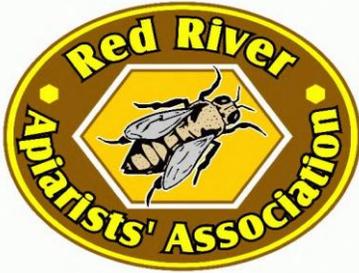


Red River Apiarists' Association

57 Years



MAY 2020

2020 Issue 5



The Bee Cause

Carnolian Bee Collects pollen from Apple Blossoms in May - Photo Credit Jim Campbell



MAY'S MEETING IS CANCELED DUE TO COVID-19

**However a Webinar invitation for MAY 12th at
7:30pm will be in your inbox shortly.**

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QUEEN MARKING COLOR FOR 2020 HATCHED & MATED QUEENS IS BLUE

Beekeeping is Food Production, and thus essential.

However reasonable safety precautions should be engaged.

- Any assistants or employees should be screened.
- Sales should be curbside pick up, or doorstep delivery.
- Unessential travel, shopping, or public interaction should be limited.
- Social distancing in all activities should be observed

Be
cautious, Stay Safe.

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Foulbrood: Page 21**

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Virtual Education Session – A First for the RRAA

Tuesday April 14, 2020 marked a new milestone for the Red River Apiarists Association (RRAA) as over 70 members connected for a beekeeping educational session on a virtual video conference call.

The recent COVID-19 pandemic health directive to ban public gatherings prevented the regular meeting of RRAA to take place. Meanwhile, beginning beekeepers and other members of the club were anxious to investigate spring honey bee colonies. Missing a meeting created difficulties in hearing a planned presentation on “Colony Development in the Spring” from Rheel Lafreniere, Provincial Apiarist, plus connecting with experienced beekeepers for advice and information.

Brad Hogg, member from Libau, and John Russell, RRAA president, collaborated on a way to connect people together on a virtual video conference service provided by Cisco Webex. Due to

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COVID pandemic, internet virtual conference providers, such as USA based Zoom and Cisco Webex, have been promoting free services to residential individuals as a way to keep in touch with toface” method.

John Russell welcomed attendees to the first ever virtual session for this was not an official RRAA meeting, usual business of minutes then turned the session over to Rheal for the power point presenta

Rheal presented a couple of scenarios dealing with the timing of colonies in the spring. He posed a question on what would a temperature was 10 degrees and the sun was shining. Although we suggested conditions might not be favourable to do that. The decision beekeepers need to consider other factors such as how long has it cleansing flight, how strong is the wind, are the colonies sheltered importantly, what is it that you want to see when you open the hive were invited to respond using a few different ways depending on how

The virtual session was attended using a variety of ways including or

Android phone or tablet, or through a web browser. While Brad co-hosted from Winnipeg and Rheal Lafreniere presented from h Canada, with more remote sites in Halifax, Montreal and Edmonton Miami, Stonewall, Selkirk, St Andrews, St Anne, Landmark, etc, were from Winnipeg and immediate areas.

Several comments of appreciation were texted into the system as being brought to a close. Thanks go to John Russell, Brad Hog Rheal Lafreniere for bringing the virtual educational session to me of RRAA.

Jim Campbell, a web attendee



The Rush to Stop the Asian Giant Hornet

- Mike Baker, as published in The New York Times (Abridged)

BLAINE, Wash. — In his decades of beekeeping, Ted McFall had never seen anything like it.

As he pulled his truck up to check on a group of hives near Custer, Wash., in November, he could spot from the window a mess of bee carcasses on the ground. As he looked closer, he saw a pile of dead members of the colony in front of a hive and more carnage inside — thousands and thousands of bees with their heads torn from their bodies and no sign of a culprit.

“I couldn’t wrap my head around what could have done that,” Mr. McFall said.

With queens that can grow to two inches long, Asian giant hornets can use mandibles shaped like spiked shark fins to wipe out a honeybee hive in a matter of hours, decapitating the bees and flying away with the thoraxes to feed their young. For larger targets, the hornet’s potent venom and stinger — long enough to puncture a beekeeping suit — make for an excruciating combination that victims have likened to hot metal driving into their skin.

In Japan, the hornets kill up to 50 people a year. Now, for the first time, they have arrived in the United States.

Mr. McFall still is not certain that Asian giant hornets were responsible for the plunder of his hive. But two of the predatory insects were discovered last fall in the northwest corner of Washington State, a few miles north of his property — the first sightings in the United States.

Scientists have since embarked on a full-scale hunt for the hornets, worried that the invaders could decimate bee populations in the United States and establish such a deep presence that all hope for eradication could be lost.



- Mounds of headless honeybees are a strong sign of Asian Hornet predation.

Beyond its size, the hornet has a distinctive look, with a cartoonishly fierce face featuring teardrop eyes like Spider-Man, orange and black stripes that extend down its body like a tiger, and broad, wispy wings like a small dragonfly.

“This is our window to keep it from establishing,” said Chris Looney, an entomologist at the Washington State Department of Agriculture. “If we can’t do it in the next couple of years, it probably can’t be done.”

Dr. Looney said it was immediately clear that the state faced a serious problem, but with only two insects in hand and winter coming on, it was nearly impossible to determine how much the hornet had established itself.

Adding to the uncertainty — and mystery — were some other discoveries of the Asian giant hornet across the border in Canada.

