and staff employed at the headquarters. But we have had to reduce our deficit and cut back somewhat. We are now more of a virtual organization. And in many ways, we've benefited because it means we can involve people anywhere in the world. So we used to have our council meetings at Cardiff, in Wales in the UK, and people had to travel there. And it meant our international members of our council, the international trustees, and there were quite a few of them, were left out of the running of the organization. But now that our meetings are virtual for the trustees, we can have people from all around the world joining in. So the structure where we have a president at the top, Professor Robert Picard, who's the Chair of the trustees, or the Council, as we call it, we have about, I think it's about 20 members of the council, all around the world, and they sort of lead on strategy and policy and what we should be doing. And then for day to day management, we have a small voluntary management team of three people, and they meet probably about every month, again, virtually. We also then have editors of our journals. So our current journals at the moment are, as you mentioned, Journal of Apicultural Research and Bee World, and we employ editors to edit those. And those journals used to be run separately by IBRA. And that was really a big struggle. The way journal publishing has gone, it's very difficult to run your own society journal because you don't get access to universities and libraries in the same kind of way. Most journals now are part of large packages. So we moved in, as it were, with Taylor and Francis, I think in about 2016. And that means that our journals are now available electronically in universities all around the world. So you can either join as an individual and get the journals, or if you're the scientist in a big Institute, you can probably get online access as through your university.

Amy 12:25

So, something that we kind of spoke about in the last segment was about extension and research and how funding is really important as far as making sure that we're able to conduct research, instruction and extension here. So, as far as the funding goes, it sounds like you have a huge team, and there are so many people that are part of this. Are a lot of these people volunteers? How is IBRA funded?

Guest 12:49

Yes, well, that has been an ongoing problem. When IBRA started with Dr. Eva Crane, she was quite wealthy. And she provided her house and then provided a building for IBRA and a bank. In about the 70s or 80s, we could get development money to support IBRA in the interest of beekeeping, but that faded in the 1980s. We entered a phase when we were really quite struggling. So we've had to lose staff over time, and now, nearly everyone's volunteer. And we have only just managed to balance our books. But there are lots and lots of things IBRA could do. You've saw, our mission is really quite open-ended. There are lots of things we could do to provide information, but we have to limit it to what we can achieve. We have a certain amount of assets, but we don't want to fritter them away, left from sales of the buildings that we've been in. And they're a useful buffer. But I know people often say, "Well, why can't we do this for scientists? Why can't we hold big conferences?" and so on. And the reason is, generally that they cost a lot of money. We don't have funds to spend on useful things, we have to generate the income. And the income at the moment comes from Taylor and Francis for supplying the journal and it comes from membership subscriptions.

Amy 14:20

So would you say that that's how maybe individuals can kind of support IBRA, either through finances or, how else can people support IBRA?

Guest 14:29

I think two ways. One is to join, and they could just go to our website@ibra.org.uk and you can join as a member at different levels. You can be a basic member where you receive Bee World or you can pay a slightly higher level and you get Bee World and Journal of Apicultural Research. So joining, well, subscribing is one way. And another possibility is to volunteer. Offer, if there's some way you can help. We need people with financial expertise, legal expertise, charity expertise, marketing expertise, lots of ways in which a small international organization could be helped.

Jamie 15:14

So, William, if you had to summarize what IBRA does specifically for beekeepers, can you give us somewhere around two or three, hey, beekeepers, this is why IBRA is a value to you, this is what we do for you.

Guest 15:29

Well, we provide scientifically rigorous information, which, what we say is that it's the bridge between bee science and beekeepers. So subscribing to Bee World, you will find out things that are going on in bee science. If you subscribe to Journal of Apicultural Research, if you're a scientifically interested beekeeper, perhaps with a bit of a science background, that's one way of finding out what the developments are in the field. We also have quite a catalogue of books that we've published over the years, which could be of use to beekeepers, and perhaps, more widely, to people who are just interested in bees. So I could mention, for example, we have books on bee anatomy, we have a color guide to the pollen loads of the honey bee so if people want to identify from the color of pollen loads where bees are collecting their pollen, there are specialist books that beekeepers could buy. Members get a discount on that. They can subscribe, get Bee World and JRR, Journal of Apicultural Research. And when you join as a member, you don't just get the current issue, you get online access to all the back issues. And that's something as a scientist, I suppose, but also as a beekeeper, find interesting. If you have a particular topic that you're concerned about, I don't know, you've got some problem with your drones or something, or some problem with insecticide worry that's concerning you, you can search and find if there's a back issue, a back article that might provide information or review on the subject that you can get access to.

Jamie 17:06

So I like this idea. It provides lots of information for beekeepers and bee scientists. And one thing, William, I'm really glad that you mentioned was the book publishing that IBRA does. Some of my absolute best reference manuals for bees and/or beekeeping are IBRA publications. Bee anatomy, bee physiology books, bee plant books. Here at the University of Florida, we have in our library, a lot of IBRA book publications that we use routinely. And these things aren't just useful for us as bee

scientists. They would make great gifts and great information or resources for beekeepers. I'm really glad you mentioned the bookstore. That's great.

