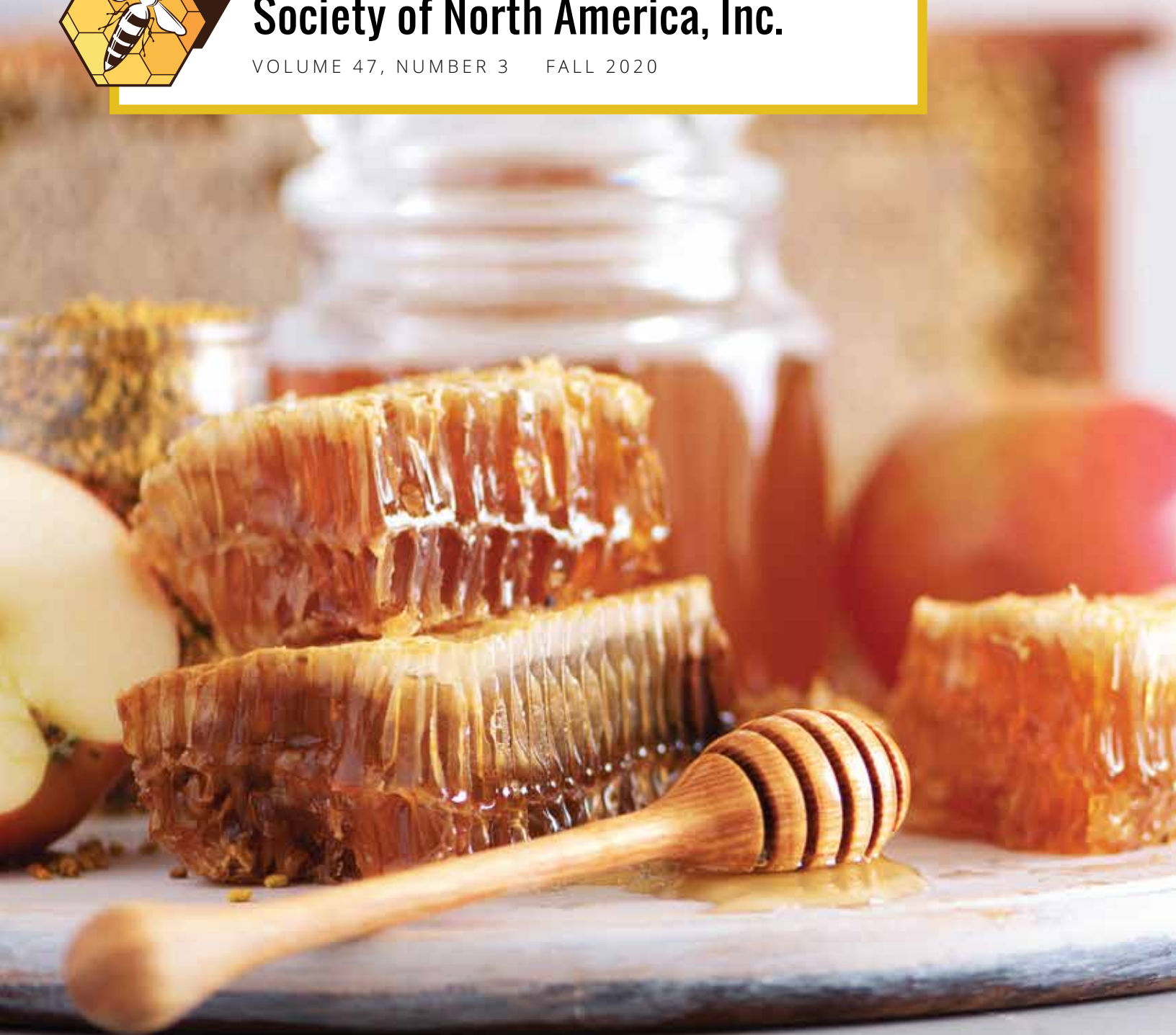




Journal of the Eastern Apicultural Society of North America, Inc.

VOLUME 47, NUMBER 3 FALL 2020



Local Honey

HOW LOCAL SHOULD IT BEE?

Research Awardees

PRESENT SUMMARIES OF
THEIR WORK

EAS 2021 Conference

SCHEDULED FOR JULY 16-20 IN
MASSACHUSETTS



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THE EAS JOURNAL, FALL 2020

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WELCOME, From the Desk of the President

The Massachusetts Beekeepers Association is honored to have the opportunity to host EAS in our great state at the University of Massachusetts Amherst (UMass Amherst) during the week of July 26th- July 30th, 2021. We look forward to sharing the rich history and importance of beekeeping in Massachusetts. In 1870, the University of Massachusetts was the first educational institution to teach courses on beekeeping and honey bee behavior. The first short courses on beekeeping were taught at the college by Alonzo Bradley Esq., an expert on honeybee behavior and the President of the Massachusetts Beekeepers Association at the time. The discovery of bee space by Reverend Lorenzo Langstroth occurred in nearby Greenfield, MA. Massachusetts is one of the leading cranberry production states in the country. Thousands of hives are needed for a full cranberry crop. UMass Amherst is also the home of the State Apiary established to serve as a vessel for education, outreach, demonstrations and research related to agriculture sustainability, pollination, honeybee health and hive management.

The theme of the conference is Past, Present and Beyond. We will explore with our speakers the history of Beekeeping, the current state of Beekeeping and what Beekeeping in America might look like in the future. Dr. Tom Seeley, Dr. Sam Ramsey, Dr. Tammy Horn-Potter, Dr. Heather Mattila, and Dr. Cameron Jack have all graciously agreed to speak at the conference.

If an in-person conference is possible, it will be held at the conference center at the University of Massachusetts Amherst. UMass Amherst is a world-class university and a nationally ranked public research university. The conference center has an on site hotel and an extensive food court. The food services have consistently been ranked at the top in the country. The Amherst area is known for its cuisine, culture, art, and independent films. Also, there is an extensive trail network for walking, biking, and hiking. The campus is only 90 miles from Boston, 175 miles from New York City, and 52 miles from Hartford, CT.

Attendees will have the opportunity to sign up for two off campus excursions that feature the rich historic side of Massachusetts. There will be a bus trip to nearby historic Old Deerfield. Explore the lifestyle of early New England in a working village of endless beauty. Historic Deerfield is a series of museums, programs, and historic homes dedicated to the heritage and preservation of 17th century Deerfield, and the history of the Connecticut River Valley. There will also be a bus trip to Old Sturbridge Village. Old Sturbridge Village is a living museum that recreated life in rural New England during the 1790's-1830's. A private tour of their antique beekeeping equipment collection is part of this trip.

The Massachusetts Beekeepers Association members look forward to welcoming you and your family to EAS in the great State of Massachusetts. Come to improve your Beekeeping, hear the latest Honeybee research, enter the EAS Honey show, participate in the EAS Master Beekeeping program Testing & Certification, attend workshops on cooking with honey, bees under the microscope, and so much more. Please "Save the Date" - July 26th-30th, 2021 and check the EAS website for updates. Join us at EAS 2021! You are sure to gain new friends, new ideas, and inspiration to take your beekeeping to new levels.

Mary Duane
President of EAS



HONEY BEE HEALTH COALITION

Report



EFFECTIVE MANAGEMENT & MEDICATIONS FOR HONEY BEE HEALTH IN THE U.S.

Please note that these controls and medications must be applied according to the labels, and in some cases, a Veterinary Feed Directive is required. If you are using ingredients or formulations that are not listed on the label, there's good reason why applying could be illegal and harmful to yourself and your bees.

American Foulbrood Controls:

Highly recommended to burn the hive(s) if showing heavy infections as antibiotics are not effective against spores and will only mask the symptoms.

- **Oxytetracycline.** Terramycin® and Tetra-Bee Mix® are product names and these products require a Veterinary Feed Directive or prescription
- **Tylosin.** Can be difficult to find and requires a Veterinary Feed Directive or prescription (note that this control is difficult to find)
- **Lincomycin.** Requires a Veterinary Feed Directive or prescription. (note that this control is difficult to find)

European Foulbrood Medications:

- **Oxytetracycline.** Terramycin® and Tetra-Bee Mix® are product names and these products require a Veterinary Feed Directive or prescription.

Nosema:

- **Fumidil-B®.** Does not require a Veterinary Feed Directive or prescription. (Note: just came back on the market in 2019).

Small Hive Beetles:

- **Checkmite+® (coumaphos).** Checkmite+® the product name and it can be difficult to find in bee supply stores. Does not require a Veterinary Feed Directive, but extreme caution should be used in applying this product.
- **GardStar® (permethrin).** Approved for use as a soil drench.

Tracheal Mites Treatment:

- **Mite-A-Thol® (menthol).** Does not require a Veterinary Feed Directive or prescription.

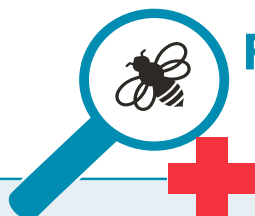
Varroa Mites Treatment:

The products that are approved for varroa mite control do not require a Veterinary Feed Directive, but they do require close reading of the labels for the appropriate season, temperature, and dosage.

- **Apiguard® (thymol)**
- **Apivar® (amitraz)**
- **Formic Pro™ (formic acid)**
- **Hopguard® II, (hops beta acids)**
- **ApiLife Var® (thymol and essential oils)**
- **Mite-Away® Quick Strips, (formic acid)**
- **Oxalic acid**

Wax Moth:

- **Para-Moth® (paradichlorobenzene).** Does not require a Veterinary Feed Directive.
- **B402 Certain™ (*bacillus thuringiensis*).** A biological larvicide



REGISTERED MEDICATIONS & PESTICIDES FOR HONEY BEE HEALTH IN CANADA

Please note that these medications must be applied according to the labels, and in some cases a Veterinary prescription is required. If you are using ingredients or formulations that are not listed on the label, there is good reason why applying could be illegal and harmful to your bees, produced honey and yourself. For more information and if you have a question, consult with your Provincial Apiculturist.

American Foulbrood Medications:

- **Oxytetracycline (Oxytetracycline)**
This product requires a veterinary prescription.
- **Tylan Soluble (Tylosin tartrate)**
This product requires a veterinary prescription.
- **Lincomix Soluble (Licomycin hydrochloride)**
This product requires a veterinary prescription.

Note: Highly recommended to destroy the infected hive(s) if showing heavy infections

European Foulbrood Medications:

- **Oxytetracycline (Oxytetracycline)**
This product requires a veterinary prescription.

Nosema Medications:

- **Fumagilin-B (Fumagillin Dicyclohexylamine)**
Does not require a veterinary prescription.

Small Hive Beetles Treatment:

- **Checkmite+ (Coumaphos)**
In hive control. Does not require a veterinary prescription.
- **Perm-UP® (10%EC – permethrin)**
For drenching soil around. Does not require a veterinary prescription.

Tracheal Mites Treatment:

- **Formic acid 65%**
Does not require a veterinary prescription.
- **Menthol (Menthol)**
Does not require a veterinary prescription.

Varroa Mites Treatment:

The medications that are approved for varroa mite control. They do not require a veterinary prescription.