In November, a single hornet was seen in White Rock, British Columbia, perhaps 10 miles away from the discoveries in Washington State — likely too far for the hornets to be part of the same colony. Even earlier, there had been a hive discovered on Vancouver Island, across a strait that probably was too wide for a hornet to have crossed from the mainland.

Crews were able to track down the hive on Vancouver Island. Conrad Bérubé, a beekeeper and entomologist in the town of Nanaimo, was assigned to exterminate it.

He set out at night, when the hornets would be in their nest. He put on shorts and thick sweatpants, then his bee suit. He donned Kevlar braces on his ankles and wrists.



- Continued on next page

The Rush to Stop the Asian Giant Hornet

—Continued

But as he approached the hive, he said, the rustling of the brush and the shine of his flashlight awakened the colony. Before he had a chance to douse the nest with carbon dioxide, he felt the first searing stabs in his leg — through the bee suit and underlying sweatpants.

“It was like having red-hot thumbtacks being driven into my flesh,” he said. He ended up getting stung at least seven times, some of the stings drawing blood.



Jun-ichi Takahashi, a researcher at Kyoto Sangyo University in Japan, said the species had earned the “murder hornet” nickname there because its defensive group attacks can expose victims to doses of toxic venom equivalent to that of a venomous snake; a series of stings can be fatal.

The night he got stung, Mr. Bérubé still managed to eliminate the nest and collect samples, but the next day, his legs were aching, as if he had the flu. Of the thousands of times he has been

stung in his lifetime of work, he said, the Asian giant hornet stings were the most painful.

After collecting the hornet in the Blaine area, state officials took off part of a leg and shipped it to an expert in Japan. A sample from the Nanaimo nest was sent as well. A genetic examination, concluded over the past few weeks, determined that the nest in Nanaimo and the hornet near Blaine were not connected, said Telissa Wilson, a state pest biologist, meaning there had probably been at least two different introductions in the region.

Dr. Looney, and local beekeepers are in the process of setting up hundreds of traps to help locate established nests. In a region with extensive wooded habitats for hornets to establish homes, the task of finding and eliminating them is daunting. How to find dens that may be hidden underground? And where to look, given that one of the queens can fly many miles a day, at speeds of up to 20 miles per hour?



The buzz of activity inside a nest of Asian giant hornets can keep the inside temperature up to 86 degrees, so the trackers are also exploring using thermal imaging to examine the forest floors. Later, they may also try other advanced tools that could track the signature hum the hornets make in flight.

If a hornet does get caught in a trap, Dr. Looney said, there are plans to possibly use radio-frequency identification tags to monitor where it goes — or simply attach a small streamer and then follow the hornet as it returns to its nest. While most bees would be unable to fly with a disruptive marker attached, that is not the case with the Asian giant hornet. It is big enough to handle the extra load. - Mike Baker (Abridged)

Full Article: <https://www.nytimes.com/2020/05/02/us/asian-giant-hornet-washington.html>



Recommended Reading:

Following the Bloom

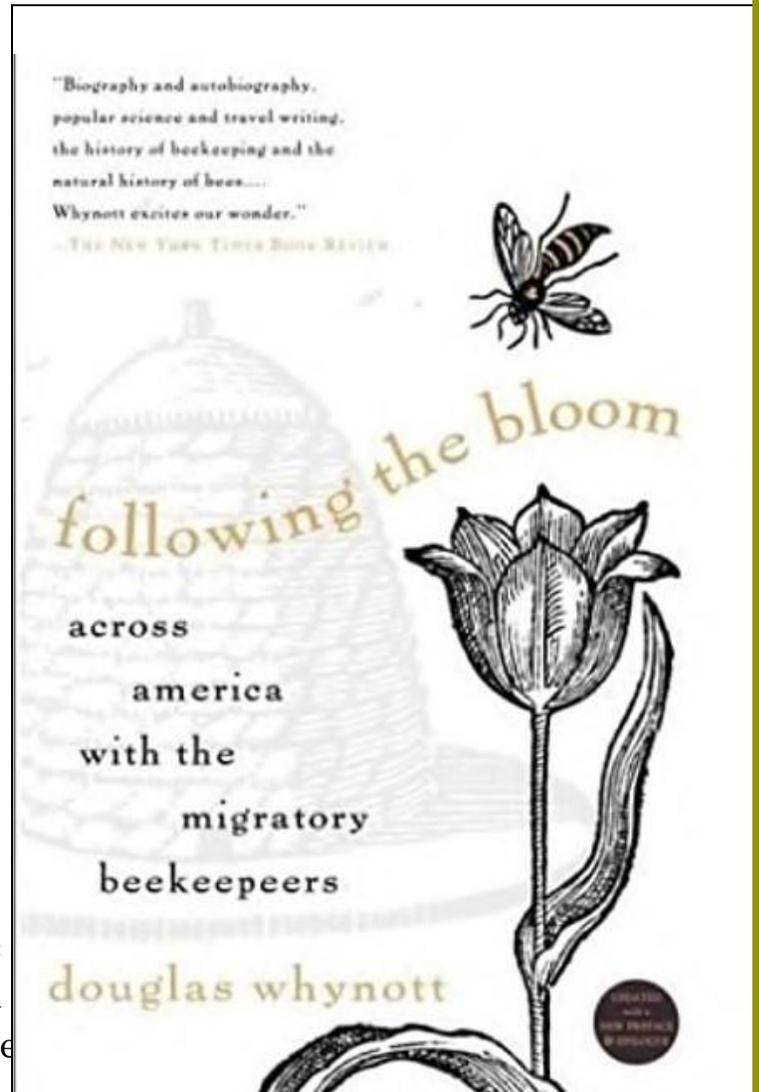
By Douglas Whynott

Twelve months on the road with America's last cowboys: the migratory beekeepers.