Guest 17:41

Perhaps I could just mention that IBRA is a charity. It makes it sound as if IBRA was a publisher because we produce journals and books. But we produce the books that probably the big publishers wouldn't produce because they wouldn't be commercial. So we're not making a profit. But we're trying to find out the things that bee scientists and beekeepers need and try to publish those.

Jamie 18:07

So, William, you mentioned, the Journal of Apicultural Research and Bee World, you mentioned the bookstore that you guys have, these informational resources that you offer, is there anything else you want to tell us about what IBRA might offer to beekeepers?

Guest 18:18

Yes, perhaps I could mention an organization called COLOSS, which is a sort of shortened form of colony losses. It's not part of IBRA. It was set up some years ago with European funding, but it's now become a worldwide organization of bee scientists doing research on bees. And they've produced a series of papers, which we published in Journal of Apicultural Research, as part of what is being called Beebook, sort of as one word, Beebook. And it's a kind of practical manual of standardized methods for studying honey bees. So they cover topics like pollen, venom, honey, and so on. And I think we're now working on Beebook three. These are coming out as chapters. They're open access through Journal of Apicultural Research, and we're accumulating them steadily. And when we complete a Beebook volume, then IBRA is publishing them as hard copy and the hard copy is available. So you can put it on your bookshelf, browse it, but they're also open access so you can see them online. So that's just a way in which IBRA, as a charity, has tried to support information about bees, beekeeping, and bee science. So William, I think that's a great example. As you well know, I'm intimately familiar with the Beebook, being one of the three co-editors of that. IBRA really did help us get those out. I'll also echo the statement you said, all of the chapters of the two volumes that have been published to date are available open access. So beekeepers can go to them now. And yes, some of them are very science-heavy, but there are a couple of immediate practical applications for beekeepers. For example, there's one on how to rear queens, there is one on instrumental insemination, things that are techniques that beekeepers can use. So I think that's a great service offered by IBRA, thanks for bringing that up. And they're intended to be practical, so they're practical manuals with standardized methods such that you can use and know that they've been validated.

Jamie 20:18

Well, Professor William Kirk, I really appreciate all the information that you provided on the International Bee Research Association. I want to remind our listeners that we are talking with Professor William Kirk, Professor of Applied Entomology, School of Life Sciences from Keele University in the UK. He's been on the IBRA Council since 1992. Professor Kirk, thank you so much for joining us and sharing

with us the background of IBRA, what it provides and does for beekeepers. I really appreciate you joining us on Two Bees in a Podcast.

Guest 20:45

Thank you very much. My pleasure.

Amy 20:46

Don't forget, we'll probably have additional resources listed on our website. So you all can go and visit the website so you can see what IBRA has to offer.

Jamie 20:46

Absolutely. In our next two segments, we'll actually be interviewing two individuals who edit the journals that we've been talking about so much in this first segment. Dr. Robert Brodschneider, who is the senior editor for Bee World, and Dr. Maria Bouga, who is the Senior Editor for Journal of Apicultural Research.

Honey Bee 21:22

Have questions or comments? Don't forget to like and follow us on Facebook, Instagram, and Twitter @UFHoneyBeeLab.

Jamie 21:33

Welcome back. So we're joined now by Dr. Robert Brodschneider, who is a researcher at the University of Graz in Austria. He specifically works in the Institute of Biology there. But for purposes of this podcast, we're interviewing him because he is also the editor of Bee World, the other major periodical produced by the International Bee Research Association. Robert, thank you for joining us from Austria. How are you doing?

Guest 2 22:01

Fine, thanks.

Jamie 22:02

Well, good. Let me just jump right in. Could you tell us a little bit about Bee World, its history and where you fit in?

Guest 2 22:10

Bee World is a journal published by the International Bee Research Association. And it's now 101 years old. It was founded in 1918 by an Egyptian living in England. So in 2019, we celebrated 100 years of Bee World. You can find an open-access article about the history of Bee World, and its current form, it appears in four issues a year with 32 pages. And it contains articles, reviews, plans for bee sections, and these are peer-reviewed articles that we publish.

Jamie 22:51

I think you told me one time, Robert, you told me like a number of manuscripts that's been published or articles that have been published in Bee World over the years. What was that number? It was something crazy.

Guest 2 23:01

Yeah, all the articles that ever been published in Bee World are available online, on the website of Taylor and Francis. And a rough estimate says it's about 6500 articles.

Amy 23:13

That's so many articles.

Jamie 23:16

I'm putting you on the spot with this question. But do you have any guesses as to the number of times those articles have been cited in history? We're talking about thousands upon thousands of times?