- **Apivar® (Amitraz)**
- **Apistan® (Tau-Fluvalinate)**
Reported wide spread mite resistance in Canada
- **Bayvarol® (Fulmethrin)**
Reported cross resistance with Apistan
- **Checkmite+ (Coumaphos)**
Reported mite resistance in Canada
- **Formic acid 65%**
- **Formic Pro, (42.25% Formic acid)**
- **Hopguard II, (Potassium salt of hops beta acids)**
- **Mite-Away Quick Strips, (46.7% Formic acid)**
- **Mitegone (65% Formic acid)**
- **Oxalic acid (Oxalic acid dihydrate)**
- **Thymovar (Thymol)**

Solving the Puzzle

Featured article from the September 2018 edition of BeeLines.



When a mysterious illness sapped their infant daughter of her strength and ability to eat, the Watts family found the expertise and care they needed at Kentucky Children's Hospital.



The Watts family gathers around a Thanksgiving meal at the hospital to keep a promise and count their blessings. (UK photo)

A hospital cafeteria would seem to be the last place where a family would willingly choose to spend time on Thanksgiving. But for the Watts family of Harrodsburg, Kentucky, the cafeteria that serves families, visitors and employees of Kentucky Children's Hospital was the ideal place for them to celebrate the true spirit of the holiday.

For just a year before – in November 2016 – their 6-month-old daughter Jade had fallen severely ill and had been hospitalized upstairs, in the Pediatric Intensive Care Unit (PICU), with **infant botulism**, a rare condition that afflicts approximately 100 children each year.

The expert knowledge, and tender care, shown by emergency and PICU staff at Kentucky Children's Hospital restored Jade to health and represented, for the Watts family, the perfect reason to return and give thanks.

Warning signs

As the mother of three older girls, Courtney Watts knew something was not right with Jade as the hours passed on Nov. 17, 2016. Up to that point, Jade had been a healthy baby who had hit all of her developmental milestones. But on this day, Jade had no appetite and struggled to nurse.

"There was no fever, no rash. She wasn't acting different in any other way," Courtney said. "But by bedtime, she was gagging and coughing during nursing. I was worried she would become dehydrated. I decided that if she didn't wake up ravenous the next morning, we would go straight to the pediatrician's office."

The next morning it was clear Jade was worse. “She was alert and happy to see me, but she was oddly weak,” Courtney recalled. “She could neither latch on nor swallow during nursing, but she was too weak to push me away.”

Courtney and her husband, Casey, were at the pediatrician’s doorstep with Jade when the nurse unlocked the door at 8 a.m. and informed them there would be at least an hour wait. Upon hearing Jade’s raspy, faint cry and seeing her full-body weakness, the nurse instructed them to go to the UK Makenna David Pediatric Emergency Center at Kentucky Children’s Hospital immediately. “I felt like there was a hand wrapped firmly around my throat,” Courtney said. “There was something wrong with my baby.”

As emergency nurse Renee Spradlin, BSN, started Jade’s IV, she noticed something alarming. “Usually, if we need to place IVs for children, you get a cry or scream,” Spradlin said. “But Jade didn’t react. No crying, no tears. She just laid there. It’s scary when a baby does not react at all.”

Test after test

That IV needle prick was just the first in a succession as the emergency staff tried to pinpoint the cause of Jade’s increasing weakness and continuing decline. They inserted a catheter to test for the usual suspect of a urinary tract infection: negative. They drew blood to screen for an elevated white blood cell count: negative. They performed a lumbar puncture to test for meningitis: negative. They conducted a cranial CT scan to check for bleeding in her brain: normal.

“My baby had just been pricked and poked and prodded

“It was so surreal to be in this situation,” she recalled. “We were supposed to be having a regular day. I kept thinking, ‘How did this happen? What did I miss?’”

from every angle,” Courtney said. “Nothing showed up. Nobody could tell us what was wrong. It was an absolutely gut-wrenching feeling.”

Connecting mom to mom

As one test followed another, Courtney was grateful for Spradlin’s support. “She connected with me on a mom level,” she said. “I needed a mom to understand this was MY baby on the table. This was MY heart and soul being pierced with every needle she took, every gouge her body endured. I trusted the doctors and their expertise, but I needed another mom to love my baby like she was hers, and that is what Renee did.”

It came naturally to Spradlin; all she had to do was imagine her son, Matthew, in the same position. “I’ve worked as an emergency room nurse for seven years,” she said. “Now that I have a child of my own, I have even more empathy for the parents who come in with their sick children. I know that it makes a big difference in their care.”

As Jade was wheeled up to the 12-bed PICU, Courtney looked at her daughter’s tiny, limp body on the gurney equipped with a crash cart, the emergency equipment needed

Mystery solved when symptoms analyzed

The PICU team had called in **Robert Broughton, M.D.**, chief of pediatric infectious diseases, to consult on Jade’s case. After a quick review of Jade’s symptoms – **weakness, flaccid muscle tone, constipation, poor nursing, weak cry** – Broughton diagnosed her with **infant botulism**.

“There is no other condition quite like it,” Broughton said. “Jade had a characteristic presentation of it that made it easy to recognize.”

Infant botulism occurs when a baby – usually under six months of age – ingests *Clostridium botulinum* spores, which are found in soil and in honey products. The spores germinate into bacteria that multiply in the intestine and release a toxin. This toxin circulates in the blood and binds to the neuromuscular junction, disrupting the transmission of electrical signals from the nerves to the muscles.

“That’s why patients develop weakness and can’t move well,” Broughton explained. “It also interferes with the smooth muscle in the gastrointestinal tract, which causes the hallmark constipation.”

in case a patient's heart stops. "It was so surreal to be in this situation," she recalled. "We were supposed to be having a regular day. I kept thinking, 'How did this happen? What did I miss?'"

For Jade's first 45 minutes in the PICU, her parents waited in the Ronald McDonald family room while her care team settled Jade into her room. "It was hard to be away from her," Courtney said. "But I felt like we were in the place we needed to be. I felt that if there were people in the world who could solve this problem, they were the people in the room right then looking at my baby."

The couple kept busy answering a flurry of questions and helping construct a timeline of Jade's previous few days. The doctors were especially interested in one question: When was Jade's last bowel movement? As Courtney thought back over the week – Jade was with her babysitter one day, with her grandmother another day – she realized it was possible that the last time was Monday, four days before.

"I could tell they were on the trail of something," Courtney said. "They were figuring things out."

100 cases per year

Even though there are only around 100 cases of infant botulism each year – the majority of them in the United States – Broughton was no newcomer to the condition. He had encountered it firsthand multiple times throughout his 35 years of practicing medicine at UK.

"I was the chief resident in 1979 or 1980 when we had the first case here – the first case ever reported in Kentucky," he recalled. "Since then, I have probably seen 20 cases. Even though it is a rare disease, you are more likely to encounter it at a tertiary medical center like Kentucky Children's Hospital because we have patients referred to us from all over central and eastern Kentucky."

Thanks to his expertise, Broughton knew the proper regimen to follow. To confirm his diagnosis, he took a stool sample that was shipped to the state diagnostic lab in Frankfort to be tested for the presence of the toxin. However, it can take 24 to 72 hours for those results.

Because of his high degree of certainty in his diagnosis, Broughton contacted the California Department of Health, which controls the distribution of the antitoxin used to treat infant botulism. He requested a dose of Baby BIG-IV (botulism immune globulin) be sent immediately. The nearest supply of the antitoxin was in North Carolina; it would be shipped overnight.



"The goal of the medicine is to prevent any further deterioration of the baby's condition by absorbing the toxin in the bloodstream and neutralizing it before it can attach to the neuromotor junction," Broughton said. "It shortens the course of the illness. However, it's important to realize that the medicine cannot reverse the toxin that has already attached; that has to degrade over time. So, while the baby will not get any weaker after the medication, it may be a few days before parents see an improvement in their child's condition."

Holding their breath

When Courtney went home on Friday night, she felt hopeful. She now had a name for her daughter's illness. The antitoxin was on its way and would be administered the next day. On Saturday morning, she returned to the hospital in an upbeat mood. It did not last long.

When she entered Jade's room, she found her husband in a somber conversation with **Matthew Bacon, M.D.**, the pediatric critical care doctor on duty. Jade's condition had deteriorated further overnight and she was starting to have difficulty breathing.

"When a child loses their muscle tone, they can't protect their airways," Bacon explained. "They can't cough or clear their secretions. There's a danger of them gagging or aspirating. Before her condition reached a crisis point, it seemed appropriate for us to intubate Jade proactively so that a ventilator could assist with her breathing."

Jade's parents were shaken by the news. "It hadn't sunk in how fast and how much she was going to continue to decline," Courtney said. They agreed to the intubation – with one request: that Jade's father be allowed to remain in the room during the procedure.

"In pediatrics, we try to let the family in for all procedures," Bacon said. "I gauge the family's stress level and comfort level. I always tell them there is only one patient in the room at a time. So I was happy to let Casey stay and watch as much as he was comfortable. Jade did well, the procedure went smoothly, and it helped for Jade's dad to see that."

Comforting company and care

It was tremendously helpful for Jade's mom, too. "I appreciated the ability of Dr. Bacon – and all the caregivers –

to maintain their professionalism without losing their ability to connect with us as parents," she said. "Dr. Bacon was in control, but he still gave us the room to be parents in a very powerless situation."

After Jade received her antitoxin, the Watts family shifted from crisis mode to wait-and-watch mode for the next several days. As the long hours passed, they appreciated the care from the nursing staff members **Ashley Kenley, R.N.**, an 11-year-veteran of the PICU and Jade's primary nurse for five days, and **Trinaye Pierson, R.N.**, training on the floor.

"As a parent, I can understand the loss of control of caring for your child," Kenley said. "It's important to talk with parents about how they're feeling about the situation, go through the plan of the day and answer any questions they have. We need to take care of the families, too."

Excerpted from "Solving the Puzzle" in UK HealthCare's *Making a Difference* 2018 magazine. Used with permission. All rights reserved by the University of Kentucky.



MASTER BEEKEEPERS

Portrait of a New Jersey Master Beekeeper: Grant Stiles

by Landi Simone

I met Grant Stiles in 1997, when I took the short course in beekeeping that he and Bob Hughes were teaching at Rutgers. At that time, Grant was the NJ State Apiarist. I was that pain-in-the-ass brand new beekeeping student who wouldn't stop asking questions. I'm pretty sure Grant would have given both his smoker and his hive tool just to shut me up.



I'll never forget my first hive inspection. It wasn't a great "bee day." It was drizzling and overcast. Grant had just pulled a frame of brood and was pointing out brood, nectar, pollen, etc. I was mesmerized. My fascination must have shown on my face because Grant looked me in the eye and asked, "You want to try?" "Yes!" He handed me the hive tool. I clumsily tried to imitate his technique and succeeded in getting a frame out. As soon as I had it in my hands, one of the bees stung me on the palm. It was my first sting. I responded with some choice words in Spanish – my mother's native tongue, to which I tend to revert in times of stress. Grant's eyebrows migrated up into his hairline and I could see him trying very hard not to laugh. For several years after that, he called me "the lady with the words," and, would you believe he still teases me about it?! That was the beginning of a friendship that has lasted nearly a quarter of a century.