In this absorbing work of literary journalism, Douglas Whynott introduces us to the world of migratory beekeeping, a world composed of clandestine stateborder crossings, dodgy rigs, and unforgettable characters.

An updated edition of Whynott's classic chasing the nectar flow with a few good honeybees-*Following the Bloom* tells the cowboys." Overcoming catastrophic escaped bees that wreak havoc in suburb unfriendly state bee inspectors who thredreds of thousands of hives from state to cranberry bogs of Cape Cod and the blue e orange groves of Florida, beekeeper and bee alike pursue the bloom.

beekeepers, *Following the Bloom* beekeeping cowboy.



ysics of the beehive, the political realities elling adventures of America's migratory omage to the hive, the honey, and the

Questions to ask your Queen Breeder / Nuc Supplier:

- 1) Any diseases such as AFB in your operation over the last three years?
- 2) How old is the queen in the nuc you are selling me?
- 3) How high is your mite count right now? 4) What were your winter losses?

HONEY BEE QUEENS KEEP DRONES' SPERM ALIVE INSIDE THEM FOR YEARS, BUT SOME SURPRISING ENVIRONMENTAL TRIGGERS CAN CAUSE MASSIVE SPERM DEATH.

-By Alison McAfee

Boris Baer, a professor of entomology at the University of California, Riverside, has made a career out of studying sexual selection in social insects, including honey bees. Years before Pettis *et al.* published their work, Baer and colleagues found that temperature stress can decrease drone sperm viability. After holding drones at 102.2 °F (39 °C) for four hours, they observed a small but significant decrease in viability from 97 to 90%. 102.2 °F isn't all that hot, and the researchers would have liked to test a more severe heat shock, but as they noted in their results, "drones are surprisingly heat sensitive. When we exposed males to a temperature of 40 °C for 24h, they all died." Baer *et al.* found a



similarly small but significant decrease in viability when ejaculated sperm, rather than the drones themselves, were heated. But what if the sperm don't get a shock of heat within the drone or a test tube, but within the queen herself?

Pettis was intrigued by the idea that temperature spikes could reduce sperm viability inside the queen because there's one common scenario where queens are exposed to variable temperatures: shipping. When the researchers included temperature loggers in queen shipments, they found that it's not uncommon for queens to be exposed to temperatures below 46.4 °F (8 °C) or spikes above 107.6 °F (42 °C). They reasoned that this could be one real life situation impacting sperm viability within the queen, and likewise, queen quality. To mimic the temperature extremes that can happen during shipping, they either cold-shocked queens in the lab at 39.2 °F (4 °C), heat-shocked them to 104 °F (40 °C), or kept them at a comfy 86 °C (30 °C) as a control, and tested their sperm viability.

Alarmingly, after being exposed to these temperatures for two hours, the viability of sperm within both heat- and cold-shocked queens was about 60% lower than the controls. This is a far bigger effect than Baer observed in his heat-shocked drones, despite queens being more tolerant to temperature changes themselves. Together, these results suggest that the temperature spikes reduce viability a little by directly stressing the sperm, but a lot by causing some yet-unknown, fundamental change in the queen, likely within her spermatheca. Since metabolism appears to be so important for sperm storage, my guess is that shifts in temperature might cause shifts in metabolism toward the higher energy-producing – but more lethal – state. In my future research, I hope to figure out why these temperature spikes have such a drastic effect.

Imidacloprid, the most commonly used neonicotinoid pesticide, also reduces sperm viability, even at sublethal doses. In a different paper published in the *Journal of Insect Physiology*, Pettis and the rest of his research team found that doses as low as 0.02 ppb of imidacloprid, administered to queens as a topical dab to the abdomen once a day for a week, caused an average of 50% sperm viability reduction compared to controls. While the researchers recognize that the queen is most likely going to come in contact with such a pesticide through the food fed to her by workers, rather than through her abdominal cuticle, they argue that she could also be exposed chronically through contaminated wax.

These experiments all point to the lesson that we need to protect our queens if we're going to protect our colonies. We are at the mercy of the shipper when it comes to temperature variation during transport, and queens shipped by US Postal Service and United Parcel Service fare similarly. However, there is one major way we, as beekeepers, can intervene: buy local queens that don't need to be shipped. Depending on your location and the needs of your operation, this may or may not be possible for you. But if it is, consider going local. It just might help your queens keep their sperm alive, and let your colony thrive.

Follow up study by Alison McAfee, Abigail Chapman, Heather Higo, Robyn Underwood, Joseph Milone, Leonard J Foster, M Marta Guarna, David R Tarpy, Jeffery S Pettis can be found here: <https://www.biorxiv.org/content/10.1101/627729v3.full>

◁◁◁◁ President's Message ▷▷▷▷

The media is a funny thing: it feeds off of us, and it feeds on itself. Take this Giant Asian Hornet topic. Every news outlet is writing something about it, and the focus is on the nickname: **The Murder Hornet**.

(I'm well aware I published a like-same story on page 4, thank you very much...)