Guest 2 23:28

Yes, I have very good record on that. That's also something that I dealt with in the article on 100 years of Bee World. Just to give you one impression, there is one methodological article from [inaudible] on how to analyze the pollen grains in honey, which is a highly cited article. Don't ask me for the absolute number. I calculated that from the 1970s, in the 1970s this article was published, until today, it is cited on average every three weeks.

Amy 24:06

Still? That's crazy.

Guest 2 24:08

Hundreds and hundreds, thousands of citations. Don't ask me for a specific number.

Jamie 24:14

Well, I think one of the neat things, Robert, though, is that speaks volumes of what this particular journal offers to beekeepers, but also, bee scientists. Right? You mentioned very briefly that you've got open access articles, but more importantly, you noted that these are peer-reviewed articles, which means that when you receive those articles, you send them out for review. Can you tell us a little bit about that process for Bee World?

Guest 2 24:39

Yeah, best case, the articles that I receive are written, let's say, in a little bit more popular way, shorter than usual scientific articles. Still, the topic must be original. So we don't take any articles that have been published before. But if you are, for example, an advanced beekeeper and you have a strong opinion about bee breeding, or if you are a scientist and you think, "Wow, this is related to beekeeping. This could be of interest for Bee World," then you're playing the same game as for scientific articles. That's also important because we are playing, also, the game of counting references as you just asked.

We are asking people to provide references if they're writing a review article. We are asking offers to provide us the background if they present new scientific findings, for example. So we are following the rules. And this is one of the major differences that we have to any beekeeping journal. The second difference, I would say, is we are Bee World, so we can't deal with, let's say, this month, you need to do that in Florida or in England, because it should be Bee World and it's beekeeping around the world.

Jamie 25:57

Yeah, so I think one of the things that you said that's really most important to me, in that regard, is that it's advanced topics, right? These are things that are vetted, they're vetted by you as the editor, they're vetted by associate editors, they're also vetted by colleagues who are peer-reviewing these. One thing that you said earlier that I want to make sure our listeners picked up on, you mentioned that there is a 100th anniversary article that's open access, it's available to read online at the bee world website. We'll make sure and link to that in our show notes so you listeners can read that and get a little bit more detailed history of Bee World. I also liked the fact that you note that it's more of a popular journal than something maybe like IBRA's sister publication, the Journal of Apicultural Research. This means, for our listeners, that the articles are written in a way to be applicable and accessible to readers from around the world, right? I mean, I recently saw articles in there about different beekeeping styles in Africa, as it were, and it's very relevant to beekeepers who are there. I've seen articles from Eastern Europe and from South America, etc. So these are popular articles, meaning that they're accessible and usable by beekeepers, in addition to bee scientists.

Guest 2 27:11

One of the nicest things that I think we can offer with Bee World is I call the beekeeping in article. For example, if you plan to go, whenever you want to go on a holiday, search the Bee World archive, and you will see that there will be an article on, let's say, beekeeping in Cambodia, let's say honey hunting in Asia, wherever you want to go, I'm sure we have an article about the beekeeping and honey bee or general bees situation in that country.

Amy 27:45

Yeah, so how do you actually select these articles that you're putting in?

Guest 2 27:50

Well, we follow the rules of any peer-reviewed journals. So everyone is free to submit, then the articles will be peer-reviewed. That means I send it out to one or two experts in the field that say, "Well, this could be of interest or this is not such good quality." And then those articles that fulfill the requirements of our publication standards, those are the articles that are picked for printing.

Jamie 28:23

Do you have a rough estimate about the rejection rate? I mean, do you publish about half the articles you receive or three-quarters, or more or less?

Guest 2 28:30

I would say the rejection rate is not -- Okay, it's about 30% percent. Acceptance would be 70s. It's about 30% rejections.

Jamie 28:43

Yeah, you're more positive. So you're using the acceptance rate, which is 70%. I don't know why I was saying the rejection rate. I guess I was being quite negative. Sorry about that, Robert. So what do you think, then, that this journal has to offer for beekeepers? Remember, Two Bees in a Podcast is listened to by -- we've had thousands of beekeepers listen to it, which is kind of surprising to us.

Amy 29:04

And non-beekeepers.

Jamie 29:05

Yeah. And non-beekeepers. We've had people from over 35 countries listening to this fledgling podcast. So what does Bee World have to offer beekeepers from around the world who are going to be listening to this particular episode?

Guest 2 29:19

I think it could be their start to get into reading scientific articles. For example, if you find an article, you might follow the five or six or seven most important references that are given in there and you can really elaborate on that certain topic that you're interested in. So it's really a start to get used to research articles.

Amy 29:45

So I guess that takes me to someone who's just kind of new into beekeeping, and new into reading some of this literature, where would they even start? It seems like there's so much.

Jamie 29:54

Yeah, how do they find you, Robert?

Guest 2 29:57

Just type in BeeWorld.org or go to IBRA's website, and then you find all the links.

Amy 30:03

Then you just play around.