Grant Stiles has been keeping bees since he was eight years old, when he began helping his Dad with his bees in Vermont, where he spent much of his childhood after his parents moved there from NJ. In his early years,

Grant and his family were involved in many different aspects of agriculture and young Grant, active in his local 4H club, kept chickens, pigs and cows. His true passion, however, would always be honey bees. The family moved twice more – first to Tennessee when Grant was in fourth grade (listen hard and you can still hear a bit of southern twang), and then to Pennsylvania, where Grant attended high school and college at Penn State, majoring in Entomology. That time of his life would be pivotal, as he had the opportunity to work with Dr. Maryann Frasier, participating in various research projects, including ones on tracheal and varroa mites, wax moths and *Apis florea*. His fascination with our favorite insect burgeoned under Maryann's tutelage, and, in the summer of 1990, he obtained a summer internship with a migratory midwestern beekeeper, Gulf Coast Pollination.

The internship did the trick. If there had ever been any doubt before, there was none after that summer. Grant's future would be in bees. Unfortunately, there would be a price to pay for that summer. While helping to transport bees on a flatbed, Grant was in a serious accident. His left side was crushed, and he nearly died. He underwent sixteen operations during his recovery and walks with a limp to this day. That horrible experience did not, however, keep him out of bees.

After a brief stint as a bee inspector in Pennsylvania, in 1992, Grant accepted a job inspecting bees for the NJ Department of Agriculture and returned to the state of his birth. NJ would be his home from that point on. After only a year, he was promoted to the position of State Apiarist. A year later, in 1994, he took and passed the EAS Master Beekeeper exam. At age 24, he was, I believe, the youngest beekeeper to earn the title. Grant immediately set to doing what Master Beekeepers do best: teaching. He revived the Rutgers University short course, which hadn't been offered for some ten years prior. He also got honey into Jersey Fresh, NJ's agricultural marketing program.

NJ-based Stiles Apiaries grew from hobbyist roots into the migratory 10,000 hive operation it is today, with facilities in NC and NY, as well as NJ, where Grant and his family live. When he moved from PA to NJ, he came with only four hives. He'd had twenty the previous fall, but lost most to tracheal mites over the winter. As soon as he settled in NJ, he began to acquire more bees and

more bee yards. Four hives became 400, all in honey production. In 1999, Grant bought That Honey Place, his home base in urban Fords, NJ. As NJ State Apiarist, he couldn't accept pollination contracts because of possible conflicts of interest, but he could produce honey, and he did.

Grant had family in North Carolina and began to move his bees south for the winter. All the moving was done by hand. At that time, although he had a flatbed truck, he didn't yet have a forklift and the hives were not palletized. After one more career move in 2002, Grant was finally able to take on pollination contracts. He left the NJ Department of Agriculture to work for APHIS, still doing inspections of agricultural commodities, but for the federal government. And, even with a full-time job, he continued to grow his hive numbers. In 2010 he acquired a warehouse facility in upstate NY, enabling him to extract and package far more honey than the small NJ building could handle. By the time he bid goodbye to APHIS in 2013, he had 1200 hives. I remember marveling that he was able to take care of all those bees and work a full-time job. I still don't know how he did it. With characteristic energy, things happened fast once Grant was able to devote all his time to Stiles Apiaries. In 2014 he bought yet another warehouse, this one in North Carolina. Many hives would be wintered in the south and spring nucs would be grown there for sale to beekeepers in the north. Currently, Grant owns about 5000 hives of his own and manages another 5000 in a share crop arrangement. He now has a second NJ warehouse, also in Fords, and construction is underway on a 6000 sq ft addition to the NY warehouse, which will effectively double its size. Although they do some pollination, Stiles Apiaries' main focus is on honey production and packing.

About five years ago, Stiles Apiaries became a Mann Lake dealer. Today, Grant has the largest independent Mann Lake dealership in the country. New Jersey's beekeepers have benefitted enormously from this, as Grant provides equipment to NJBA members, usually at a discount if purchased through one of the local chapters. He also is one of the primary sources of spring nucs for the state. And these are not chintzy nucs, either. Grant's nucs are so strong they need to be carefully managed so they don't swarm. You get your money's worth!



It's ironic that Grant made fun of me for my Spanish expletives back in 1997, as he has since developed close ties to some wonderful people whose native language is Spanish. Around 2004, he began participating in the H2A Agricultural Visa program, bringing up highly qualified workers from Mexico for seasonal help with the bees. While in Mexico, he went on a blind date with Maria Guadalupe ("Pita") Amezcua. Sparks flew, and they married in 2011. Pita, diminutive and efficient, runs the business end of Stiles Apiaries from the Fords location. She has three children from a previous marriage, and the adoptive family is all involved in the business of bees. My Spanish is far from perfect, but I must suppress my laughter when I hear Grant speak Spanish. I can't laugh too hard, though, because he always manages to get his point across!

Outspoken and blunt, Grant has never been one to mince words or pull a punch. He will tell you exactly what he thinks. His gruff manner has been known to alienate

Today, Grant has the largest independent Mann Lake dealership in the country.

some people, but those he drives away are usually those he didn't want around anyway. I remember one nuc customer who showed up at Grant's to pick up several pre-ordered nucs and insisted that the bees, placed in the back of his pick-up, be closed in because he


would be driving through NYC and was afraid they would sting people. The temperature that day was in the 90's and Grant told the man that closing the bees in would kill them. He explained that the bees wouldn't be flying around, and that adequate ventilation was crucial to their survival. The man refused to sign the waiver releasing Grant of responsibility but continued to insist that Grant close up the entrances. Grant took back the nucs, returned the man's money and asked him to leave. The man refused. The argument got heated and ended with the police being called. I think many beekeepers would

have tried to smooth over the situation, or perhaps let the man leave with the bees and a verbal disclaimer. Not Grant. A good thing, too. Later, this same man wrote bad checks to several other beekeepers for nucs.

While he has little patience for know-it-alls who don't, he is generous and supportive to his friends and to people who, through no fault of their own, find themselves in need of help. Those who know him well, know that Grant would quite literally give you the shirt off his back. He'd just chew you out for losing yours first. Although, as one might imagine, given his time commitments, it's virtually impossible for him to do much individual mentoring, he's always available for a phone call. Any NJ beekeeper is welcome to call him and pick his brains, and many do. I have certainly done so on hundreds of occasions.

Some years ago, I was defending my right to keep bees at a location with a politically powerful, fearful, bee-hating neighbor. The case was being heard by the County Agricultural Development Board, which was, unfortunately, made up of people who knew next to nothing about honey bees. Grant donated many hours of his time, travelling to Board meetings a good hour away, to testify as an expert on my behalf, pro bono, as did my attorney, NJ beekeeper David Frank. Grant had the foresight to understand that my case could have far-reaching consequences and realized the importance of winning it. He was right. Shortly after the ultimate successful resolution, one of the state legislators became interested in helping beekeepers and honey bees and asked the then-president of our state beekeeping association what he could do. My case and its challenges figured prominently in her response and the final result was state legislation that was highly beneficial to beekeepers. Grant also chaired the NJ Honey Bee Advisory Board, a group formed to coordinate the efforts of the state Department of Agriculture, NJ growers, and commercial beekeepers. The group provided a forum where members could express their concerns and work together to find solutions when problems arose.

When Grant designed the floor plan for the new warehouse in NJ, he incorporated space for beekeeping classes. Last year he and Tim Schuler, NJ's immediate



Grant had the foresight to understand that my case could have far-reaching consequences and realized the importance of winning it. He was right.

past State Apiarist, started an intermediate class for NJ's beekeepers, which was widely praised and hopefully will continue after the current health crisis has passed. He also assists with the various short courses offered by several NJBA chapters, always refusing an honorarium and asking that any speaking fees be donated to help defray expenses of the NJ Honey Queen program.

While at Penn State, Grant met Tom McCormack, head of the McCormack Foundation, a charitable organization that assists needy people in the country of Panama. Grant and Tom became fast friends and Grant has now been collecting medical supplies and equipment for the foundation for decades.

Panama is not the only country to benefit from his altruism. Last year Grant went on a trip to Malawi, Africa, with Tim Schuler and several other NJ beekeepers (including EAS Master Beekeepers Kevin Inglin and Bob Kloss), with the Villages in Partnership program. While there, not only did he help the village beekeepers develop their skills with the bees, he also showed them how to make cold-process soap using beeswax. I had a hand



For Our Master Beekeeper Candidates

This crazy year has certainly thrown a wrench into the plans of many of us, and that includes those of you who were planning to take the EAS Master Beekeeper exam this year in Maine. While we can't make COVID-19 just disappear (Oh, would that we could!), be reassured that it will not affect your certification ambitions in any way other than to delay the process by a year.

Everyone who applied to take the exam earlier this year and was accepted as a new candidate will still be a candidate next year. All you will need to do is to notify us that you still intend to take the exam.

Those of you who are candidates "in process" from past years, i.e., have been accepted as candidates but have not yet passed all four of the qualifying examinations, you need not worry about the five year rule, which says that candidates have a five year time span in which to successfully pass all four exams. As far as you are concerned, 2020 never happened. We will not count a year in which there was no conference against you.

So breathe easy, in every way! Take care of yourselves, of your families, and your bees. And keep both your pencils and your beekeeping skills nice and sharp for 2021!

June 1, 2021 deadline for Master Beekeeper Certification Exam.

Landi Simone
Master Beekeeper Certification
Committee Chair

in this endeavor remotely, having designed and tested a soap recipe with products that we hoped would be readily available to the villagers. They used rendered goat fat and coconut oil, and, aside for the need for a bit of fragrance oil, the soap-making experiment was judged a success.

I feel very fortunate that I keep bees in New Jersey, not because of amazing honey harvests or wonderful weather, but because of the very strong ties I feel to the beekeeping community in my state. There are many wonderful, talented beekeepers in New Jersey, and, with our state and local beekeeping organizations, we work together to help each other and to nurture our newer members. Grant Stiles is a key member of that community, providing knowledge, equipment, and high quality bees to the rest of us, and quietly volunteering to help with whatever might be needed, whether it's hives for a club teaching event, taking care of an ailing friend's bees while he's in the hospital, or just staying in touch with a phone call to see how you're doing. I'm grateful to call him my friend, and proud that he considers me his.

FEATURED ARTICLES

Thinking of Brood Disease

By Dewey M. Caron

There have been reports of clusters of American Foulbrood (AFB) and heavier than usual cases of AFB being discovered by state inspection programs this summer. European Foulbrood (EFB) was more extensive in some areas than we normally see during spring colony development. As the first line of defense, what should EAS beekeepers be doing?

While Varroa mites should remain our major focus toward improving winter survivability and reducing losses, we should not neglect the traditional foulbrood diseases. Bee Informed Partnership (BIP) surveying reported the second lowest winter losses of the past 13 survey years (22% nationally – see the beeinformed.org website for losses in your state) but queen issues from poor queen rearing successes the previous year resulted in 2019-2020 being second heaviest in annual colony loss (44%) reported by beekeepers in the past decade.

Most of us (unless a bee inspector) see too little of the foulbrood diseases to become very proficient in identification of the field signs (we should be using term “sign” not “symptom”). We cover brood disease, often with excellent photos, at our association bee courses but often by the time diseases are covered, our newbees have had more instruction than they can absorb. Photos sometimes are a poor substitute for the dynamic nature of foulbrood – seeing one instance (in photos) does not mean you have seen them all.

We do not bring active infestations into the classroom often enough nor have the chance to view it in field instruction – we are especially wary of AFB in this regard. The EAS Master Beekeeper program lab exam and all Master Beekeeper instructional programs cover disease but varroa gets top billing, as it must, leaving the foulbroods with little ‘stage time’.