The focus of the N.Y. Times is about removing a potential invasive species. However, scaring the crap out of the population isn't anything more than a distraction. A lot of coverage is whipping up fear and alarm over the size, and the fact that they kill 30-to 50 people a year in Japan.

Honeybees kill 62 people a year in the United States, and only 2 of those deaths are from Africanized bees. Spiders kill 30. COWS kill 20. Heart disease kills 647000.

So perhaps we should focus on the impacts in agriculture more, and the danger to the public less? To paraphrase a member of ours: *"It looks like we have a while before we need to begin thinking about what we need to be doing to protect our hives. If/when they come to Manitoba there seems to be some steps that beekeepers can take. They have been in France for a few years now and we can learn from them and what works there. Calling them "Murder Hornets" rather than Giant Asian Hornets also drives the fear surrounding them in the general public. This information is actually from late 2019 but the media just decided that the middle of a pandemic was a great time to tell the story."*

Yes, they are big and sound scary, and yes they kill around 50 people in Japan annually, but they're not actually as harmful to humans as they sound; they're not aggressive to people, and will only sting when they feel threatened, according to a Purdue University fact sheet. The murderous nickname comes from the fact that they're good at killing their prey. Plus, they're a delicacy in parts of Japan and even served up even in the U.S.A.



Not so scary now eh?

Time to recognize that the media we are imbued with is not informing us for the greater good. Rather its intent on selling us "infotainment" Sensationalizing topics to get

Yes, this is a thing. Japanese Hornet, Kaluga, Crème Fraiche, on Habanero Crostini

attention pays the bills.

Here is a video about how bees and beekeepers manage Asian wasps in Vietnam. Not all of it is information that we can use but it's interesting. <https://youtu.be/JW7u4At5EGc>
Stay safe, keep your wits, and let's congregate online on the 12th! -John Russell



Minnesota Will Pay Homeowners to Replace Lawns with Bee-Friendly Wildflowers, Clover and Native Grasses

Minnesota **just allocated nearly a million dollars** in incentives for people to transform their lawns into bee-friendly wildflowers, clover and native grasses.

The state is asking citizens to stop spraying herbicide, stop mowing so often, and let their lawns re-wild into a more natural state. The goal is to provide “food sources for pollinators of all kinds, but will specifically aim at saving the rusty patched bumblebee, a fat and fuzzy species on the brink of extinction that seems to be making its final stand in the cities of the Upper Midwest,” **the Star Tribune reports.**



Research has shown bumblebees are particularly important to the region, as they vibrate at frequency that unlocks pollen other insects can't reach.

The loss of native prairies and forests across the country has made pollinators more dependent on urban and suburban lawn flowers, says James Wolfin, a bee habitat researcher at University of Minnesota.

His research has focused on “bee lawns” – grassy yards interspersed with small flowers such as Dutch white clover, creeping thyme, self heal, ground plum and dandelions.

The flowers make excellent food source for bees, while being cheap to plant and easy maintain.

“A pound of Dutch white clover is about \$7 and it grows low enough that people wouldn't even have to change the way they mow their lawn,” Wolfin told the Star Tribune.

Around 55 of Minnesota's 350 bee species depend on white clover alone, he notes.

“So just by not treating white clover like a weed and letting it grow in a yard provides a really powerful resource for nearly 20% of the bee species in the state,” Wolfin said.

The program is set to begin in spring of 2020. Citizens living in rusty patch bumblebee zones are eligible for grants up to \$500, while people living in zones of secondary and tertiary importance to bees are eligible for \$350 and \$150 respectively.

Considering a 1-pound bag of clover seeds costs as little as \$10, and spreads “like a weed,” that should be plenty to cover it.

In fact, letting your lawn go to the bees is so easy, those of us living outside Minnesota might want to consider joining in the effort!



-Article by Sara Burrows



City of Winnipeg Insect Control

Insecticide Use Program General Information

The City of Winnipeg's Insect Control Branch is involved in the control of nuisance and disease carrying mosquitoes in the city of Winnipeg and 10km beyond. Deltamethrin will be the main spray used for mosquito control. However to protect bees from potential toxic effects of this control product, a 90 meter pesticide free radius will be provided around all registered honeybee and leafcutter bee colonies within the city limits, and a 300meter radius outside of the city limits. Beekeepers are encouraged to participate in this program by advising the insect control program of honey bee locations.

For further information, please contact 311, or you can write to the insect control branch at #3 Grey Street, Wpg, Mb, R2L 1V2

An appointment can be made with the insect control staff to properly map beehive locations for buffer zone accuracy. Crews also fog at night to minimize direct contact with bees as they are in their hives at that time. Covering hives with a blanket, and changing hive water sources after spraying is a recommended practice.