Guest 2 30:04

Bee World should be easy to find. It's currently hosted because it's published by Taylor and Francis. So it should be really easy to find.

Jamie 30:13

I like lots of things about Bee World. Amy, you were asking specifically, like, where do you get started? If you just pick up one of the issues of Bee World, you're going to find an article that's relevant to you. And I think that's important. And the other thing too, another thing I like about Bee World, it's the simple things. For example, I really appreciate the standard that you've set, Robert, for the quality of the images and figures. There's really good photographs so people aren't having to use their imagination about what a top bar hive in Kenya hanging from a tree looks like. You actually show that in great detail. So it's an aesthetically pleasing journal, in addition to a journal that's full of lots of information for beekeepers.

Guest 2 30:57

That's also one of the reasons why it's still sent out as a printed version, I think. We spoke about how all the articles are available online. For IBRA members, this is included, otherwise, you can purchase single articles. But I think if you're really interested, you should go for an IBRA membership, then you get four issues per year printed, and you're trying to make an appealing product.

Jamie 31:22

Yep, absolutely. So what do you think the Bee World has to offer bee science and beekeeping moving forward? We've talked a lot about the history of Bee World and its contribution to beekeeping and bee science thus far, but what do you think it's going to do for beekeeping and bee science in the next 50 to 100 years? I know that's hard to say so far out.

Guest 2 31:44

I think that the name or the word "world" in the title of the publication is still important. So most of our research is coming from North America, Europe, or China, for example. But we still can discover so many things in other parts of Asia, for example, than China. In Africa, that's why we had this special issue of beekeeping and bee research in Africa, and also South America. And I think, when you speak about science now, that I would like to engage more with the students, let's say master's students, or even bachelor students that have nice findings that will not maybe make up for full publication in Journal of Apicultural Research, or in another scientific journal, that they present it in a nice way as in a poster or as a presentation at the conference. But send us a two-pager with the most important findings. And then you can reach the scientific community also. It's citable and you have something for your CV.

Jamie 31:44

Yeah, I mean, that's a good appeal to the fledgling in the budding researchers out there around the world. And I love your emphasis on the word "world." It truly is an international publication that introduces all of its readers to beekeeping and, to some degree, bee science absolutely everywhere. It's been such a great resource over the years. So Robert, I really appreciate you joining us today on Two Bees in a Podcast to talk to us about Bee World, its impact, and all the things that it's doing for beekeepers.

Guest 2 33:23

Thank you. It was my pleasure to speak to you.

Jamie 33:26

Absolutely. So listeners, that was Dr. Robert Brodschneider, who's a researcher at the University of Graz in Austria. He works specifically for the Institute of Biology, and he is here today as the editor of Bee World, one of the International Bee Research Association's two key publications. Thanks again, Robert.

Guest 2 33:42

Thank you.

Honey Bee 33:51

For additional resources, visit the podcast page on our website Ufhoneybee.com

Jamie 34:01

Hello, and welcome back to Two Bees in a Podcast. We are continuing our discussion of the International Bee Research Association. And we're going to do that by looking at one of its key publications. That publication is the Journal of Apicultural Research. Here to discuss that publication with us is Dr. Maria Bouga. She is from the Agriculture University of Athens in Greece. She's joining us from Greece. In fact, she works in the Laboratory Agriculture of Zoology and Entomology. Her specialty is in the genetics of honey bees, Varroa, and some other insects and mites, but she emphasized that her main focus is on honey bees and Varroa. And in addition to all of that, she is also the Senior Editor for the Journal of Agricultural Research. Maria, thank you for joining us on Two Bees in a Podcast.

Guest 3 34:48

Thank you very much for the invitation. I'm very happy to join you.

Jamie 34:52

Perfect. Well, thank you. I really appreciate it. So let's just start right at the beginning. We've already told our listeners that one of IBRA's key publications is the Journal of Apicultural Research. So could you tell us a little bit about the Journal of Apicultural Research, what it does, what it publishes, and how you manage it?

Guest 3 35:12

Yes. The Journal of Apiculture Research is among the most famous scientific journals dedicated to the research on bees. Journal of Apicultural Research published its original research articles, theoretical papers, notes and comments, and reviews concerning all the scientific aspects of the biology, ecology, natural history, conservation of all types of bees. It is a very old journal. The first issue was published in 1962 under the editorship of Dr. Eva Crane. She also created IBRA, the International Bee Research Association. We are now in the 59th volume after so many years, yes. And next year, we're going to celebrate sixty years of the journal. We have five issues per year. One issue is a special issue. The upcoming issue of this year is a special issue of the COLOSS Beebook. And there are more than 2000

papers published. Now, we have taken over the editorship with Dr. Melanie Parejo from Bilbao, Spain, and we give great effort for a quick review process and for high quality of the papers that are published.