As we are more likely to see Parasitic Mite Syndrome (PMS) in our fall colonies, brood disease diagnosis gets confusing. Snot brood, cruddy brood or Idiopathic brood disease syndrome (IBDA) are 3 terms that designate brood irregularities of uncertain pathogenicity which share some signs with the foulbroods. Starvation, chilling of brood and dry larval cells are non-pathogenic features that might also be



Knowing disease starts with knowing “Healthy brood” – here new adults hatching



confusing. What we might see is influenced by the extent of mite infestation and seasonal factors. We expect foulbrood to look like the photos but seeing early infestations or failing to take into account the age of a foulbrood-infected larvae or responses of adult bees can confuse the interpretation.

We need to include a foulbrood inspection during both fall and spring managements. Non-removable frame hives and of course feral hives cannot be inspected, making it all the more important to protect our own hives. We can learn what “healthy” is - diseases present “non-healthy” signs. Concentrate on non-capped brood for EFB and capped brood for AFB. Yellowish, off-color, prominence of trachea and incorrectly positioned older (but not-yet-capped) larvae are the best keys to diagnosis of EFB. Sunken, off-color watery cappings with perforations and decomposing café-au-lait colored brood remains below cappings are major signs of AFB. Hygienic bees will remove cell cappings in a scattered fashion and the dying snot/cruddy/IBDS is often just a blob, not strongly off-colored but removable from their cells with a toothpick or forceps. And, of course, high mite level or evidence of mites in cells (or their droppings) should accompany the brood.



A spotty brood pattern could be disease or PMS brood or just a poor queen. You have to look closer.

These are all generalities. Since we can get signs confused there is an important last step - once you make a diagnosis, you need get it confirmed. Your mentor, the bee inspector (if your state has one), a Master Beekeeper, an expert in your bee community, mailing a sample off to Beltsville bee lab or using the Vita AFB/EFB test kits are all means for confirmation. Don't neglect the inspection and don't neglect the confirmation. It is up to us as responsible beekeepers to insure our bees remain healthy.



Local Honey: How Local Should it Bee?

by Jennifer Holmes

What is local honey? How often do we hear this question? We love this question, thankfully, as we hear it a lot. My goal is to educate both beekeepers and consumers about honey, so we are all on the same page and stay healthy. There are so many people who share with us that back through many generations of family and friends they have always heard honey was used for health reasons. In addition, we hear stories of being told time and time again, to make sure they use honey that is raw, unfiltered, and most importantly

LOCAL. What does this all mean for the honey consumer? How local is local honey?

The premise behind consuming local honey is that the pollen and nectar collected and turned into honey by the bees is from plant sources near where you live. Therefore, if you suffer from allergies, there is anecdotal evidence that that honey supports preventing, reducing and/or alleviating allergies and/or allergy symptoms. I have inquired many smart minds on this subject, and it seems that from a research standpoint, there is no evidence this is true. We humans who experience allergies, are predominantly because of windborn pollens. In contrast, most of the pollen honey bees collect is from plants that reproduce or produce their fruit from the act of the bee's pollination visit and then visiting another flower. This knowledge does not change the fact that many of

our honey customers are certain that local honey is the reason they did not have bad allergies after adding just a spoon or two of this amazing sweet stuff to their daily regimen.

How local does “local honey” need to be to have these magical benefits so many swear by? Well, think about where you live.

In my case, the plants that grow where we keep bees are plants found commonly throughout the entire State and even into neighboring States. Thus, I would consider any honey in our State and just beyond “local enough.” More than the geography of nectar and pollen producing plants, I recommend customers ask the beekeeper if the honey is filtered is using anything more than a coarse strainer (used to remove beeswax and debris) to maximize the pollen retained in the honey. Lastly, and this one is important, ask about heat used in the process. Honey is composed of complex sugars, nutrients, and enzymes. Honey’s health benefits are largely due to these and other volatile compounds from the plants the bees visit. The enzymes diastase and amylase are from the honey bee herself and the plant source(s) she visits. When honey bees collect nectar, they hold it in an upper stomach called a “honey crop” until they return to their hive and deposit it in comb or transfer it to a sister bee to make the deposit. That enzyme is mixed with the nectar and pollen, and beneficial bacterial (probiotics) are formed from the natural yeasts present, complex sugars, and the environment of the hive, making honey a live and healthful food. Heat and time will reduce or even destroy the enzymes and beneficial microbes and increase HMF’s (hydromethylfurfurol-don’t try to say that 3x fast). If honey is stored in hot temperatures or heated too high, and HMF’s are created and then that honey is fed back to honey bees, they will perish. There is some research regarding HMF’s, in corn syrup, you can do your own research and decide for yourself.

There is a wide range of interpretations around what defines “local honey.” You can certainly enjoy “hyper local” and some beekeepers even sell honey by the zip code of the colony. I love honey so much; I seek

out as many varieties from as many beekeepers as I can. I am currently working to create a sensory understanding of each honey and think it is fun to experiment with honeys in different ways. There are so many single and multi-floral source honeys to try, some are almost clear in color, others as dark as molasses. Some honeys are extremely sweet with a heady parfum fragrance, others not sweet at all and almost bitter. Honey can be used in just about any recipe you can imagine, or you can substitute honey for sugar. There are handy dandy conversion guides all over the internet. Honey is also amazing to use topically for skin cleansing, moisturizing, toning, and to help with burns and infections!

If you haven’t fallen for honey like I have, try a “honey tasting flight”, by getting several small jars of different honeys, and tasting them side by side, taking a little time and a drink of water in between each one. While you are at it, set out a nice plate of cheeses, and fruit, and have a little snack I promise you will remember. There are amazing beekeepers with wonderful honey readily available just about anywhere so local honey should be easy enough to find.



Jennifer Holmes runs the Hani Honey Company with her family in Florida, is a Master Beekeeper and leads honey-judge training as part of the University of Florida (UFIFAS), serves as the current President of the Florida State Beekeepers Association, Co-Chair of Slow Food Gold and Treasure Coast and is a member of the EAS Honey Show Advisory Committee.

EAS RESEARCH AWAREDEES

The following two EAS Rearch Awards were intended to be presented at the EAS 2020 in Maine. The summaries of the research of the successful awardees is presented, below.

Cameron Jack's Report

By Cameron Jack

EAS 2020 Student Award Winner

Cameron Jack grew up in a small rural farm town called Logandale, NV, just outside of the lights and glitter of Las Vegas. His Grandpa was a high school principal but supplemented his income through beekeeping, managing about 150 hives for honey production and pollination. Cameron grew up around honey bees and beekeeping, often helping his grandfather with hive inspections and honey extraction. He obtained his B.S. degree in biology from Southern Utah University in 2012 and completed his Master's degree at Oregon State University under the mentorship of Dr. Ramesh Sagili in 2015. There he conducted research on the honey bee gut pathogen *Nosema ceranae*. He then traveled across the country to pursue a Ph.D. at the University of Florida under the mentorship of Dr. Jamie Ellis, where he began investigating methods to control the devastating pest *Varroa destructor*.

Cameron's first research project was conducted with the purpose of evaluating different methods of rearing *Varroa* in the laboratory. Honey bee researchers would benefit greatly by having constant access to the mite, allowing for year-round research focused on developing new and innovative mite control methods. Four methods were tested for rearing *Varroa* in a laboratory. Cameron's investigative team found that *Varroa* survived best in gelatin capsules that contained a honey bee pupa (Fig. 1), on which the mites could feed and reproduce. Importantly, the findings from this research eliminate three methods that are unlikely to be successful for future rearing attempts and will facilitate the development of new protocols.

Cameron's second project was more relatable to

beekeepers, as the purpose now was to evaluate the efficacy of oxalic acid (OA) vaporization and brood interruption in controlling *Varroa*. Oxalic acid, an organic compound found in plants, was vaporized and applied to hives per label directions (Fig. 2). Brood interruption was administered to some colonies by caging a queen for 24 days, thereby removing all brood from the nests. The researchers found that colonies treated with OA vaporization at the current legal rate of 1 g OA per brood chamber experienced higher mortality rates and lower overall health than colonies treated with Apivar®, the current industry standard. Additionally, brood interruption is not a recommended practice in the late summer in Florida, as many colonies did not recover fully from the dramatic loss of brood. These findings demonstrate the ineffectiveness of the current label for OA vaporization.

The researchers vaporized the hives at their assigned dose once per week for three consecutive weeks.

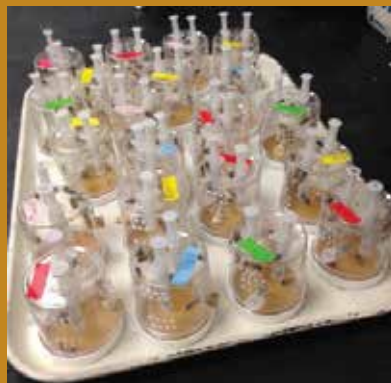
In a follow up to the previous OA study, Cameron and his team sought out to find what would be an effective dose of OA applied via vaporization. For this study, they tested a range of doses from 1 - 4 g OA per brood chamber and measured many different colony strength parameters to determine the effect increased doses would have on the colonies (Fig. 3).

At the end of the three-week period, the colonies assigned to the 1 g OA treatment had *Varroa* levels similar to the non-treated colonies, supporting the findings from the previous OA research. At the 4 g OA level, there was a significant decrease in *Varroa* levels and surprisingly there were no observable negative effects to colony health. While there is much more research needed to confidently recommend an increase in OA dose to the Environmental Protection

Agency, these results demonstrate that OA vaporization can be an effective method for Varroa control.

Cameron was back in the laboratory for his final Ph.D. project, which was focused on finding new chemical controls that could be used by beekeepers in the future to control Varroa. With only a few compounds available on the market, the same chemicals are often used by beekeepers repetitively and without rotation. Cameron, along with many other collaborators, screened the toxicities of five compounds to Varroa and to honey bees to determine a selectivity ratio (Fig. 4). A selectivity ratio allows for the comparison of toxicities between the bees and the mites. The primary goal of this research is to discover previously untested compounds that might be very toxic to the mite with a low toxicity to honey bees. Excitingly, the researchers were able to identify a promising compound that was both toxic to mites, but seemingly non-toxic to honey bees. However, many more studies will need to be conducted to determine the compound's safety to all stages of honey bee development and the environment before a product can be made. Nevertheless, the discovery of a potential new compound has the potential to be an enormous benefit to a suffering industry.

Cameron recently completed his PhD in March of 2020 and was hired as a lecturer in the Entomology and Nematology Department at the University of Florida. He is currently seeking to create a premier educational program that prepares students for the many challenges associated with beekeeping and to train those interested in entering the beekeeping workforce. He and Jamie Ellis have now created six beekeeping related courses and have plans for more in the near future. He is still pursuing his research interests, working with undergraduate students, and looking for novel methods to control the devastating pest, *Varroa destructor*.



Viruses linger in deadout comb and honey

By Emma Walters and Dr. Christina Wahl
EAS 2020 Student Award Winner

Finding deadouts in winter and early spring is one of the most disappointing parts of beekeeping. If you've kept bees for several years, by now you likely have a routine way of cleaning up your deadouts and preparing the equipment to use again that season. You may also be able to identify why that colony died, pinpointing issues such as queen loss, starvation, bacterial infections, Varroa mites, or other factors. It is common practice for beekeepers to reuse comb from dead colonies. It is a valuable resource that takes bees considerable time and energy to construct, and beekeepers have noticed that old comb is generally preferred by bees for brood building. Purchasing new equipment for every new colony is an expensive and unsustainable option for beekeepers who routinely lose many colonies each year. While reusing drawn comb can save honey bees time and energy and provides a good head start toward building their nests and growing their populations, this comb can pose a risk to bees if it contains pathogens.