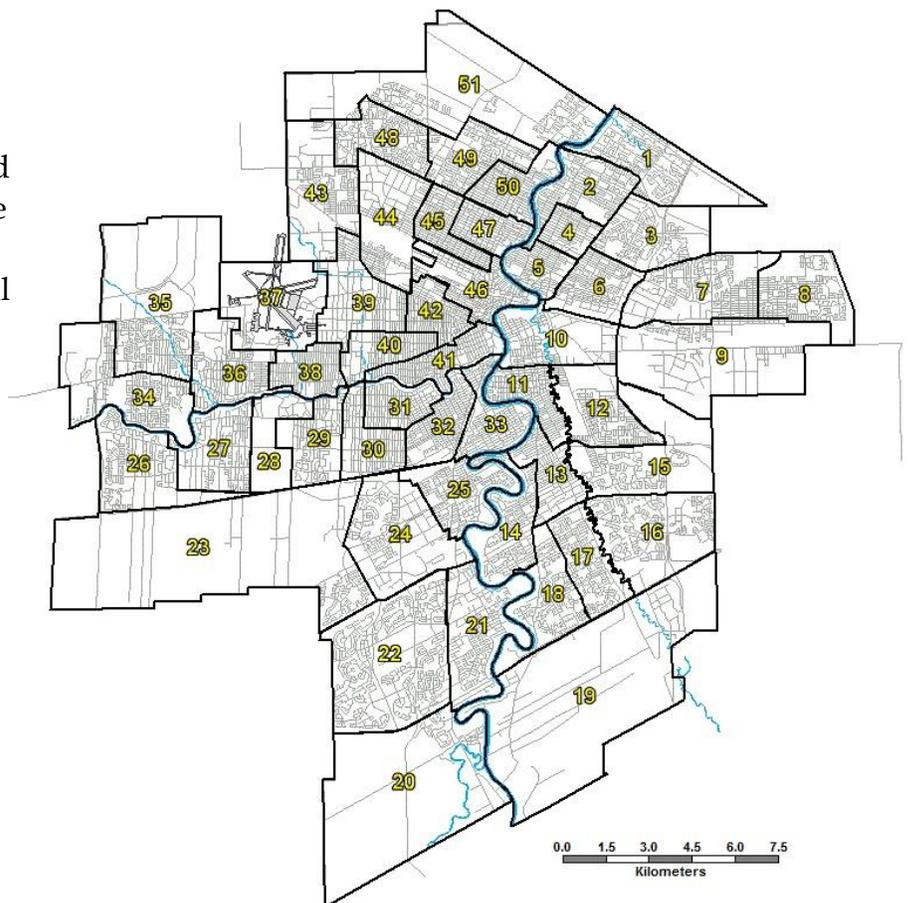
The city has investigated other mosquito control products but there are currently no products on the market that are more friendly to bees.

Buffer zones don't eliminate the risk deltamethrin poses to bees and other insects. Residuals in standing water or on blooming plants can be harmful. The hazard from pesticides is known to vary with dosage and weather conditions during and after application. Normally, in cooler weather, the residue lasts longer.

You can register for a buffer zone here:

<https://winnipeg.ca/publicworks/insectcontrol/mosquitoes/bufferzone.stm>

Anyone can subscribe to the City of Winnipeg Email Notification program that will inform you of spraying https://winnipeg.ca/wpgmail/subscribe_all.stm?elist=10#pw



Surprise: Bees Need Meat

Microbes in flowers are crucial to bee diets, and microbiome changes could be starving the insects

By [Paige Embry](#)



Ask an entomologist what makes a bee a bee, and you'll likely get some version of "bees are just wasps that went vegetarian." New research shows that isn't true. Bees are actually omnivores, and their meat is microbes. This finding may open a new window on why bees are in trouble: Anything that disrupts the microbial community in a bee's food, whether it is high heat linked to climate change, fungicides or another stressor, could be causing developing bees to starve.

Bees are supreme pollinators because of what their

babies eat. Most animals visit flowers to pilfer brush up against pollen and carry it to the next flower. Female bees, conversely, deliberately collect pollen, along with nectar, to feed their babes. This larval food choice is part of what defines a bee.

Photo credit: Martin Kyburz nectar, and they may or may not

Scientists have known for decades that fermenting microbes are present in pollen, but no one had seemed to consider whether they were also an important food for bees. The microbes function as an "external rumen" that breaks down parts of the pollen. It stands to reason that bees might ingest some microbes, but two researchers decided to investigate whether they eat enough to make them omnivores—and if the bees truly need those microbes to thrive.

Prarthana Dharampal of the University of Wisconsin–Madison and Shawn Steffan, who works jointly at the university and the U. S. Department of Agriculture's Agricultural Research Service (ARS), assessed 14 different bee species in six of the seven bee families. They found that bees eat substantial amounts of microbes, enough to change how they fit within food webs. Scientists use a scale to categorize where organisms belong in that web: those that make their own food, such as plants, register at so-called trophic position 1 (TP 1), herbivores register at TP 2 and carnivores do so at TP 3, or even higher if they eat other carnivores. The average TP across all the bees studied was 2.6, putting them squarely in the omnivore spot, halfway between herbivores and carnivores. Interestingly, the trophic position varied among families, ranging from just a bit above herbivores (2.11) to solid carnivores (3.09). Now that the TP is known, Dharampal says she wonders whether bees are really foraging for the pollen, or are foraging for the microbes that are associated with the pollen.

For most people, the idea that microorganisms can qualify as meat is radical. In the past four years, Steffan and his colleagues, including Dharampal, have published a series of papers laying out their evidence that microbes are an important part of a variety of food webs, including those that involve bees. Their findings confirm that fungi, bacteria and other microscopic players can fit anywhere in the food web, upending our vision of predator and prey, carnivore and herbivore—and what makes a bee a bee.