Jamie 36:55

So Maria, let me let me ask you a little bit about that. One of the things that our listeners will want to know is, when they think about the journals, they think about the popular journals, like in our case, the American Bee Journal or Bee Culture, or in the UK, Bee Craft. The Journal of Apicultural Research is different because it publishes research papers. As scientists, we conduct studies on honey bees, and those studies really don't exist unless they're published in a refereed journal. Journal of Apicultural Research is one of those journals. So we can submit our manuscripts to the Journal of Apicultural Research and what happens? Let's say I do a research project on Varroa and I submit it to the Journal of Apicultural Research. What happens after me submitting that manuscript to you?

Guest 3 37:44

First of all, you already mentioned. It is a scientific journal. The current impact factor is 1.752. The procedure is like this: the scientist can submit the manuscript via a platform, the Editorial Manager system, because the publisher of our journal is Taylor and Francis. And then the review process starts. That means that we invite and listen to reviewers in order to have a trusted procedure. And after this, there is the decision of the editors regarding acceptance and revision of the paper. And after all these, the final, at the end, that paper is accepted or rejected. In case that it is accepted, it is first published online, and then it is assigned to an issue of the journal. And we try these process to be as quick as possible, because the scientists are interesting to publish.

Jamie 38:59

Yeah, I think that's perfect. So let me explain to the listener, so listeners out there, if I were to publish an article in a popular magazine, and not popular because a lot of people read it, but popular means that it's available to the masses, written in a way that beekeepers can access that information, magazines, such as the American Bee Journal, Bee Culture, etc, there's really no review of that manuscript. The editor will review it, and maybe suggest some grammatical changes and a few comments here and there, but it's not a peer-reviewed journal. Journal of Apicultural Research, on the other hand, when I submit my research paper to Maria, she receives that and says, "Okay, Jamie, you wrote an article on Varroa. I'm going to find two of the world experts on the topic about what you wrote. I'm going to send that article to them, and they're going to read it to see if the science is valid." And if the science is valid, they'll suggest to Maria or one of Maria's associate editors that the paper should be published. If they have problems with the science or problems with the statistical methods or problems with our interpretation of the data, as reviewers often do, they will suggest changes to that manuscript that we then have to make as we negotiate that article through the review process. So a peer-reviewed article means that this article has been reviewed by our research colleagues around the world and found it to be acceptable for publication. And Maria, that's really what the Journal of Apicultural Research does. It's a clearinghouse for quality research on honey bees and beekeeping that undergoes a peer review and that you guys publish. So in many ways, you guys are providing a great service to beekeepers because you're able to publish the latest research on beekeeping, beekeeping

management topics, honey bee health, honey bee subspeciation, just all kinds of topics. So let me ask you, what types of manuscripts are published in the Journal of Apicultural Research? What topics, what broad categories of topics do you publish?

Guest 3 41:06

Yes, actually, almost everything is around all types of bee. We have manuscripts on hive products, wax, pollen, for example, or research articles on genetics and conservation of honey bees and of different kinds of bees, toxicology regarding the effects of some factors, like pesticides, that may affect the economy, health, pathology, and parasitology regarding the diseases and pathogens of honey bees. That is very, very important, especially for beekeepers because the main output is new methods that can be applied in beekeeping, in order to facilitate beekeepers to maintain their hives in a good [inaudible]. History of honey bees, ecology, all topics.

Amy 42:16

Dr. Bouga, it sounds like there's a lot of different topics and focuses that the journal has. And it's really amazing, because I mean, I'm not quite sure if a lot of beekeepers have access to this or whether they know that it's even out there. So part of this podcast is sharing the access to the Journal of Apiculture. So I guess my question is, how do beekeepers get access to these publications? It sounds like there's a lot of information that's out there that people may be missing when they're doing their research online and looking for information that they could find useful.

Guest 3 42:51

First of all, the articles are open access. That means that they also have paid for this to the publisher, Taylor and Francis. And on IBRA's website, there is a link directly to all the papers that are published in Journal of Apicultural Research, and they are open access. And that means a lot of papers are free to everybody. On the other hand, for the other articles that are not open access, there is an option for membership to IBRA that is 150 pounds per year. There is access on a Journal of Apicultural Research and Bee World as well.

Jamie 43:42

So beekeepers can read the open access articles or they can subscribe to the Journal of Apicultural Research. They'll also get Bee World, we'll talk with Robert Brodschneider about Bee World. But beekeepers can get access to it. It's online, so I think that's useful. And in this case, it's peer-reviewed information that they can see where the cutting edge of science is at the moment.

Amy 44:05

So I guess, with some of the scientists that are out there, is there a mentorship program or how does IBRA promote younger researchers and people that are up and rising in the focus of apiculture?

Guest 3 44:19

Yes, IBRA offers works to their best student poster presentation or presentation in several conferences like Bees of COLOSS conference. COLOSS Honey Bee Research Association. And for example, as

well, in the upcoming European Conference of Apidology that is going to be on September, next September is very great, IBRA offers a membership for students best poster and presentation, subscription to Bee World and to JAR, respectively.