It's been known for many years that some diseases can remain in brood comb after a colony dies; Nosema, American foulbrood, European foulbrood, and even chalkbrood can linger and infect new bees that are given contaminated equipment. General advice to beekeepers now includes recommending removal of brood combs after three to five years' use and disinfecting combs from colonies that died from diseases. Beekeepers use a variety of practices to disinfect their combs, such as freezing, fumigation, bleaching, or irradiation.

In recent years, as *Varroa* mites have begun dominating the conversation surrounding colony loss, a new question has surfaced: **when wintering bee colonies die, do their viruses remain in the hive?**

Since their introduction to the US in 1987¹, Varroa mites have rapidly spread across the country and now

infest nearly every honey bee colony. These mites transmit at least seven common viruses² when feeding on honey bees. Samples collected from 208 colonies in New York State in 2016 found a staggering 96% had deformed wing virus (DWV), 52% had acute bee paralysis virus, 15% had Lake Sinai virus 2, 10% had Israeli acute paralysis virus, and 1% had Kashmir bee virus³. Together, the Varroa mite and its associated viruses are a significant predictor of honey bee colony losses in the United States and worldwide⁴⁻⁶. With the difficulty of effectively managing Varroa mites, and without any treatments for honey bee viruses, beekeepers regularly lose colonies to virus infections. We at Cornell University and the Empire State Honey Producers Association have frequently been asked, is deadout equipment safe to reuse? Or do viruses remain in comb and honey after the colony dies? Each winter since 2006, between 23–36% of honey bee colonies die in the United States⁷, so a lot of comb is reused each spring without knowing whether or not viruses are being transmitted to new colonies from this equipment.

VIRUSES HAVE ALREADY BEEN FOUND IN OTHER HIVE MATERIALS

Very little published research currently exists that explores honey bee viruses in other hive materials. To date, we know that honey bee viruses can be detected in comb in live colonies⁸, and it appears likely that they remain in stored comb for weeks or even months⁹. Preliminary work with DWV finds it to be fairly stable in various environmental conditions outside of their hosts. Virus isolates placed in test tubes are detected at high levels two months later in light, dark, humid, dry, warm, and cold environments¹⁰. DWV has also been found in honey and pollen stored for 6 months, and even after this long period of time it remains infective¹¹.

RESEARCH SUPPORT FROM EAS

In April 2019, Emma Walters and Dr. Christina Wahl received a grant from the Eastern Apicultural Society to investigate whether viruses persist in brood nest comb and residual honey in deadout colonies. Our goals were to 1) to determine whether some of the most common honey bee viruses persist in combs and honey after the colony has died, and 2) to ascertain whether management practices and Varroa levels influence virus levels found in these materials. We recognize that the mere presence of viral nucleic acids does not indicate infectious competence. In this preliminary study, we



Dead bee showing symptoms of deformed wing virus. Bees heavily infected have shriveled wings and tend to be smaller in size than their sisters. They die without contributing anything to their colony.

are simply trying to determine whether viral material is detectable in combs and honey.

SAMPLING BEEKEEPERS' DEADOUTS

Four New York State beekeepers graciously offered to let us sample comb and honey from their winter deadouts in March 2019. These beekeepers represented most of the variety found in management practices of the industry in the Northeastern US: they vary in the number of colonies they manage, in which states they winter their colonies, their apiary "crowdedness" (i.e., the number of colonies per yard), and their previous fall Varroa levels. To test for the influence of beekeeping management practices and Varroa populations on virus levels, selected apiaries were chosen based on 1) whether the colonies wintered in New York State or were transported to a southern state, 2) the density of colonies in the apiary (i.e., 10 or more was defined as "crowded", fewer than 10 was "uncrowded"), and 3) average operation Varroa levels in September 2018 as assessed by the NYS Beekeeper Tech Team.

We predicted the presence of viruses in deadout hives would be most likely in operations that had high Varroa levels the previous autumn, that wintered in southern states (because these colonies would most

likely experience a shorter brood break compared to those wintering in cold NYS), and that kept hives in crowded apiaries (which could facilitate Varroa and virus spread through drifting¹²). Table 1 shows a breakdown of the participants' practices. We sampled colonies from two different apiaries for each beekeeper. In total, we took comb samples from 34 deadout hives. Of these hives, 13 contained residual capped honey in the brood nest that we sampled (the remaining 21 hives contained no honey in March).

We collected comb samples using the wax collection method established by the National Honey Bee Survey¹³. Briefly, we pushed the broad end of a hive tool into the comb to its central foundation, then turned it 90 degrees. We focused on sampling regions of the comb formerly used for rearing brood, which we defined as darker comb containing cocoon residue. We removed wax from 5 locations on each comb surface and selected regions of empty comb that did not contain any brood, pollen, or honey. We collected capped honey using clean wooden tongue depressors (hobby craft) sticks. All samples were normalized for weight. The University of Maryland processed our samples for eight predominant viruses found among New York State honey bees: DWV strain A, Varroa-destructor virus 1 (VDV-1; also known as DWV Strain

Beekeeper	Operation scale		Apiary	Autumn Varroa levels		Wintering location		Apiary Crowdedness	
	Large (>500 hives)	Small (<200 hives)		Low (<3%)	High (≥3%)	New York	Southern state	Low (<10 hives)	High (≥ 10 hives)
A			1						
			2						
B			1						
			2						
C			1						
			2						
D			1						
			2						

Table 1. The four beekeepers enrolled in the project varied in their operation scale, fall Varroa levels (as measured by the NYS Beekeeper Tech Team), wintering location, and apiary crowdedness. Yellow shading denotes the category of the operation and apiary.

B), black queen cell virus (BQCV), chronic bee paralysis virus, Israeli acute paralysis virus, Kashmir bee virus, Lake Sinai virus 2, and sacbrood virus. These viruses were chosen because they are routinely detected each year throughout the US by the National Honey Bee Survey efforts.

FINDING 1: VIRUSES ARE RARELY FOUND IN BROOD COMB

Most brood comb did not contain any viruses. Of the 34 deadout colonies we tested, only four (12%) contained detectable levels of viruses. The virus in all of these colonies was Varroa destructor virus-1 (DWV Strain B). None of the other viruses we tested

were present in the comb. Three of the four hives were owned by a small scale beekeeper who had low Varroa levels in his operation the previous autumn. The hives wintered in New York State in uncrowded apiaries. The fifth colony with this virus was managed by a large scale beekeeper that also had low Varroa levels in his operation the previous autumn. The hives were brought to a southern state to overwinter and are kept in crowded apiaries. The other hives tested from these same beekeepers' apiaries had no detectable viruses.

The levels of VDV-1 in the comb were low, but if the quantities of VDV-1 RNA found were from virulent virus, and not damaged or otherwise incompetent viral particles, then the levels are within the realm to occasionally cause symptomatic infections (bees with deformed wings). When detected in comb, the average virus copy number was 209,917, with a range of 49,756 to 237,243 (Figure 3). It has been documented that bees with anywhere from 333 to 8,300,000 copies of the VDV-1 virus have been demonstrated to show symptoms of deformed wings, though deformed wings are most often observed once the virus load in the bee is more than 10,000,000¹⁴. This is a level that is several orders of magnitude higher than what we found in comb. Furthermore, for a bee to establish an infection, a larva must consume at least 100,000,000 copies¹⁵. It is unlikely that the levels we found in comb would pose a risk to honey bees installed on this deadout comb.



Figure 2 Sampling comb (left) and honey (right) from deadout colonies.

Varroa destructor virus-1 is relatively new to the United States, first detected around 2010. This new strain of DWV has the highest infection load in bees compared to other viruses routinely screened¹⁶, and it is now the most prevalent tested bee virus in the United States¹⁷. Perhaps its prevalence and high infection load offer some explanation as to why we detected only this virus and no others in comb. Based on this preliminary project, virus levels in brood comb do not vary based on beekeeper management practices.

Even though the virus levels are low, will I infect my bees if I reuse those deadout brood combs?

It's important to note that the presence of the virus does not automatically imply that the virus is "active" or "replicating" (i.e. capable of infecting bees). It is possible that the virus we are detecting is "inactive" or "degraded". If these viruses are inactive, there would be no risk to bees installed on these combs. Further experiments are needed to determine whether the virus remaining in deadout combs are actually capable of infecting bees. These experiments would require someone to rear brood on infected combs and see if they develop an infection.

Overall, this is good news for beekeepers. It appears very few viruses are capable of remaining in comb for long periods of time. Those that do are found at relatively low levels that have been occasionally demonstrated to cause active and symptomatic infections in bees.

FINDING 2: VIRUSES ARE COMMONLY FOUND IN HONEY AT LOW LEVELS

In contrast to brood combs, all of the honey samples taken from 13 deadouts were positive for at least one virus. Three of those samples contained two different viruses and six of the samples contained three different viruses. Every comb we tested had detectable levels of BQCV, another very common virus in New York bees³. The second most common was VDV-1, followed by sacbrood virus, and finally Lake Sinai virus-2. No other viruses were detected in honey. Similar to comb, the presence or amount of viruses in honey did not vary between operation scale or beekeeper management practices.

The virus loads we found in honey tended to be higher than those found in comb. The virus with the highest load was sacbrood virus, with an average number of 36,169,411 virus copies. This was followed by VDV-1, DWV, Lake Sinai virus-2, and finally BQCV (Figure 3). While BQCV was found the most frequently, it had the lowest average load of all the viruses.

If these viruses are indeed active and can be transmitted to bees that consume the contaminated honey, they are sometimes—though rarely—found at levels where we could expect to see symptoms for DWV and VDV-114. They are certainly present in high enough levels to infect bees asymptotically. While this may not produce a symptomatic infection with deformed wings, chronic asymptomatic viral loads do affect colony performance and shorten the lifespan of bees¹⁵.

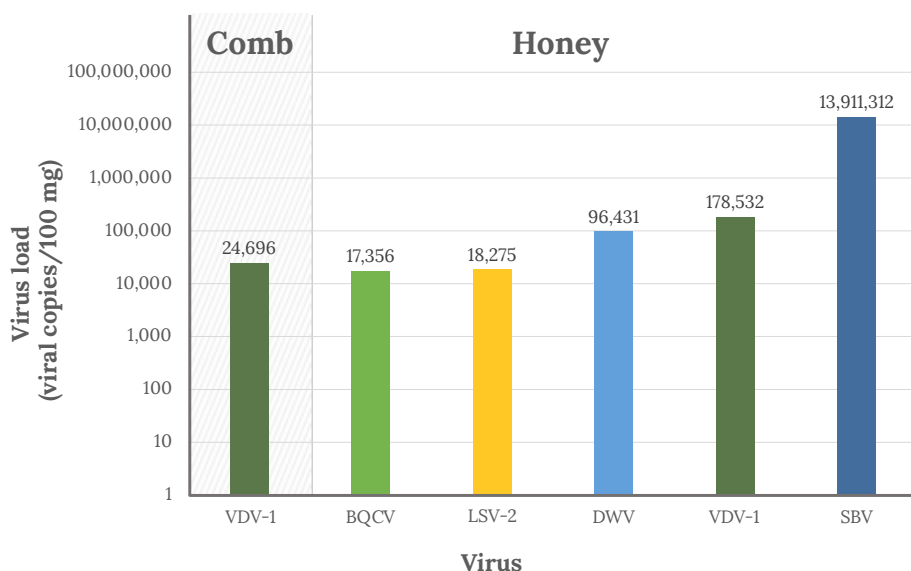


Figure 3. Average virus levels in deadout comb and honey.