Steffan and his colleagues have also shown that microbial meat is a necessary part of bees' diet. The researchers tested a species of mason bee that lays eggs in aboveground tubes that are easy to access and transport. In each tube, the mason bee lays a series of eggs, each on its own wad of pollen and nectar. The researchers had a Utah beekeeper send them a batch of tubes immediately after the bees filled them. They then took the eggs off the wads and separated males from females and used only the male bee larvae, divided into seven groups of 12. The scientists sterilized half of the pollen and then fed different mixes of sterilized and unsterilized pollen to the groups. As the percentage of sterilized pollen in the food increased, so did the larvae's likelihood of dying. The larvae

also weighed less and took longer to mature. “Microbes are a very important source of nutrients for these bees,” Dharampal says. “If you take away this critical source, or portion, of their diet, they suffer tremendously.”

.....Continued on Page 16

Melissa's Musings

-Mary Chown

This month I am writing to you as Melissa, one of the many names given in ancient times to the queen of the bees. Now I have been around for a long time, and I am always fascinated by the ways in which other beings tell stories about me and my workers and drones. You humans like to observe our hives and keep trying to learn all you can about how we operate.

Lately I have been keeping track of a television program called "Star Trek: the Next Generation". In it the humans keep meeting strange new systems. But I am convinced that one of the writers of the program has to have been a honeybee in their last life. For the series has created a whole group of beings that act suspiciously like a hive.



civilizations on faraway planets and star

Let me explain. They call themselves a collective and they are hostile to the humans in the series. These creatures are known as Borgs. When humans encounter a single Borg, there is such a strong hive mentality that all the other Borgs know about this encounter without being present or being told and it takes a while for the humans to realize this. Somehow the information is spread throughout the hive. If one of the humans destroys a Borg queen, her workers simply build another one in frighteningly quick order.

All are ruled by the Borg Queen and she provides a common direction — much like the queen of one of my bee colonies. The Borg Queen has a unique personality and a sense of individuality that normal Borg drones and workers are not allowed. She is usually the one who "speaks" for the Collective in situations where contact with outsiders is best conducted by an individual. But for the Borg Queen the concepts "I" and "we" are interchangeable. In her own words, she is the "one who is many."

The Queen spends much of her time in her "lair" with her head and spinal column residing in a special alcove. This is

very different from real honeybees, but it adds to the drama. When she emerges, she will "re-assemble" herself into a predominantly artificial body — the arms, legs and torso appearing to be entirely synthetic, while the head and shoulders seeming to be organic, but with substantial cybernetic implants. Again, a departure from the real honeybee colony.

Apparently the Borg Queen has been destroyed on a number of occasions, but another queen always seems to take her place. (It is not clear whether more than one queen exists simultaneously, or if a new queen is created when the old one dies.) The Borg's collective nature makes it likely that each Borg Queen has all her predecessors' (and/or counterparts') qualities and memories. Therefore when she speaks as "I," she is presumably referring to all previous manifestations of the Queen, going back probably thousands of years.

What disturbs the humans most of all is their suspicion that the Borgs and their Queen really want all humans to be like them and when a human is captured, the hive begins to mold the captive into something more like a Borg. They call this process assimilation. Now real honeybees just want to go about their business reproducing themselves. There are enough of them that they don't need to assimilate humans into their midst. But as I said earlier, it adds to the drama. I suspect that we bees are just as mysterious to real humans as the Borgs appear to the humans in the television show.

-M.C.

R.R.A.A. Classified Advertisements

The RRAA , the Bee Cause, for you and through you:

The Bee Cause is the official publication of the Red River Apiarists' Association for distribution to its members and their colleagues in the beekeeping industry. It is published eight times a year on a monthly basis except December and the summer months of June, July, and August when membership meetings do not occur.

Articles can be best submitted in word documents as email attachments. Though they may be edited for spelling and basic grammar, no changes will be made to their contents, message and opinions without the authors written & expressed consent. They are those of their originator and not of the Red River Apiarists' Association.

Deadline for any submission to this newsletter is the second Sunday preceding the membership meeting to allow for publishing and mailing delays and the legal obligation to allow membership to review last meetings' minutes for errors or omissions before next meeting. Regular membership meetings are normally scheduled 7:30 on the second Tuesday of every month at

the Elmwood Legion 920 Nairn Avenue in Winnipeg except months noted above.

The Red River Apiarists' Association, formed in 1963, represents beekeepers of the Red River Valley and environs in southern Manitoba. The association provides a forum for the promotion of sound beekeeping practices through education, networking opportunities, meetings, field days, workshops, presentations by local apicultural experts, as well as the dissemination of this monthly newsletter. the bottom of

Manitoba Raised

Bees

4 frame nucs with 2019 a Queens consistently dispenses that Also throughout the 2020 up a season we will have queens available

FOR SALE:

Stainless Steel Tank, with an electrically heated water jacket, will hold more than 2 barrels of honey. It has a bracket on the sides near the top for holding



a screen mesh which could be used for filtering honey into the tank. The heater element is thermostatically controlled. There are two outlets near one side of the tank. One is for a honey gate and the other for attaching the portion machine.

EZ-Fill Portioning Machine:



Once one sets it to dispense a certain amount of honey it dispenses that amount and the gears back a bit to prevent drips. Pays for itself in accuracy and waste reduction! available

Sold as a Set:

\$5500.00 + G.S.T.

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The V.P.'s Corner

What is it that I do?

Having the position of Vice President of the RRAA is a great privilege, and an honor, one to be taken seriously. Over the past 3 years I have gained tremendous insights knowledge and developed wonderful relationships in the industry. However, there is a lot of activities behind the scene that takes place, that few are privy too, and I'm sure some have questioned, "What is it that I do as VP?"

Besides the usual introduction to monthly speakers..., Nothing!