Jamie 45:04

Well, great, Maria I really appreciate it. Your work through the Journal of Apiculture Research is not just important for bee scientists, but it's also important for beekeepers around the world. So thank you so much for what you do for the beekeeping industry and for bee research in general by serving as the editor of the Journal of Apicultural Research.

Guest 3 45:25

Thank you so very much of what you are doing. We are all together. We support beekeepers.

Jamie 45:31

Absolutely. Ladies and gentlemen, that was Dr. Maria Bouga who's from the Agricultural University of Athens in Greece. She's joining us from Greece. She's from the Laboratory Agriculture of Zoology and Entomology. She has specialties in honey bees, Varroa, other insects, etc. But she is joining us because she is the senior editor of the Journal of Apicultural Research. Dr. Bouga, thank you so much for joining us on Two Bees in a Podcast.

Guest 3 45:55

Thank you so much for your kind invitation.

Jamie 45:58

Absolutely. So listeners, I just wanted to take just a moment to reiterate some of the things that Robert and Maria said about Bee World and the Journal of Apicultural Research, respectively. So anytime a scientist does a research project, that project doesn't really exist until it is published in a refereed manuscript. That's important to hear. A refereed manuscript simply means that colleagues around the world have reviewed the manuscript and found the science worthy and sound enough to be published. It doesn't mean it's perfect, it doesn't even mean it's right. It just means it's been scientifically vetted. That is what the Journal of Agricultural Research offers us. It offers us a venue to publish our research papers. It may be on things like honey bee ecology, or behavior, conservation, or toxicology. But it also includes a lot of bee management related research, especially disease and pest research. All of that type of thing gets published in the Journal of Apicultural Research. Bee World, also an IBRA publication, it serves as the bridge between science and beekeepers, and its job is to publish science that's very applicable to beekeepers, as well as what we call popular articles, which are articles that you might find in publications such as the American Bee Journal or Bee Culture, etc. where an authority is talking about a topic, kind of from a non-science perspective, but in a digestible format that's applicable to beekeepers. And that's what Bee World does. So, scientists like myself, or Cameron, who's here and joining us today, we might publish articles in Journal of Apicultural Research, and then we might write a digestible version of that, that we publish in Bee World or American Bee Journal, etc. So, IBRA, through those two journals, provides a wonderful service to beekeepers, because they provide the platform JAR

for science to be published and the platform Bee World for science to be digested and disseminated to the masses. So both are very important journals. So both Robert and Maria discussed how you can access articles. You can join the International Bee Research Association for a basic membership fee, which will get you Bee World publications that you can access online, or you can join IBRA, the international Bee Research Association for a slightly higher fee, which will also get you access to the Journal of Apicultural Research. Now, both Robert and Maria multiple times mentioned open access. So when scientists like myself publish an article in a journal, like the Journal of Apicultural Research, the journal has to cover its cost, and they do that through subscriptions. So in order to access those articles, you might have to subscribe to the journal. But an open access article is one where the author paid to have that article available, whether or not you have a subscription. So when an issue of the Journal of Apicultural Research or Bee World is published, if the author paid an open access charge for a particular article, you will have access to that article whether or not you subscribe to either of the two journals. And so the way you know, you can go to Bee World's tab or the Journal of Apicultural Research tab at the IBRA website, browse their issues and their articles and the ones that have open access by them are free to you to look at, read and use in your own beekeeping lives. Those that don't, you will have to pay a subscription to access or go to a library that might have a subscription to that where you can get access to that.

Cameron 49:45

It's also kind of important to know that as scientists, it costs us money to publish and it's not cheap. I mean, we're talking thousands of dollars for an open access journal. I mean, those are several thousand dollars to publish. And so, oftentimes, we'll try to write those costs into a grant that we acquire for the project. But, I mean, as Jamie mentioned, I mean, the science doesn't really exist until it's published. But it's something that actually comes with a little bit of a financial cost for the scientists as well.

Jamie 50:20

One of the things I'll add in conclusion, if you see an article that you really would love to have access to, and for which you don't want to pay the charges, every article has a contact author listed for that article. So if the article has 10 authors, one of them will be the contact author. If you identify that individual and email them, they almost certainly will send you a PDF of that article that you can read. So that's a wonderful way to get those articles as well. That's, to me, one of the great things that the International Bee Research Association does and being a member of benefits you is the dissemination of cutting-edge information about bees, bee research, and most importantly, bee management. So I think it's valuable to be a member of the International Bee Research Association, and I think they, historically, have provided a great service to beekeepers around the world.

Stump The Chump 51:26

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

Jamie 51:40

Are we live?

Unknown 51:42

Yeah, I mean, it's recording

Jamie 51:43

Live.

Amy 51:46

We are at that question and answer time. We might just go ahead and keep Jamie singing Mortal Kombat.

Jamie 51:54

That wasn't Mortal Kombat.

Amy 51:55

What was that?