The levels that we found in honey are also several orders of magnitude lower than the average levels we tend to find in live bees in New York State. For instance, the NYS Beekeeper Tech Team sampled viruses from 389 colonies in 2016 and 2017. They reported bees contained an average of over one billion copies of BQCV (compared to 17,356 copies in deadout honey), 531,000,000,000 copies of DWV (compared to 96,431 copies in deadout honey), and 2170,000,000 copies of LSV-2 (compared to 18,275 copies in

deadout honey)^{3,18}. Overall, it seems that viruses are transferred into honey, but they persist there at much lower levels than what we tend to find inside bees.

Can I infect my bees if I feed live colonies with frames of honey from deadouts?

We do not yet have evidence that demonstrates feeding frames of honey can infect healthy bees. As we noted above, the presence of the virus does not imply that the virus is active. However, it is understandable that some beekeepers might feel wary about the practice given 1) how commonly we detected viruses in honey and 2) that honey bees consume the honey and in doing so may directly ingest the virus. It is compelling to note that beekeeper surveys collected by the Bee Informed Partnership consistently find beekeepers who feed colonies frames of honey from their deadouts experience higher losses than those who do not do this practice¹⁹.

THE TAKE HOME MESSAGE

This small study identified that viruses are uncommonly detected in dead out brood combs, but are commonly found in honey at low levels. Follow up research is needed to determine whether the viruses present in deadout equipment are active and capable of infecting new bees that are installed on these combs or fed old frames of honey. If additional research confirms these viruses are indeed capable of infecting bees, it will be important to identify particular strategies that may minimize viruses in hive materials and to develop effective sterilization procedures.

IN THE MEANTIME, HOW SHOULD I DEAL WITH COMBS FROM MY DEADOUTS?

Here are some basic recommendations for dealing with combs before reusing them:

Brood combs

1. Inspect combs for European foulbrood scale or chalkbrood mummies. If frames contain these, discard them.
2. Inspect combs for American foulbrood scale. If frames contain these, burn them or irradiate them. Burn and irradiate any other combs that came from those same hives. Scorch or irradiate any hive bodies from these colonies.
3. Freeze remaining combs that are free from visible disease for at least seven consecutive days to inactivate some *Nosema ceranae* spores²⁰ and to kill



The authors Christina Wahl (left) and Emma Walters (right) sampling combs.

all life stages of small hive beetles and wax moths.

4. Store these combs in air tight stacks, bags, or containers, or in such a manner that frames are exposed to light to continue to deter wax moths.

Capped honey combs

1. Discard any frames that contain evidence of dysentery or fermented honey or syrup.
2. Freeze frames of capped honey for at least seven consecutive days to inactivate some *Nosema ceranae* spores²⁰ and to kill all life stages of small hive beetles and wax moths.
3. Store these combs in air tight stacks, bags, or containers, or in such a manner that frames are exposed to light to continue to deter wax moths.
4. If you feed these frames to colonies, monitor colony health for signs of viruses.
5. If you want to be on the safe side, you could avoid feeding frames of capped honey to bees until more is known. Instead, extract it as cooking grade honey. These viruses do not infect humans.

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AWARDS AND GRANTS

Upcoming Award Deadlines

By Doris Morgan, Secretary, EAS

The following schedule is a listing of the Award deadlines for the EAS sponsored awards, grants and scholarships:

FEBRUARY 1, 2021 - Award deadline for Hambleton, Roger Morse, and Student awards

FEBRUARY 1, 2021 - Honey Bee Research Grant Submission Deadline

APRIL 30, 2021 - Deadline for Divelbiss Award Nominations

APRIL 30, 2021 - Deadline for Mann Lake Scholarship applications

JUNE 1, 2021 - Deadline for Master Beekeeper Certification Exam

Christi Heintz Memorial Scholarship Award

By Tammy Potter

A scholarship award of \$20,000 will be provided to one master's student doing research aligned with PAm's mission, who can also demonstrate their embodiment of Christi's spirit of curiosity, collaboration, and fearlessness.

Background: In 2006, Project Apis m. began working diligently on behalf of beekeepers and growers by investing in projects to solve honey bee health challenges. Founders contributed funds to support applied research to answer the highest priority questions. We strive to be the go-to resource for science-based answers. We are proud of where we are, excited by where we are going, and we know that none of this would have been possible without the vision, hard work, and tireless enthusiasm of Project Apis m.'s founding leader – Christi Heintz. Christi served as PAm's executive director for ten years and laid a strong foundation including the tradition of funding scholarships for future exceptional scientists. We encourage applicants who may not have met her to read her memorial. (<https://www.projectapism.org/project-apis-m-blog/the-legacy-of-christi-heintz>).

Many generous donors have contributed to this award recognizing and honoring her contributions to the beekeeping industry and the legacy she left through her leadership and friendship. A scholarship award of \$20,000 will be provided to one master's student doing research aligned with PAm's mission, who can also demonstrate their embodiment of Christi's spirit of curiosity, collaboration, and fearlessness.

Project Apis m. has become the largest non-governmental, nonprofit honey bee research organization in the USA. Established by beekeepers and almond growers in 2006, Project Apis m. has infused over \$8.5 million into 119 practical bee research projects to provide growers with healthier bees resulting in better pollination and increased crop yields, and \$2.9 million in restoring habitat to provide nutrition to honey bees.

EAS was proud to support this Scholarship with a \$500 donation.

EAS MA 2021

July 26 – 30, 2021



66th Annual Short Course and Conference*

University of Massachusetts, Amherst MA

Speakers:

- Dr. Tom Seeley
- Dr. Samuel Ramsey
- Dr. Cameron Jack
- Paul Kelly
- Bill Hesbach
- Dr. Scott McArt
- Dr. Tammy Horn-Potter
- Dr. Heather Mattila
- Michael Palmer

Workshops:

- Honey Judging
- Bees Under the Microscope
- Lotions and Potions
- Cooking with honey

Short Course Tracks:

- Beginner
- Intermediate
- Advanced
- Queen Rearing and Colony Management
- Hands-on beekeeping in the State Apiary

Special Events:

- Field Trips
- Auctions
- Honey Show
- Special Visit by Lorenzo Langstroth

Major Beekeeping Suppliers and Artisans



Nature, Culture, Food and Entertainment

Flagship campus of the University of Massachusetts system and nationally ranked public research university.

Downtown Amherst - Walkable mile of cuisine, culture, art, and independent film at the center of legendary trail networks for biking, hiking, arts, and literature.

90 miles from Boston and 175 miles from New York City. 64 miles to Tanglewood summer home of the Boston Symphony Orchestra.



EAS Master Beekeeping Program Testing & Certification

*More information on Conference schedule and details [HERE](#).

EAS BUSINESS

EAS 2020 Board of Directors Meeting

July 19, 2020 5:00 pm

Via WebEx

CALL TO ORDER

Lou Naylor called the meeting to order at 5:08 pm.

STATES/PROVINCES IN GOOD STANDING

Alabama, Connecticut, Delaware, Georgia, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, District of Columbia; Ontario

STATES/PROVINCES WITH EXPIRED DUES

Florida, Michigan, Illinois (vacant), Mississippi (vacant), Wisconsin (vacant), Canadian Maritime, (vacant), Quebec.

ELECTION OF NEW DIRECTORS

Nominations were received for two Director positions. A motion was made and seconded to elect Burton Beasley as Director for North Carolina and Leonard Davis as Director for Kentucky. Dorinda Priebe will continue to serve as Director for NH, just waiting for her state's letter of nomination.

The Directors from Michigan and Tennessee are eligible for an additional term and the positions for Massachusetts and West Virginia will be vacant. A letter of nomination is needed for all of these positions.

ROLL CALL OF OFFICERS AND DIRECTORS

Lou Naylor, Chairman; Linda Allen Mizer, Vice Chairman; Carol Cottrill, Secretary; Jack Hildreth, Treasurer; Peggy McLaughlin, President, ME; Mary Duane, Vice President, MA; Marilyn Parker, AL; John Baker, CT; Bob Bauer, DE; David Hocutt, IN; Leonard Davis, KY; Patty Wong, MD; Steve Repasky, Master Beekeepers; Dorinda Priebe, NH; John Gaut, NJ; Doug Vinson, NC; Jeannie Saum, OH; Vincent Aloyo, PA; Cindy Holt, RI; Nancy Simpson, SC; Karla Eisen, VA.

Absent: Erin MacGregor Forbes, Chairman Emeritus; Buddy May, Past President; Roger Blanco, FL; Mary Cahill Roberts, GA; Wesley Card, LA; Rich Weiske, MI; Ben Carpenter, NY; Michael Coulter, TN; Sam Golston, WV; Kevin Platte, DC; Tom Nolan, Ontario; Julie Fontaine, Quebec.

Committee Chairs and Guests: Erik Brown, Wild Apricot Lead; Tammy Horn Potter, Honey Bee Health Coalition; Jim Bobb, Life Membership; Doris Morgan, Secretary.

SECRETARY'S REPORT- Carol Cottrill

The March 21, 2020 Board of Director Meeting Minutes were distributed by email. A motion was made and seconded to accept the minutes as presented. Voted and passed.

There are still some states without Directors. Karla Eisen has worked to fill these positions over the past several years. A possible Director was suggested for Illinois, but a letter of nomination has not been received. Wisconsin indicated that their state association was not interested in having a Director.

TREASURER'S REPORT - Jacky Hildreth

Financial reports (Balance Sheet and Profit and Loss - attached) were emailed to Officers and Directors. EAS ended 2019 with a positive balance due to an improvement in investments. In the first six months of 2020 EAS investments decreased by \$49,000, donations to date are down \$6,000, income from dues is down around \$15,000. Expenses are less without the conference but there is still an accountant bill of \$4,200 and the last issue of the Journal cost \$3,000. These bills were paid using the Money Market account as there were not sufficient funds in the general account. The annual conference generates about \$15,000 in additional memberships from those who pay dues to attend. This year only \$5,000 in dues has been collected.

CHAIRMAN'S REPORT – Lou Naylor

Cancelling the conference this year was a difficult decision but given the current situation with travel restrictions still in place in Maine it was the right thing to do and was done at the right time. We need to encourage people to pay their dues and donate!

The University of MA is still closed so there has not been a campus visit. It is hoped that a visit will be possible as part of the fall board meeting.

Next year we do want to have a conference but if the situation is similar to this year a virtual conference will be planned. A Technical Team of Keith Inglin, Dave Meldrum, Erick Brown, Robert Bauer and John Stanhope is already looking in to platforms and possibilities. Georgia is doing their annual conference using Zoom this year and Ohio is also planning a virtual meeting for this fall.

VICE PRESIDENT'S REPORT (EAS 2021) – Mary Duane

The team has not been able to go to the venue but should be able to this fall. The conference is scheduled for July 26 – 30, 2021 at the University of Massachusetts in

Amherst which is in western MA. The theme is Past – Present and Beyond. A video and flier will be available on August first that EAS Directors can use to promote the conference. Since there have not been any in-person state meetings promotional materials will be sent to Directors and posted on the website. Fliers will not be printed but available as a PDF.