However from my first day of being appointed to the position of VP, I was entrusted with an open mandate, and an opportunity to develop an educational perspective for the club. Being a new bee keeper with a fresh and inquiring mind afforded me the ability to determine important areas needing addressing such as Colony Development and bee Biology, Environmental conditions, Nutritional and Food Bee Health managements, and sharing from experienced bee keepers, to name a few.

This opened the door to meet up with many industry professionals from academia, weather professionals, Veterinarian's to bee keepers all of whom you've met as our guest speakers over the past 3 seasons. In developing a system of interviews with these guest, each of us looked forward to our meetings as it usually centered around authentic coffee cappuccinos, and delicious cuisines at unique places. Some of us like Rheal, John and I try to have our annual review of ideas topics etc., however this year we met up with complications.... But soon again.

As we viewed over the landscape of Bee Keeping in Manitoba, we became Interested overall in industry complications, and needed to understand what others were experiencing which led us to visit our sister associations meetings and attempt to forge new relationships. Of course with the kind offer from our friend Jeff Richard from Bee Maid facilitated our travel adventures to these meetings. The result from these meetings have greatly benefited us all, as many are encouraged and welcomed to join our sessions as we forge great relationships with various club members, ultimately sharing our experiences, success, and failures.... as part of our learning curve.

Looking into our future, we continue to find appropriate topics, presentations, sciences, issues.... Relevant to keep not only our members on the forefront of important matters but provide a small window to the industry in general of Manitoba.

Although The social distancing, isolation have curbed our personal face to face meetings, On occasion we come together through the use of technology, where appropriate, share a glass of wine, coffee and a few stories, and a few laughs. You cannot keep a bee keeper down.



So! I really don't do much!



- Tim Kennedy V.P. - R.R.A.A.

Surprise: Bees Need Meat...Continued from Page 11

Microbes in flowers are crucial to bee diets, and microbiome changes could be starving the insect



The idea that bees are vegetarian is entrenched in entomology, and Steffan admits he and his colleagues ran into headwinds when trying to get their papers related to omnivory in bees accepted. Ultimately, they were published in the *American Naturalist* and *Proceedings of the Royal Society B*, respectively. Gloria Degrandi-Hoffman, who works for ARS and has investigated the honey bee microbiome but was not part of the work, says that the scientific community is always skeptical. When a new finding goes against a widely held perception, people take some convincing.

The mason bee results suggest that bees could suffer or starve if certain microbes disappear from their diet. Scientists have attributed the declines of both managed and wild bees to various combinations of habitat loss and degradation, pests and pathogens, pesticide exposure and climate change. They have largely focused on how such factors impact bees directly. The next step is to look at whether the stressors may affect the pollen-borne microbes. Steffan says any stressor that throws the external rumen out of whack could be “an indirect, but no less lethal” way of killing bees.

One such factor is heat from climate change. “It may not be that heat is directly lethal for bee development,” Steffan says. “But it very well could be that high heat knocks out the microbial symbionts in the pollen, and then the bee suffers from the lack of microbes.” Steffan and Dharampal are currently investigating this possibility.

Fungicides could be culprits, too. Although more research needs to be done, Steffan says, “we have ample evidence, at this point, that fungicides dramatically alter the microbial community of fermenting pollen.” And, he adds, “agricultural use of fungicides is very likely a primary stressor—the primary stressor—for bee decline.”

Of course, failing bee populations can cripple the crops and wild plants they help to pollinate. Around three fourths of the earth’s flowering plants and crops benefit from animal pollinators, including 87 of the 115 leading global food crops. The 20,000 species of bees in the world are not the only animals that pollinate, but they are top pollinators for many staples.

Knowing the role of pollen microbes may eventually help solve conservation challenges by, for example, directing flower choices for habitat restoration. Sandra Rehan of York University in Toronto, who studies microbial life associated with wild bees and was not part of the recent papers, says the findings “will have longterm conservation applications once we do associate the flowers, the landscape and the microbes.” In a 2017 study, she and her co-authors wrote, “Pollinator habitat restoration efforts may need to consider flower plantings that increase the presence of core bacteria that are found in flowers, adults, and pollen provisions, such as *Lactobacillus* and *Saccharibacter*. Future work is needed to determine the role of these core bacteria in restoration of healthy pollinator communities

The new insight about pollen microbes is just the latest example of how important the microbiome is in all realms of life, which we may have ignored to our peril. “We, as animals and flowering plants have flourished, to the extent that we are able to cooperate, co-opt and commandeer microbial services,” Steffan says. He adds that we view food webs through the lens of vertebrates and mammals, but microbes have

been on the planet much longer than animals or plants. Steffan, Dharampal and others call for a radical revision of how we view life on earth. At the end of their *American Naturalist* paper, they write, “Considering bee-microbe symbioses from the microbial perspective, microbes can be viewed as avid beekeepers, facilitating and assisting



their faunal symbionts in the annual pollen harvest.”
By Paige Embry, As Published in Scientific American

Photo Credit: Jim Campbell



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Older Articles of Seasonal Interest

These articles have appeared in previous BeeCause issues, and will be archived for RRAA member access in our soon to be announced group drop box. If you don't have your old copies handy, email me for the back issue containing the article you wish.
honeyb@mymts.net

Pollen Patties: April 2018

Feeding Syrup: April 2018

Urban Beekeeping guide: March 2018

Packages VS Nucs: Feb 2018

**Local Queens: A breeders perspective
March 2018**

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What is American Foulbrood?