Jamie 51:55

That was pump me up, I'm gonna go play a basketball game. For those of you who don't know what we're talking about, right before we came live, I was singing some of my old high school basketball hymns.

Amy 52:07

I think we might have recorded that.

Jamie 52:08

I hope not.

Amy 52:10

Okay, so we have three questions. Jamie, you want to answer them?

Jamie 52:13

Only one at a time, please.

Amy 52:15

Okay, we'll start with the first one. So I was at the ABF conference not too long ago, and they had this board that basically had everyone's questions on it. So there was a trade show. There were all these vendors. There were a ton of vendors talking about honey bee health and guts. There were different supplements that they were selling, whatever, to help with the honey bee gut. Well, everyone's question was, well --

Jamie 52:39

What's up with the gut?

Amy 52:39

Yeah. Why is this a thing and why do we care about the honey bee gut?

Jamie 52:43

Well, first of all, I want to know what ABF is. Is that like the Awesome Bee Federation?

Amy 52:47

Yep. Awesome BB.

Jamie 52:49

American Beekeeping Federation. Yeah, it's funny. I'm not surprised that gut biology was a topic of discussion at the 2020 American Beekeeping Federation conference. And that's because when I go to research meetings, I will routinely see scientist colleagues from around the world talking about midgut microbiota, probiotics and all that stuff. So what does it mean? Honey bees have a digestive tract. So, the food goes in the mouth, it travels through the esophagus into the crop, through the crop into the ventriculus, through the ventriculus into the ileum and then on to the rectum, and then so on. So the ventriculus is essentially the stomach / small intestines of the honey bee. And the ventriculus is this kind of sausage-shaped portion of the digestive tract, and that is where nutrients from food are taken up into the hemolymph. That's where it goes through the walls of ventriculus and into the hemolymph to transport it to the tissue that needs it. So that is also the site of various beneficial bacteria that live in honey bees. And humans have long known that we have beneficial bacteria that live in our gut to help us digest food better. In fact, there's even recent research that showed the bacteria flora that we have in our bodies are good for even for our mental health. Well, there's similar research happening in the honey bee world. We're just now understanding that these microbiota, these bacteria that are inhabiting the honey bee gut are important for honey bee health. So people are asking questions. What are those bacteria? How much of them are there? How important are they for digestion? How important are they for immune function in the bee? So the reason you're hearing about it is because people are starting to realize that these things are important and there may be a lot of things that affect them, those bacteria, that then have downstream impacts on bee health. So these companies that you're seeing, they're selling probiotics, for the bacteria. They're selling things that they hope will improve the health of the honey bee midgut, and then, of course, have overarching effects on bee health. There's not a lot of research on these probiotics at the moment. Some of them may be great. Some of them maybe not. There's just data lacking in general. But I feel that the way the research is exploding on this topic that we're going to know more and more and more about midgut health of bees, and consequently, see more and more and more probiotics come to the market. And I'm confident that there will be some, if not already, someday, that will improve bee health if we feed it to bees. And that's the whole premise of these probiotics.

Amy 55:27

Yeah, we'll probably have to ask the bees how their mental health is?

Jamie 55:30

Maybe so. It's funny, though, and I hate to chase this rabbit. But it's incredible. What scientists are discovering that midgut bacteria are doing for all kinds of things. So I would not be surprised at what we find that honey bee midgut bacteria contribute to bee health.

Amy 55:51

Sure. All right, so for our second question, it's about super sisters. So what are super sisters?

Jamie 55:59

A fantastic 1980s band from Germany.

Amy 56:02

Are they really?

Jamie 56:03

No, I totally made that up. Should have been.

Amy 56:06

I believed you.

Jamie 56:08

This is going to be an easy question to answer. So a queen bee, when she is born, when she's somewhere seven to 14 days old, she'll go out on her mating flight and mate with multiple males, somewhere in the neighborhood of 15 to 20. So when she produces offspring, let's just make the math easy, let's say she made it with 10 males. If she's producing offspring, and you take any two workers, there's only a one in 10 chance that they're fathered by the same drone. So that's no big deal to us. But when we want to, for research purposes, control the queens in our colonies, it's hard to do that if we're randomly grafting queens. Yes, they may all have the same mother if they come from the same colony, but they don't necessarily have the same father. So to reduce variability among our colonies, we can use a tool called producing super sisters. And so what we'll do is we'll take a queen, allow her to lay eggs, and we will graft one larva from that queen. So we've produced an adult queen who is a virgin. With that adult queen, we can instrumentally inseminate her with the semen from one drone. Okay, so one queen carrying one drone's semen. The daughters she then produces, we can graft and produce queens from. And since all of those queens have the same mother, and the same father, they are super sisters. So we then can use the super sisters to head each of our experimental colonies and reduce the genetic variability in the projects that we're conducting.

Amy 57:50

That's very interesting.