SITES:

- **2021** – Massachusetts
- **2022** – New York
- **2023** – still need a host state

COMMITTEE AND OTHER REPORTS

Awards/ Divelbiss

Roger Morse Award - Karen D. Rennich, University of Maryland

Student Award - Cameron Jack, University of Florida

Divelbiss - Barry Thompson - Maryland

Even though there is not going to be a conference, plaques were prepared for the Roger Morse and Divelbiss winners and have been sent to them. A Certificate will also be sent to the Student Award winner. Patty Wong has volunteered to do a virtual presentation at their state meeting for the Roger Morse and Divelbiss.

Honey Bee Health Coalition – Tammy Horn Potter

The Hive Management Working Group, has created "shopping lists"--one for U.S. and one for Canada - of approved medications and controls for beginners trying to navigate the approved products for specific hive problems. These lists were released during Pollinator Week. The audience for these is beginners who are trying to keep track all the approved medications/controls.

Tammy is also on the Forage and Nutrition Committee which is working to establish pollinator habitat on public lands. The fall meeting of the HBHC will be a virtual meeting so there will be no coast to EAS for Tammy to attend the meeting.

Honey Show Advisory Committee – Karla Eisen

The committee will regroup in the fall to work on a Policy and Procedure Manual for the Honey Show.

Journal – Linda Mizer

The issue has been finalized and printed and will be mailed this week. The file has been sent to Keith Inglin for posting.

The next deadline is September first. Requested content includes an update on the Honey Bee Health Coalition, another Master Beekeeper profile from Landi Simone, research summaries from last year's research award winners, updates from State Directors and the July Board Meeting minutes. Target for publication is mid-September to early October. Tammy mentioned that September is National Honey Month and pictures from the honey shows, recipes and other honey related content might be considered. Karla suggested information on proper labeling of honey.

Life Membership – Jim Bobb

Thanks to Mary Duane for all her work on Life Membership over the past years! Jim Bobb has agreed to take over a chair so Mary can focus on EAS 2021.

Membership Committee – Bob Bauer

Bob report that there have been 34 new Life Members since the conference last year. There have been 147 new members since the conference for a total of 1449 members (877 of these members are not life members). There are significantly fewer new members this year without the conference.

Site Inspection Committee

Waiting for the University of MA to be open for a visit.

Website/Website Committee

An app was purchased to use at the conference this year but will be used next year. Wild Apricot has a method to donate but we need a way to donate in honor of members who have passed. Erik is working to see if this can be set up in Wild Apricot and put on the website as well.

NEW BUSINESS

Scholarship Donation - Tammy Horn Potter

Tammy requested a donation from EAS to the Project Apis M undergraduate or Master's scholarship being set up in director Christi Heintz's honor. Although Christi was not an EAS member EAS has supported research programs for non-members through the Honey Bee Research program. The scholarship will be a one-time award and they have raised \$11,000 so far. Tammy suggested a \$500 donation; Jackie indicated that EAS could afford that amount. A motion was made, seconded, voted and passed to donate \$500 to this memorial scholarship. It was suggested that we ask the recipient of the scholarship to do an article for the EAS Journal.

EAS Secretary – Carol Cottrill

I have submitted my resignation as Secretary and Doris Morgan has been appointed to fill the position. Doris has been both Secretary and Treasurer of her association in NJ and has been a volunteer at many EAS conferences. Please welcome Doris to the Board – I am sure you will all be as supportive to her as you have been to me over the past several years!

ADJOURNMENT

The meeting was adjourned at 6:30 pm.

Carol Cottrill
EAS Secretary



Eastern Apicultural Society of N. A.						
Balance Sheet Previous Year Comparison						
		Jan - June 2020	Jan - Dec 2019	Dec 31, 18	Dec 31, 17	Dec 31, 16
ASSETS		INTERIM				
Current Assets						
Checking/Savings						
	Checking - TD Bank	3,711.10	7,647.22	34,207.28	29,479.95	66,347.53
	EAS2018 Checking	0.00	0.00	10,001.46	10,151.70	0.00
	EAS2020 Checking	1,000.00	636.23	0.00	0.00	4,682.55
	Edward Jones Account	11,451.21	11,055.05	11,467.80	15,508.43	13,109.70
	Petty Cash	0.00	0.00	0.00	0.00	0.00
	Total Checking/Savings	16,162.31	19,338.50	55,676.54	55,140.08	84,139.78
Accounts Receivable						
	Accounts Receivable	0.00	1,220.00	0.00	-70.00	600.00
	Total Accounts Receivable	0.00	1,220.00	0.00	-70.00	600.00
Other Current Assets						
	Undeposited Funds	40.00	65.00	180.00	0.00	0.00
	Total Other Current Assets	40.00	65.00	180.00	0.00	0.00
	Total Current Assets	16,202.31	20,623.50	55,856.54	55,070.08	84,739.78
Other Assets						
	Certificate of Deposits	30,909.40	39,961.89	44,146.96	39,687.19	34,795.53
	EAS Endowment (DCF)	163,410.63	192,448.77	164,839.81	179,670.16	157,537.79
	EAS Endowment (FAS136)	2,574.53	3,032.09	2,597.31	2,831.00	2,482.30
	Honey Bee Research Foundation	103,116.74	138,509.66	118,638.90	129,312.64	113,383.48
	MB Youth Scholarship Fund	0.00	0.00	0.00	0.00	0.00
	Total Other Assets	300,011.30	373,952.41	330,222.98	351,500.99	308,199.10
	TOTAL ASSETS	316,213.61	394,575.91	386,079.52	406,571.07	392,938.88
LIABILITIES & EQUITY						
Liabilities						
Current Liabilities						
Accounts Payable						
	Accounts Payable	404.50	3,796.08	-3,431.00	4,450.24	2,060.25
	Total Accounts Payable	404.50	3,796.08	-3,431.00	4,450.24	2,060.25
Other Current Liabilities						
	Other Current Liabilities	0.00	0.00	0.00		
	Total Other Current Liabilities	0.00	0.00	0.00	0.00	0.00
	Total Current Liabilities	404.50	3,796.08	-3,431.00	4,450.24	2,060.25
	Total Liabilities	404.50	3,796.08	-3,431.00	4,450.24	2,060.25
Equity						
Retained Earnings		4,769.31				
Temporarily Restricted						
	Ed Holcombe Distinguished Fund	14,000.00	14,000.00	14,000.00	14,000.00	14,000.00
	Ed & Anita Weiss Memorial Fund	1,000.00	1,000.00	1,000.00	1,000.00	
	Honeybee Research Fund	0.00	0.00	0.00	2,708.00	15,051.00
	MB Youth Scholarship Fund	0.00	0.00	3,952.00	3,117.00	2,117.00
	Roger Morse Award Fund	0.00	0.00	0.00	-54.00	997.00
	Temporary Restricted					
	Total Temporarily Restricted	15,000.00	15,000.00	18,952.00	20,771.00	32,165.00
	Unrestricted Net Assets	371,010.52	371,010.52	383,168.83	370,107.63	351,428.11
	Translation Adjustment					
	Net Income	-74,970.72	4,769.31	-12,610.31	11,242.20	7,285.52
	Total Equity	315,809.11	390,779.83	389,510.52	402,120.83	390,878.63
	TOTAL LIABILITIES & EQUITY	316,213.61	394,575.91	386,079.52	406,571.07	392,938.88

Eastern Apicultural Society of N.A.						
Profit & Loss Previous Years Comparison						
		Jan - June 20	Jan - Dec 19	Jan - Dec 18	Jan - Dec 17	Jan - Dec 16
Ordinary Income/Expense		INTERIM				
Income						
	Donations Income	1,090.00	7,704.45	2,636.25	2,638.10	2,074.96
	EAS Journal Ads	0.00	160.00	950.00	0.00	0.00
	Exam Income	100.00	1,500.00	2,250.00	2,250.00	2,150.00
	Interest Income, Other	1,715.28	8,086.28	419.14	519.18	222.05
	Membership Dues	5,400.00	22,060.00	27,265.00	21,980.00	18,955.00
	Unrealized Gains/Losses	-49,608.51	46,148.00	-22,468.19	42,302.10	14,632.74
	Transfers					
	Total Income	-41,303.23	85,658.73	11,052.20	69,689.38	38,034.75
	Gross Profit	-41,303.23	85,658.73	11,052.20	69,689.38	38,034.75
Expense						
	Bank Service Charges	-29.29	4,199.37	5,244.12	4,930.90	4,218.87
	Board of Directors Meeting Exp	0.00	0.00	117.94	815.98	82.13
	Chairman's Discretionary Fund	0.00	0.00	0.00	191.00	30.94
	Dues Reimbursement	0.00	0.00	0.00	0.00	90.00
	EAS Journal Print	4,354.88	11,765.00	7,974.76	6,981.08	6,397.44
	Grants	16,493.52	12,638.00	11,000.00	14,000.00	13,000.00
	Insurance	1,550.00	3,074.00	2,755.00	2,589.00	2,557.00
	Interest Expense	0.00	0.00	0.00	0.00	289.52
	Licenses and Permits	497.73	595.00	502.51	175.00	235.00
	Master Beekeeper Prog. Expen	0.00	1,071.60	0.00	309.62	800.00
	Miscellaneous	0.00	0.00	0.00	0.00	0.00
	Office Supplies	75.96	232.67	93.15	143.52	1,126.69
	Postage and Delivery	17.45	570.74	624.46	387.75	8.91
	Professional Fees	6,293.20	26,417.60	26,699.01	20,796.57	19,934.32
	Program Expense	0.00	0.00	0.00	0.00	1,554.25
	QuickBooks Payments Fees	0.00	0.00	0.00	0.00	305.28
	Reproduction/Copies	0.00	0.00	457.75	250.00	0.00
	Repairs	0.00	0.00	0.00	0.00	0.00
	Staff Perdiem	593.56	7,763.29	14,490.58	10,740.11	5,252.69
	Telephone & Internet Svc.	162.00	207.80	345.00	295.66	468.00
	Web Site	0.00	3,854.60	4,374.72	1,719.00	1,434.00
	Total Expense	30,009.01	72,389.67	74,679.00	64,325.19	57,785.04
	Net Ordinary Income	-71,312.24	13,269.06	-63,626.80	5,364.19	-19,750.29
Other Income/Expense						
Other Income						
	Conference Accommodations	0.00	0.00	240.00	28,574.00	34,880.00
	Conference Attendee Fees	0.00	99,978.37	148,105.00	130,668.00	114,270.00
	Conference Auction	0.00	10,826.50	11,591.00	9,944.50	10,854.47
	Conference Sponsorships	0.00	2,775.00	4,600.00	3,750.00	12,550.00
	Conference Vendor's Fees	500.00	39,535.00	34,375.00	15,245.00	14,500.00
	Honey Show Sponsorship	0.00	4,900.00	5,900.00	5,800.00	4,700.00
	Raffle Tickets	0.00	0.00	0.00	0.00	0.00
	Short Courses	0.00	0.00	0.00	0.00	0.00
	Souvenirs	0.00	4,972.00	4,515.00	3,690.00	3,000.00
	Total Other Income	500.00	162,986.87	209,326.00	197,671.50	194,754.47
Other Expense						
	Conf. Accommodations	0.00	0.00	0.00	36,214.00	57,730.00
	Conf. Auction	0.00	0.00	214.56	0.00	0.00
	Awards	1,500.00	2,727.99	3,696.17	4,713.68	6,102.06
	Breaks	0.00	0.00	0.00	0.00	0.00
	Conference Meeting Room Exp.	1,619.00	26,153.03	21,794.96	43,720.00	17,580.00
	Conference Promotional Expenses	206.78	2,179.29	3,416.28	0.00	2,684.92
	Conference Registration	750.00	7,896.90	5,133.22	5,172.26	7,763.87
	Conf. Meals Special Events	0.00	85,969.61	72,554.22	77,465.04	50,645.52
	Entertainment Expense	0.00	269.89	115.00	0.00	0.00
	Equipment Rental, Conf.	0.00	4,826.76	5,170.00	164.78	158.21
	Exchange Gain/Loss	0.00	0.00	0.00	0.00	5,534.19
	Honey Show Expenses	0.00	2,754.13	1800.13	857.18	0.00
	Printing	82.70	5,659.45	9,490.57	6,038.87	2,443.00
	Raffle Ticket Winners	0.00	0.00	0.00	0.00	80.00
	Social	0.00	3,131.83	8,575.70	2,085.00	4,411.22
	MB Youth Scholarship Exp	0.00	1,000.00	0.00	0.00	0.00
	Speakers	0.00	22,620.49	20,617.00	12,026.22	10,335.67
	Vendor Expenses	0.00	3,158.00	2,090.00	2,645.00	0.00
	Volunteer Exp.	0.00	3,139.23	3,641.70	691.46	2,250.00
	Total Other Expense	4,158.48	171,486.60	158,309.51	191,793.49	167,718.66
	Net Other Income	-3,658.48	-8,499.73	51,016.49	5,878.01	27,035.81
	Net Income	-74,970.72	4,769.34	-12,610.31	11,242.20	7,285.52