By Jennifer Sartell

American Foulbrood can be one of the most devastating diagnoses for a beekeeper. It is a highly infectious bacteria of the honeybee and can not only cause a high number of bee deaths and colony collapse, but because of the nature of the disease, beekeepers can find themselves having to destroy via incineration, all of their beekeeping equipment. “The disease is not able to be cured, meaning that destruction of infected colonies and hives or irradiation of infected material is the only way to manage AFB.”



Our hives have not been affected by American Foulbrood, thank goodness! But in doing research for this post, I read some of the devastating stories of beekeepers having to destroy thousands and thousands of dollars worth of equipment to eradicate this disease from their bee yard. Not to mention the stress of having to have your hive inspected by the authorities, which can be a lengthy and stressful process. In the 8 years I've kept bees, I don't hear a lot about American Foulbrood. But I think it's important, especially to new beekeepers, to understand the risks, the investment and the things to be cautious of, like the sharing of equipment, tracking bee diseases in your area and budgeting your beekeeping hobby. I think it's important to have a budget when you begin beekeeping so that you know the financial risks, not only for American Foulbrood, but for other beekeeping catastrophes.

What is it? “American foulbrood (AFB) is a fatal bacterial disease of honey bee brood caused by the spore forming bacterium *Paenibacillus larvae*.” The bacteria infect bees at the pupa stage killing the new generation of bees. Eventually the hive cannot replenish its members and the colony dies.

How is it spread? AFB is not airborne, it must be carried into the hive via other bees or on equipment that has come in contact with an AFB positive hive. “Bacterial spores can easily be spread between hives and apiaries through beekeeping practices such as through the exchange of equipment and movement of infected combs. Adult bees are not affected by AFB but can spread spores within and between infected and clean hives through robbing and drifting.” It can also be spread through swarming colonies, though this is rare. “The spores of AFB are capable of surviving for more than 50 years and are resistant to extreme temperatures meaning freezing or heating infected material will not disinfect material. Infected material (hive components, tools etc) need to be burnt or irradiated to ensure AFB spores are killed.”



How it works its way through a hive? The bacteria is introduced from an outside source. See above. Nurse bees who clean cells pick up the bacteria and infect the young while feeding. When the infected young die, the bees who clean the cells then come in contact with the bacteria and spread it even further. Nectar stored in infected cells becomes contaminated and eventually the entire honey store is fouled. This is why it's important that beekeepers must register their hives. One of the reasons for this is to help with the management of American Foulbrood. If there is an outbreak in your area you will be notified by the province to look for symptoms. You may also be required to have an inspector come out and make sure the disease isn't spreading to near-by hives. Contrary to the name, American Foulbrood is present throughout the world. Even if your state does not require hive registration any American Foulbrood infections should be reported to your local Department of Agriculture.

Check with your local beekeeping organization or your provincial apiarist for more information on the distribution of American Foulbrood in your area.

How to Diagnose American Foulbrood

By Jennifer Sartell

Every Time I've ever heard anything about American Foulbrood I've always heard that the disease comes with an odor. And while this is correct, often, by the time you can detect an odor, the disease has advanced.

There are other ways of telling if you might have American Foulbrood in your hive.

Symptoms and What to look for

- dark brood capping
- dead pupa
- sunken cells with a greasy or glossy sheen
- chewed cell perimeters
- scale on cells
- an odor
- scaly wax formation (especially visible when the frames are held at an angle)



Rope Test

One way you can check to see if your hive might have American Foulbrood is to perform the rope test. This is a basic test that will indicate if you need to take further steps in diagnosing.

To perform the rope test, you insert a small object like the back end of a match tip into one of the cells. If the contents pulls up in a kind of sticky/slimy rope then you may have American Foulbrood.

Using a Test Kit

You can also order an American Foulbrood test kit, which is similar to a pregnancy type test. The most popular one is the Vita Diagnostics Test Kit

These tests are easy to use, fast and accurate. They are also a relatively inexpensive investment. (considering what might be at loss if several of your hives become infected and must be destroyed. The tests come with complete instructions, and everything you need.

-Here is a video link on how to use the kit:

<https://www.youtube.com/watch?v=GIgJoOchNo4>

If you get a negative result, but still suspect Foulbrood, you can also order a test kit for European Foulbrood, which is almost the same disease symptom-wise but caused by the bacteria *Melissococcus plutonius*. European Foulbrood tends to be less severe and less devastating than AFB.

American Foulbrood is caused by *Paenibacillus larvae*

If both these tests are negative then chalkbrood, sacbrood, other viruses might be at play. Varroa mites can also cause Parasitic Mite Syndrome.

Report any positive results to your provincial apiculturist . They can help you manage the disease and keep it from spreading to other hives both in your own yard and your neighbors. Bees can fly great distances so if your hive is positive, you run the risk of infecting other beekeepers miles from your yard.



Red River Apiarists' Association Membership Application



The RRAA membership extends for one calendar year. Renewals are due in January and includes access to 8 monthly issues of the RRAA BeeCause newsletter.

I hereby apply for membership to the RRAA\$35.00/year

*Optional: Beekeeper Liability Insurance - \$65.00 + \$5.20 MMMM.... \$70.20/year

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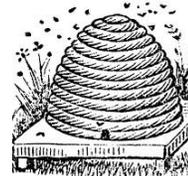
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