Jamie 57:51

It is a really cool tool. The next layer that's even a little bit more difficult is, yes, we've got these super sisters, same mother and same father, but how do we ensure that their offspring are all similar, because each one of these super sisters can then mate with their own drones. A lot of scientists will take semen from lots of drones, homogenize it, and parcel it out between each queen. So all the queens have the same mom and dad, and they're carrying semen from the same pool of drones. And so that's a pretty good way to homogenize the genetics in a set of colonies.

Amy 58:29

Yeah, that sounds pretty insane. We'll have to bring someone in to talk about some queen breeding sometime.

Jamie 58:33

I think that's a great idea.

Amy 58:35

Great. So just for the sake of time, we'll go on to the third question, but I have so many other questions about queens and super sisters. The third question we have is the difference between orientation flight, swarming and robbing. So if there's a beekeeper and they see all this bee activity out in front of the entrance of the hive, how do they know what's happening?

Jamie 58:54

Amy, I've never had that question asked of me before. I happen to think it's a brilliant question because it's something I've never considered. You said swarming, and robbing and orientation flight. So let's just start with swarming. Swarming is the attempt of the bees to make a new bee colony. So they're rushing from the colony. So in swarming, the activity at the colony entrance is a mass exodus from the colony, hundreds or thousands of bees are leaving the colony. It is directional away from the colony.

Amy 59:31

I've seen that before. And it's really intense, and it's really cool, but it really kind of --

Jamie 59:35

It kind of punches you in the gut because you're like, "I'm about to lose a colony." All right. So that's a steady, intense flight away from the hive. So robbing, on the other hand, is when bees are trying to get into that hive. Bees from another colony are trying to get into that hive to steal the resources from that hive. So there will usually be flight at the colony entrance, they'll usually be a lot of bees attacking one another. But even more than that, there are bees trying to get into other places around the hive, the crack between supers, where supers meet, up under the lid, around the feeder jar, on top of the hive, under the hive. I know that activity at colony entrance includes robbing when I see bees trying to get in everywhere around that hive, in addition to the colony entrance.

Amy 1:00:26

I didn't know that. Yeah, that's cool.

Jamie 1:00:27

Alright. So that's how I usually recognize robbing. The third one is orientation. So orientation flights are when bees are transitioning from young bees to older bees. So older bees spent a lot of time outside of high flying. Well, older bees know where their hive is because they've left it and come back to it multiple times. But those young bees that are transitioning to that older bee stage don't know where their hive is. So they will come out of their hive, hover around the entrance and land again. They'll come out of their hive and hover further around the entrance, and then land again. And they'll come out of the hive and go further from the entrance, and then land again. Essentially, what they're doing is they're trying to place their hive in context with surrounding landmarks. And they're doing this at an increasing distance. And when trying to figure out if I'm this close to the hive, what's here? If I'm this close, you know, a little bit further back still, what's here? If I'm further back still... So it's almost like they're trying to get comfortable recognizing their hive from greater distances, until they're overall comfortable leaving the hive and doing their foraging behavior.

Amy 1:01:36

And they kind of start doing that by circular.

Jamie 1:01:38

Yeah, it's almost like they're flying towards the hive in these like circular zigzag or figure eight patterns, all while looking at the hive. Then they'll land and then start over again, but go further out, and then hover while looking at the hive, and then land and then go further out. So that's kind of how I tell the difference between the three of those. Great questions.

Amy 1:01:58

That sounds like when I first started driving.

Jamie 1:02:00

So Amy, I have a question for you.

Amy 1:02:01

What's that?

Jamie 1:02:02

How can people submit more questions to us?

Amy 1:02:05

So people can submit more questions. We really need our followers to be commenting or emailing us or however you want to communicate with us. I'm not going to give you my cell phone number, but I'll give you Jamie's cell phone number and you can call and text him. We really do need listeners to be commenting. We have so many listeners just from around the world already for our podcast. Keep them



coming. We like to see this. One day, we're hoping to maybe make it live so people can actually call in and we can answer questions live, but we're not there yet.

Jamie 1:02:35

We're hoping to get there. I'm optimistic we will someday.

Amy 1:02:38

We will one day.

Jamie 1:02:39

All right. You can submit those questions on our Facebook, Twitter, or Instagram @UFHoneyBeeLab. Thank you so much for joining us for Two Bees in a Podcast.

Amy 1:02:55

We'd like to give an extra special thank you to the following: to our editors Shelby Hal and Bailey Carol and to our audio engineer James Weaver. Without their hard work, Two Bees in a Podcast would not be possible. So thank you.

Jamie 1:03:10

For more information and additional resources for today's episode, don't forget to visit the UF/IFAS Honey Bee Research Extension Laboratory's website ufhoneybee.com Do you have questions you want answered on air? If so, email them to honeybee@ifas.ufl.edu or message us on Twitter, Instagram or Facebook @UFhoneybeelab. While there don't forget to follow us. Thank you for listening to Two Bees in a Podcast!