COMMUNITY BUZZ



Pollen Identification

by Linda Mizer

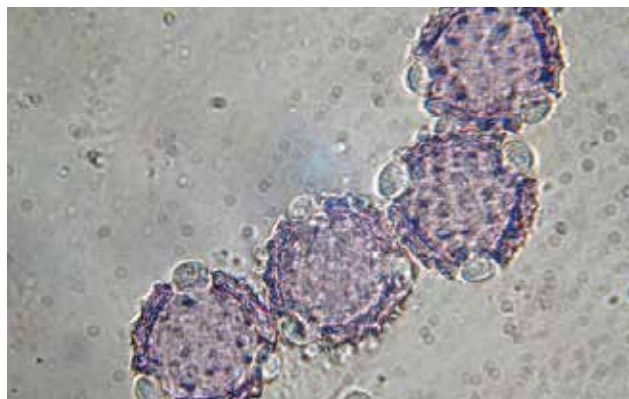
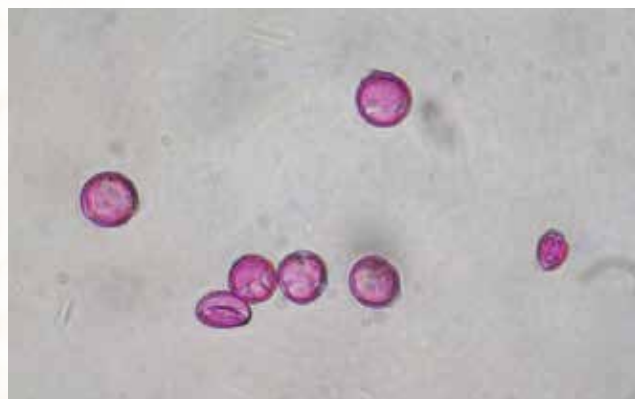
As the temperatures fall and daylight hours become shorter we are all reminded that fall is on the way! The last few vestiges of fall nectar and pollen sources are providing a buffet for our bees, although in some areas the weather has not been conducive to the plants flowering or our bees being able to get onto them. I hope all your colonies are settling in for the fall and winter with good stocks of honey, pollen and, of course, bees. These pictures of bees carrying pollen in their pollen baskets serve to remind us of the toil these little workers endure as the summer bees come to an end and the winter bees are emerging and taking on their new roles. Fall is one of my favorite times of year and where ever you live as an EAS member, I wish you and your bees a great transition into the cooler weather.

Please continue to send images of honeybees (with pollen baskets full) on plants throughout the seasons. I enjoy finding images of their pollen grains and developing an appreciation of the wide range of plants that are visited throughout the EAS landscapes.

1. *Hydrangea* sp.
2. *Caryopteris*
3. *Centaurea Nigrescens* (Tyrol Knapweed)
4. *Solidago* sp. (Goldenrod)



PHOTO CREDITS: 1 and 4) Kitty de Groot 2) Jean Miller 3) Lou Naylor. No images were altered from their original state.



POLLEN CREDIT: *Hydranga Macrophylla* (right) and *Centaurea artbutifolia* (left). Images courtesy of Science & Plants for Schools, found at <http://www.saps.org.uk>



In Memoriam

BOB SHAFFER

SEPTEMBER 15, 1926 - OCTOBER 3, 2020

Bob Shaffer, age 94, long-time resident of Hershey, died on Saturday October 3, at the home of his son in Pine Grove. He was born September 15, 1926, in Shade Township, Somerset County, PA to the late David and Iva (Cable) Shaffer. Bob's survivors include daughter Laura Henton & partner Joseph Parsons of Martinsburg, WV & Parsonsfield, ME, and son Christian & partner Christine Zimmerman of Pine Grove, PA; 6 grandchildren: Rebekah Rauch, Rachel Shazak, and David, Adam, Ronin, and Evelyn Shaffer; 8 great-grandchildren, and many nieces & nephews. He was predeceased by his wife Arlene (Snyder) of nearly 61 years, as well as by his siblings, Richard, Shirley, and Marlin.

Bob graduated from Shade Township High School (Cairnbrook) in 1944 & was drafted shortly thereafter, serving as an Army paratrooper (187th RCT) in the Pacific theater. He used his VA benefits to attend Penn State University, graduating in 1951 with a bachelor of science degree in Agriculture Education. He taught Vocational Agriculture at East Donegal High School (Lanc Co) for 2 years before joining Aircraft-Marine Products (later AMP) in 1953. Bob started in the Field Engineering department in Springfield, Mass (where he & Arlene started their family); he was later promoted to supervisor, and then department manager from the Harrisburg office.



Bob was active in local politics, working as a Derry

Township auditor and on the Board of Supervisors. He & Arlene were the Republican committee people for their precinct for many years; Bob was the chair of the township Republican committee for a time. He regularly attended meetings at the Hershey Brownstone Lodge #666 and was a member of the Consistory and the Shrine. He loved his church, faithfully serving as a trustee, deacon, and Sunday school teacher.

Bob enthusiastically kept honeybees for decades. He was president of the Dauphin County Beekeepers (1976-78), the PA Beekeepers Assn (1979-86), & the Eastern Apicultural Society (1985). He was selected PA's Beekeeper of the Year in 1994 for his work in promoting beekeeping and teaching the next generation of beekeepers.

Most importantly, Bob was extremely proud of his family, and he found great joy in spending time with them. He was especially proud of those family members who ran for public office or held positions of leadership for the common good.

Upcoming Meetings

MSBA VIRTUAL ANNUAL MEETING

Saturday, October 17, 2020

Speakers: Jon Zawislak; Dr. Meghan Milbrath; State Apiarist, Jennifer Lund; and 2020 National Honey Queen, Mary Reisinger.

mainebeekeepers.org

FALL HBHC VIRTUAL MEETING

will be held on Nov. 09, 2020

SPRING HBHC MEETING,

tentatively scheduled to take place in Traverse City, MI in May (around bloom time), pending government travel recommendations



Learn with Me...

By Landi Simone

In the very early years of my beekeeping career, I learned a hard lesson about keeping hives level. This was in the late 1990's, before screened bottom boards came into common use, and the then-current wisdom was to tilt your hives forward a bit so that any rainwater hitting the bottom board would not accumulate inside the hive. At that time, I had four or five hives at my home apiary, which lies near the base of a slope going down to the two acre pond behind our property. It was a strong honey year and I had three or four honey supers on one of the hives, making it pretty tall and top-heavy. There was a five-strand electric fence around the apiary – necessary due to our high black bear population. One swelteringly hot and humid afternoon in August, I meandered down to check on the bees and found, much to my dismay, that the tallest hive had tipped over and was balanced precariously against the wires of the electric fence, which was the only thing keeping it from toppling into the pond!

What should I do?! Clearly I had to do something right away, before the wires broke and my bees took a swim! So I donned my veil, wisely put gloves on, and decided to try to just tilt the whole thing back onto the cinder block hive stand. It was sitting at about a 30° angle, so I reasoned this might work. I turned the juice of the fence off, and positioned myself in front of the hive. Because of the natural slope of the ground, I was standing perhaps three feet lower than the hive, with the entrance at about the level of my waist. I braced myself and began to push the hive back where it belonged.

The bees were not pleased with my efforts. To this day, I can't imagine how they might have been affected by the electric fence, which should have been shorted out, but I'd swear that based on the way they reacted, it seemed as if they'd all been getting electric shocks for hours. They came ROARING out the entrance and, within a period of about thirty seconds, they'd stung me at least 20 times, right through my leather gloves and my sturdy denim overalls. They discovered my ankles and had a field day crawling up and stinging my legs. And I won't even talk about what they did to my arms.... I wanted to panic, but confined my reaction to a few choice words and hastily let the hive rest back



on the wires of the fence. When I felt it wasn't going to fall into the pond, I cut and ran! Up the slope and back to the house, angry bees chasing me the whole way! Ducked into the screened-in back porch, angry bees followed me! Into the house! They came, too! Into the bathroom! Slammed the door! Each time I ducked through a door, more bees were left behind. My heart was pounding from the adrenaline rush as I picked bees out of the nooks and crannies of my veil and clothing. Finally more or less bee-free, I took a deep breath and tried to decide what to do next. I concluded that tilting the hive back into position wasn't going to work. I was going to have to take it apart, level the cinder blocks, and reassemble it.

To make a long story short, that's what I did. It took several attempts because the bees were so annoyed that normal protective gear just wasn't doing the job and I had to return to the house several times for more layers of clothing. I finally managed the job with cotton gloves under my leather gloves, two pairs of pants, boots, and a down ski jacket. As the temperature was pushing 90°, I was on the verge of heat stroke before I finished, but at least I wasn't getting stung anymore. And that hive was dead level when I finished with it.

So, what did I learn? The obvious lesson was to keep my hive stands level. But there was another lesson I learned.... not about the bees, but about myself. This less than pleasant experience didn't stop me keeping bees. I still wanted to do it, though I'll admit it was a couple of weeks before I ventured down to the beeyard again. The lure and fascination of the bees was more important to me than the pain and fear of a bad stinging incident. I went back, and have continued to keep bees for more than twenty years after this happened. I've come to think of this incident as my watershed moment, and I think all beekeepers have one at some point during their careers. The dabblers – the ones who have a mild interest or got a hive out of a desire to help the planet and “save the bees” – will not continue after their watershed experience. But all my good beekeeper friends who have been at it for many years have had similar experiences, and kept on keeping on.... with bees. Is it courage? Is it insanity? Maybe it's a little bit of both. Whatever the reason, the souls of beekeepers are different from those of normal, sane people. We just can't NOT keep bees.

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